



**North Dakota
Home Garden
Variety Trials
2012 Results**

NDSU EXTENSION SERVICE

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Chapter 1

Introduction

The Need for Better Research

The first step in growing a successful garden is to select a superior variety.

Gardeners who sow a **superior** variety can grow plants that will yield abundantly, resist diseases, and produce quality food. In contrast, gardeners who sow an **inferior** variety are headed for frustrations. No matter how hard they work in preparing the soil, watering and weeding, they may have disappointing results.

The benefits of selecting superior varieties for gardens are great. The National Gardening Association (NGA) estimates approximately one-third of households in North Dakota grow a vegetable garden.¹ Thus, there are approximately 93,000 households in North Dakota with vegetable gardens.

There are significant economic benefits to gardening. A national study by the NGA showed the average family with a vegetable garden spends \$70 on it and grows an estimated \$600 worth of vegetables.² Using this information, families in North Dakota reap a profit of over \$49 million per year in their gardens.

There is an important public health dimension to gardening. Vegetables and fruits are nature's richest source of micronutrients, minerals and dietary fiber. A diet rich in vegetables and fruits is associated with a decreased risk of obesity and certain chronic diseases such as cardiovascular disease, diabetes and some cancers. Nevertheless, only 11 percent of adults eat enough vegetables and fruits for a healthy diet.³ We need to eat more vegetables—growing a productive garden can obviously help with this.

Very little vegetable research is conducted at research stations in North Dakota. These few plots pro-

vide some insight into the characteristics of a variety, but they do not test varieties under actual gardening conditions. The environment at a field research station is dramatically different than at a home garden:

- The soils at field research stations are similar to soils at a farm; that is, relatively fertile and undisturbed. Soils in a backyard garden have been highly disturbed from home construction and land grading activities, and are intensively managed.
- Trials at research stations utilize tractors, large-scale irrigation equipment, and herbicides. Backyard gardeners use shovels, hoes (maybe a rototiller), garden hoses and watering cans.
- Trials conducted at research stations are out in full sun. Many home gardens have shade for at least part of the day.

The Bottom Line

To identify superior varieties for **home gardeners**, it makes sense to determine which varieties perform best in **home gardens** under the management of **home gardeners**.

Objectives

This program has three major objectives:

1. Home gardeners will identify superior varieties of vegetables.
2. Home gardeners will become more aware of new varieties and differences among varieties. This increased level of awareness will affect the way they select vegetable varieties in the future.
3. Partnerships between local families and North Dakota State University will be strengthened.

Selecting Varieties to be Tested

Seed catalogs are carefully studied to identify varieties that are widely available and appear promising for North Dakota. In many situations, a promising new variety is compared with a variety that is widely grown in the state. In 2012, 58 trials were established.

¹ National Gardening Association. 2008. Personal communication with Bruce Butterfield, Market Research Director.

² Templin, N. (2008, April 16). How much green can growing a vegetable garden save you? *Wall Street Journal*. <www.wallstreetjournal.com>

³ Elsevier Health Sciences (2007, March 19). Americans still not eating enough fruits and vegetables, according to studies. *Science Daily*. <www.sciencedaily.com>.

Preparation of Seed Packets

Seeds are ordered in bulk from seed companies. Seeds are subsequently packaged in coin envelopes. Adhesive labels that contain planting instructions (variety name, vegetable/flower type, time to plant, and recommended spacing for sowing and thinning) are affixed on each seed packet. Sweet corn seed was treated with Natural II, an organic fertilizer. All other seeds in our trials were untreated.

Distribution of Seeds and Supplies

This program is promoted by North Dakota State University (NDSU) Extension Service faculty and staff across the state. Information is also available at the web site <http://www.dakotagardener.com>. Interested gardeners in Spring 2012 were allowed to participate in up to five trials. The fee was \$1 per trial along with \$2.50 for handling and postage. Any interested child was allowed to receive seeds of one trial for free.

In all cases, gardeners sign a pledge before receiving seeds, promising to do all they can to evaluate the varieties fairly.

Besides seeds, growers also receive row labels to mark rows, and a string to help them lay out the 10-foot-long plots. Gardeners receive simple, yet detailed instructions on laying out their plots (Appendix 1). We encourage a 10-foot plot length to be minimal at getting quality data, but container gardening is allowed.

Gardeners are responsible for managing their crops. This includes fertilizing, watering, mulching, and using pesticides. They are encouraged to use their own gardening practices so the varieties are tested under actual home garden conditions.

Quantity and Quality of Participation

In 2012, approximately 250 households submitted results from their trials (this accounts for 75% of households who received seeds). Results from 945 research trials were submitted. Data were obtained in 41 of the state's 53 counties (Figure 2). No other program in the USA can match this program for its scope of participation and number of varieties tested.

A pleasant finding of this program is the quality of research conducted by home gardeners. These families demonstrate extraordinary enthusiasm in this project. Besides carefully filling out report forms, they often write detailed letters on their trials.

Weather in 2012

The growing season of 2012 was warmer and drier than normal (Figure 1).

The winter was unusually dry and gardeners could get into their gardens early in season. There were no unusual late frosts in spring and many plantings got off to a quick start. Rains were favorable in spring.

The climate turned dry in summer and there was minimal precipitation from mid-August to frost.

A hard frost on the weekend of September 22–23 put an end to the growing season; this is approximately one week earlier than normal for most regions.

Compiling the Data

Gardeners compared the two varieties in each trial for a series of traits, which included germination rate, plant health, earliness, yield and quality of harvested product. We asked them if they would recommend the varieties to other gardeners and which of the two varieties they preferred (Appendix 2). Comments were strongly encouraged.

Comments of growers regarding their taste preferences of the vegetables are a noteworthy bonus of this grass-roots research approach.

Approximately 5% of the reports showed data with inconsistencies; these reports were eliminated from the final analysis.

A selection of representative comments of gardeners on each variety is included in this report. Reports of previous years are available on-line at <http://www.dakotagardener.com/trials/>.

Reporting the Final Results

The final results are reported to interested seed companies and NDSU educators. Newspaper and online columns are written to report findings. Presentations are made to over 1,000 gardeners every spring at conferences across the state. Participating gardeners receive a summary of the results (see page 4) and a certificate to recognize their participation in the program.

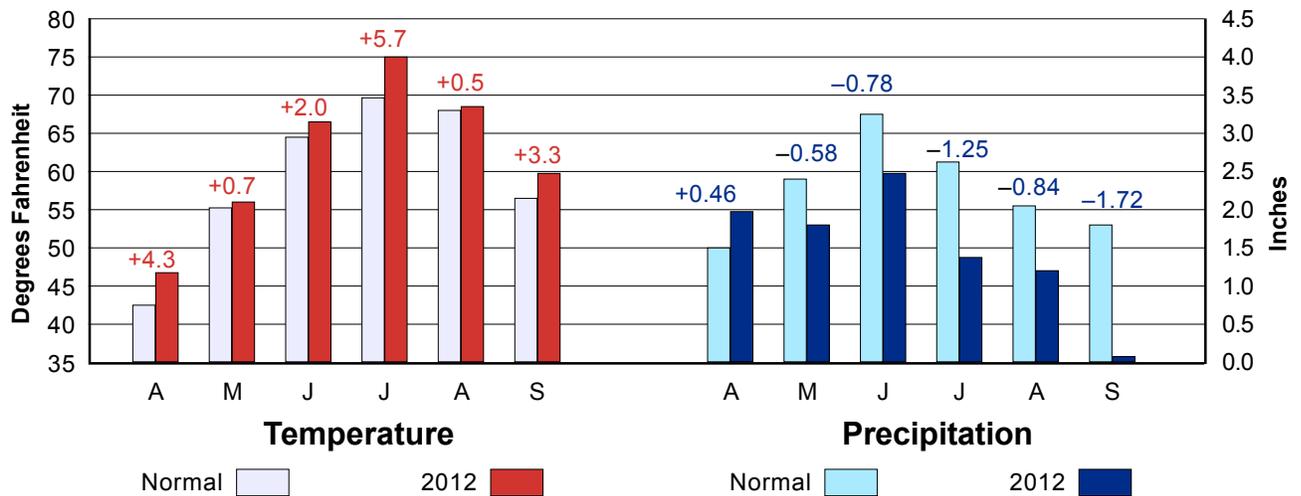


Figure 1. Composite mean monthly air temperatures and precipitation amounts in 2012 and normal (1971–2000) years for key locations (Fargo, Mandan, Minot, and Dickinson) scattered across the state. The growing season was warmer and drier than normal. Source: North Dakota Agriculture Weather Network.

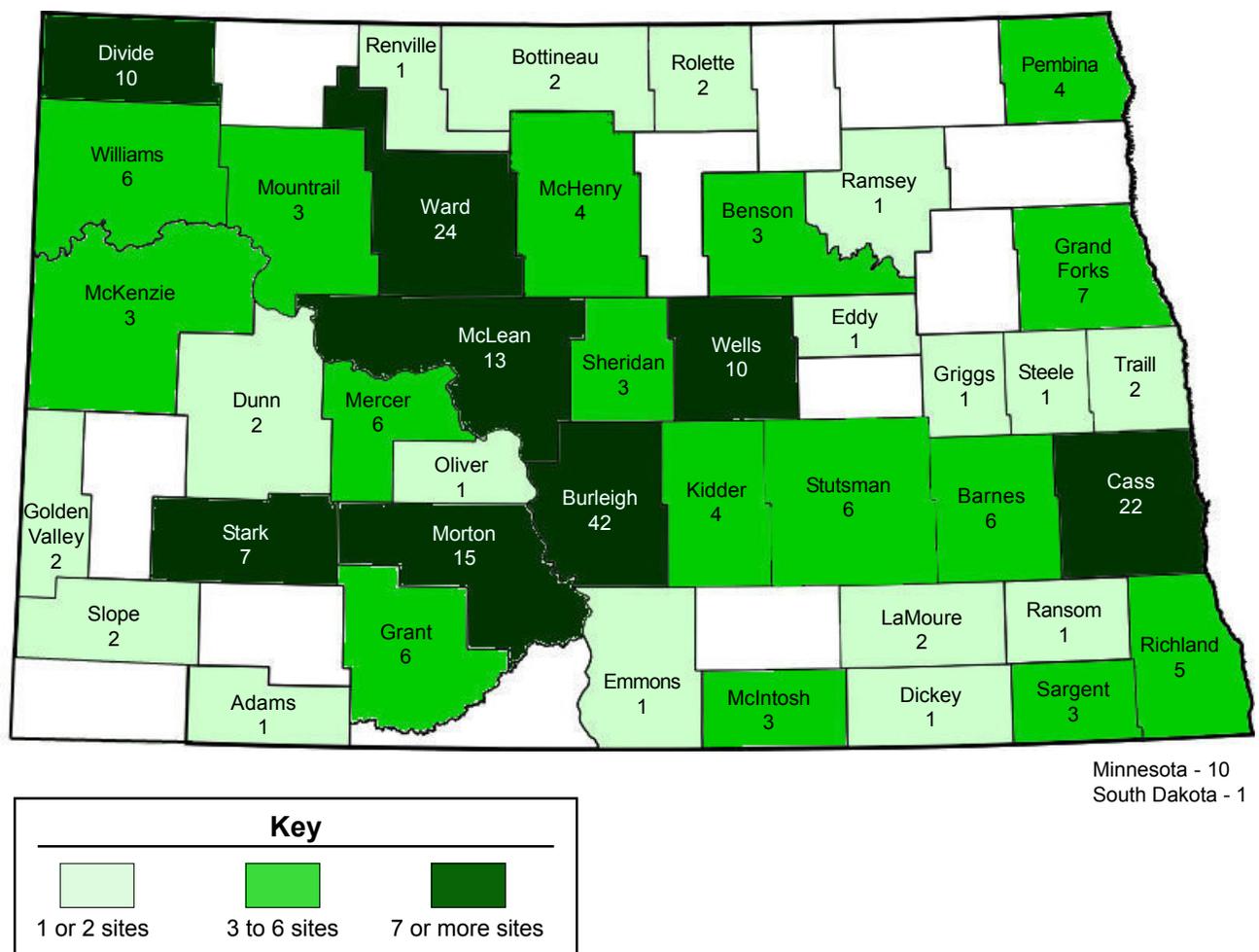


Figure 2. Households reporting variety trial results in 2012.

Chapter 2

Summary of Results

Gardeners in North Dakota and surrounding states participated in a series of 58 trials, each trial comparing two promising vegetable or flower varieties. Approximately 250 households rated the varieties for plant health, earliness, yield, and quality of harvested product. In each trial they noted which of the two varieties they preferred (Pref) and which of the varieties they would recommend (Rec) to other gardeners. They rated the performance of each variety using a scale of 1 to 10, with 1 = poor and 10 = excellent.

The growing season of 2012 was warmer and drier than normal. Many plantings got off to a quick start and rains were favorable in spring. The climate turned dry in summer and there was minimal precipitation from mid-August until a hard frost struck in late September, one week earlier than normal.

All data and comments of gardeners are available in the complete report at www.dakotagardener.com/trials/. The following is a summary of data, including our conclusions for each trial. Preferences and recommendations are listed as percentages of evaluators while ratings are listed as an average:

	<h3>1. Bean, Dry</h3>	<table><thead><tr><th>Variety</th><th>Pref (%)</th><th>Rec (%)</th><th>Rating (Avg.)</th></tr></thead><tbody><tr><td><i>Arikara Yellow</i></td><td>50</td><td>88</td><td>7.50</td></tr><tr><td><i>Great Northern</i></td><td>50</td><td>63</td><td>6.63</td></tr></tbody></table> <p>(9 sites)</p>	Variety	Pref (%)	Rec (%)	Rating (Avg.)	<i>Arikara Yellow</i>	50	88	7.50	<i>Great Northern</i>	50	63	6.63
Variety	Pref (%)	Rec (%)	Rating (Avg.)											
<i>Arikara Yellow</i>	50	88	7.50											
<i>Great Northern</i>	50	63	6.63											
	<h3>2. Bean, Green (Concentrated Harvest)</h3>	<table><thead><tr><th>Variety</th><th>Pref (%)</th><th>Rec (%)</th><th>Rating (Avg.)</th></tr></thead><tbody><tr><td><i>Pike</i></td><td>50</td><td>60</td><td>7.50</td></tr><tr><td><i>Provider</i></td><td>50</td><td>70</td><td>7.30</td></tr></tbody></table> <p>(10 sites)</p>	Variety	Pref (%)	Rec (%)	Rating (Avg.)	<i>Pike</i>	50	60	7.50	<i>Provider</i>	50	70	7.30
Variety	Pref (%)	Rec (%)	Rating (Avg.)											
<i>Pike</i>	50	60	7.50											
<i>Provider</i>	50	70	7.30											
	<h3>3. Bean, Green (Multiple Harvest)</h3>	<table><thead><tr><th>Variety</th><th>Pref (%)</th><th>Rec (%)</th><th>Rating (Avg.)</th></tr></thead><tbody><tr><td><i>B. B. Lake 274</i></td><td>51</td><td>68</td><td>7.61</td></tr><tr><td><i>Strike</i></td><td>49</td><td>63</td><td>7.47</td></tr></tbody></table> <p>(39 sites)</p>	Variety	Pref (%)	Rec (%)	Rating (Avg.)	<i>B. B. Lake 274</i>	51	68	7.61	<i>Strike</i>	49	63	7.47
Variety	Pref (%)	Rec (%)	Rating (Avg.)											
<i>B. B. Lake 274</i>	51	68	7.61											
<i>Strike</i>	49	63	7.47											
	<h3>4. Bean, Purple</h3>	<table><thead><tr><th>Variety</th><th>Pref (%)</th><th>Rec (%)</th><th>Rating (Avg.)</th></tr></thead><tbody><tr><td><i>Amethyst</i></td><td>44</td><td>74</td><td>7.42</td></tr><tr><td><i>Royal Burgundy</i></td><td>56</td><td>89</td><td>7.58</td></tr></tbody></table> <p>(19 sites)</p>	Variety	Pref (%)	Rec (%)	Rating (Avg.)	<i>Amethyst</i>	44	74	7.42	<i>Royal Burgundy</i>	56	89	7.58
Variety	Pref (%)	Rec (%)	Rating (Avg.)											
<i>Amethyst</i>	44	74	7.42											
<i>Royal Burgundy</i>	56	89	7.58											
	<h3>5. Bean, Yellow Filet</h3>	<table><thead><tr><th>Variety</th><th>Pref (%)</th><th>Rec (%)</th><th>Rating (Avg.)</th></tr></thead><tbody><tr><td><i>Goldito</i></td><td>25</td><td>63</td><td>5.75</td></tr><tr><td><i>Soleil</i></td><td>75</td><td>88</td><td>7.38</td></tr></tbody></table> <p>(9 sites)</p>	Variety	Pref (%)	Rec (%)	Rating (Avg.)	<i>Goldito</i>	25	63	5.75	<i>Soleil</i>	75	88	7.38
Variety	Pref (%)	Rec (%)	Rating (Avg.)											
<i>Goldito</i>	25	63	5.75											
<i>Soleil</i>	75	88	7.38											



6. Bean, Yardlong Pole

'Gita' was earlier and more productive while 'Orient Wonder' impressed gardeners with its lush vines. Pod size and flavor were comparable. Some first-time growers of yardlong bean marveled at its asparagus-like flavor; others disliked it.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Gita</i>	50	75	7.25
<i>Orient Wonder</i>	50	50	7.50
(10 sites)			



7. Beet

The roots of 'Detroit Supreme' were a rich red and stayed sweet even when large. 'Early Wonder' displayed strong early growth and tall tops, making it perfect for bunching. Its roots held their size in the field and were uniform.

Variety	Pref	Rec	Rating
<i>Detroit Supreme</i>	51	73	7.61
<i>Early Wonder</i>	49	70	7.60
(11 sites in 2011 and 20 sites in 2012)			



8. Carrot, Chantenay

'Hercules' plants were healthy and matured quickly. Its roots were deep orange, smooth and crisp. Its flavor was fresh and sweet. 'Hercules' yields were outstanding and its roots stored well. 'Royal Chantenay' was inferior in all respects.

Variety	Pref	Rec	Rating
<i>Hercules</i>	88	88	7.75
<i>Royal Chantenay</i>	12	56	5.69
(9 sites in 2011 and 8 sites in 2012)			



9. Carrot, Nantes

'Laguna' displayed superior emergence, superb vigor and higher yields. Its roots were less uniform than those of 'Nelson' but longer (up to 10 inches) and just as flavorful. 'Nelson' roots were straight, smooth, sweet and crisp.

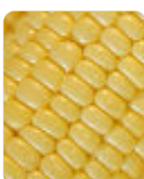
Variety	Pref	Rec	Rating
<i>Laguna</i>	53	72	7.35
<i>Nelson</i>	47	62	7.11
(49 sites)			



10. Corn, Bicolor

'Trinity' showed strong seedling vigor and it matured several days earlier. Its sweetness was splendid and especially valued as the first corn of the season. 'Mystique' produced superior yields. Its ears were larger but not quite as sweet.

Variety	Pref	Rec	Rating
<i>Mystique</i>	41	65	7.22
<i>Trinity</i>	59	69	7.41
(18 sites)			



11. Corn, Yellow

Gardeners struggled with spotty germination. 'Sugar Buns' showed more vigor and sturdier stalks. The appearance and flavor of its ears were slightly preferred. 'Spring Treat' was earlier for many gardeners. Yields were comparable.

Variety	Pref	Rec	Rating
<i>Spring Treat</i>	44	41	5.33
<i>Sugar Buns</i>	56	55	5.61
(15 sites in 2011 and 17 sites in 2012)			



12. Corn, Flint/Ornamental

There was very little interest in this trial. 'Bloody Butcher' impressed gardeners with its tall, 10-foot stalks. Wind and deer challenged gardeners. There were no comments on kernel color or quality.

Variety	Pref	Rec	Rating
<i>Bloody Butcher</i>	100	100	7.50
<i>Strubbes Orange</i>	0	50	5.50
(2 sites)			



13. Corn, Popcorn

'Red Beauty' stalks were more vigorous and productive. Its deep red (and a few yellow) ears were much larger and more attractive. Its popcorn tasted better. The tiny ears of 'Strawberry' were cute but inferior as popcorn.

Variety	Pref	Rec	Rating
<i>Red Beauty</i>	80	80	6.60
<i>Strawberry</i>	20	10	4.20
(10 sites)			



14. Cucumber, Pickling

'Homemade Pickles' vines were more vigorous and much more productive. Gardeners preferred the longer, narrower shape of its cukes for pickling. The cukes of 'Jackson Classic' grew faster and fatter on the vine.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Homemade P.</i>	63	88	7.35
<i>Jackson Classic</i>	37	47	6.45
			(33 sites)



15. Cucumber, Slicing Burpless

'Sweeter Yet' was earlier and more productive. Its cukes were long, smooth and thin without large seeds. Most gardeners preferred its taste. 'Tanja' cukes were larger, longer and wider—more like a traditional slicer.

Variety	Pref	Rec	Rating
<i>Sweeter Yet</i>	63	84	7.86
<i>Tanja</i>	37	42	6.64
			(33 sites)



16. Cucumber, Slicing Classic

'Straight Eight' produced earlier and produced more. Its cukes were uniform in shape and well suited to both slicing and pickling. Its vines were just as healthy as those of 'Marketmore 76' and the flavor of its cukes was comparable.

Variety	Pref	Rec	Rating
<i>Marketmore 76</i>	25	53	6.31
<i>Straight Eight</i>	75	83	7.77
			(9 sites in 2011 and 11 sites in 2012)



17. Cucumber, Slicing Hybrid

'General Lee' produced higher yields and these yields were surprisingly early. The quality of its cukes was as good, if not better than that of 'Raider'. 'Raider' was healthy and productive—but showed no advantages over 'General Lee'.

Variety	Pref	Rec	Rating
<i>General Lee</i>	67	78	7.89
<i>Raider</i>	33	67	6.89
			(10 sites)



18. Greens, Chinese Cabbage

Both varieties produced good yields of light green, mild tasting leaves. 'Fun Jen' was preferred by a slight margin; gardeners liked its flavor and frilly leaves. The productivity of 'Tokyo Bekana' was noted. Flea beetles were a problem.

Variety	Pref	Rec	Rating
<i>Fun Jen</i>	60	80	7.40
<i>Tokyo Bekana</i>	40	80	7.00
			(6 sites)



19. Greens, Mizuna

'Early' grew vigorously all summer—cutting after cutting—and had a fresh, mild flavor. 'Ruby Streaks' went to seed in midsummer and had a more pungent flavor. Its red veins contrasted nicely with other greens in salads.

Variety	Pref	Rec	Rating
<i>Early</i>	57	86	8.57
<i>Ruby Streaks</i>	43	29	6.29
			(7 sites)



20. Kohlrabi

'Winner' showed superior seedling vigor and matured earlier. Its bulbs were uniform and had a mild, refreshing taste. Some gardeners preferred 'Grand Duke' for its stronger flavor. Yields were comparable.

Variety	Pref	Rec	Rating
<i>Grand Duke</i>	23	57	6.71
<i>Winner</i>	77	64	7.50
			(15 sites)



21. Lettuce, Bibb

'Buttercrunch' was preferred for its dark green leaves, mild and bitter-free flavor, and superior yields. Both it and 'Winter Density' resisted bolting and produced lettuce through spring and much of summer.

Variety	Pref	Rec	Rating
<i>Buttercrunch</i>	75	86	8.07
<i>Winter Density</i>	25	64	7.00
			(29 sites)



22. Lettuce, Leaf

Both of these heat-resistant varieties produced good yields of deep green leaves throughout the spring and summer. Most gardeners liked both varieties but preferred the taste of ‘Tropicana’, giving it a slight edge overall.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Tropicana</i>	57	86	7.72
<i>Two Star</i>	43	72	6.86
(3 sites in 2011 and 4 sites in 2012)			



23. Lettuce, Romaine

Both varieties were healthy, productive and delicious. Many gardeners rated the varieties as similar for health, earliness and yield. Most preferred ‘Green Forest’ for its deep green and tender leaves, mild flavor and superb yields.

Variety	Pref	Rec	Rating
<i>Coastal Star</i>	35	65	6.88
<i>Green Forest</i>	65	81	7.42
(30 sites)			



24. Melon, Cantaloupe Early

Most gardeners did not recommend either variety. ‘Goddess’ got a slight edge in earliness and yield. Its finely netted melons were more attractive and less subject to splitting. The flavors of it and ‘Halona’ were good but not exceptional.

Variety	Pref	Rec	Rating
<i>Goddess</i>	50	48	6.11
<i>Halona</i>	50	46	6.18
(16 sites in 2011 and 25 sites in 2012)			



25. Melon, Cantaloupe Main Season

Most gardeners preferred ‘Sarah’s Choice’. It ripened earlier and several gardeners preferred its taste. ‘Hannah’s Choice’ was more productive. Gardeners were impressed with the flavor of both varieties and rated them highly.

Variety	Pref	Rec	Rating
<i>Hannah’s Choice</i>	43	71	7.71
<i>Sarah’s Choice</i>	57	86	8.14
(8 sites)			



26. Melon, Galia

‘Arava’ produced higher yields than ‘Diplomat’ and matched it for earliness. Its melons, lightly netted and 3 pounds in weight, were more attractive and sweeter. Ninety-one percent of gardeners recommended ‘Arava’—remarkable.

Variety	Pref	Rec	Rating
<i>Arava</i>	64	91	7.64
<i>Diplomat</i>	36	45	6.18
(11 sites)			



27. Melon, Green Flesh

Neither variety did well. Fruits were small (1 pound) and rarely matured before frost. ‘Jenny Lind’ was preferred due to its higher yields and better taste, but the vast majority of gardeners would not recommend it or ‘Eden’s Gem’.

Variety	Pref	Rec	Rating
<i>Eden’s Gem</i>	39	30	5.09
<i>Jenny Lind</i>	61	20	5.89
(9 sites in 2011 and 2 sites in 2012)			



28. Okra, Green

Few gardeners were interested in this trial. ‘Clemson Spineless’, the leading variety in the USA, was preferred due to its more slender pods. Its earliness, yield and taste qualities were comparable with those of ‘Star of David’.

Variety	Pref	Rec	Rating
<i>Clemson Spinel.</i>	80	60	5.60
<i>Star of David</i>	20	20	5.60
(2 sites in 2011 and 3 sites in 2012)			



29. Okra, Red

Both varieties performed well. Gardeners enjoyed the beauty of ‘Carmine Splendor’ blossoms; its pods were milder in flavor. The plants of ‘Red Burgundy’ were more vigorous, healthier and produced an earlier crop of pods.

Variety	Pref	Rec	Rating
<i>Carmine Splendor</i>	50	75	7.63
<i>Red Burgundy</i>	50	75	7.00
(9 sites)			



30. Pea, Shelling

'Lincoln' matured earlier and produced superb crops of attractive pods, even when the weather was unusually warm. 'Green Arrow' had larger pods with more peas per pod, but many gardeners felt 'Lincoln' peas were more delicious.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Green Arrow</i>	42	64	7.06
<i>Lincoln</i>	58	79	7.68
(26 sites in 2011 and 29 sites in 2012)			



31. Pea, Snap

'Sugar Ann' showed more vigor and produced its first pods a week earlier. Its vines kept producing despite the warm temps, leading to higher yields. Its pods were just as, if not more beautiful and delicious as those of 'Sugar Sprint'.

Variety	Pref	Rec	Rating
<i>Sugar Ann</i>	69	80	7.45
<i>Sugar Sprint</i>	31	30	5.79
(30 sites)			



32. Pea, Snow

'Oregon Sugar Pod 2' pods were more delicious and stayed slim for a long time in the garden. Its vines were more productive. 'Dwarf Grey Sugar' matured earlier; its purple blossoms produced small but uniform and attractive pods.

Variety	Pref	Rec	Rating
<i>Dwarf Grey Sugar</i>	40	44	6.64
<i>Oregon S. Pod 2</i>	60	56	7.00
(16 sites)			



33. Pumpkin, Jack-O'-Lantern

'Racer Plus' was earlier and more productive. Its pumpkins were more uniform and rounder. The pumpkins of 'Magic Lantern' were bigger (about 14 pounds versus 10 pounds for 'Racer Plus'), darker orange and more upright in shape.

Variety	Pref	Rec	Rating
<i>Magic Lantern</i>	48	63	6.47
<i>Racer Plus</i>	52	66	6.53
(23 sites in 2011 and 22 sites in 2012)			



34. Radish, Red

'Rover' matured earlier and had higher yields. Its roots were brighter red, more uniform and usually larger. Gardeners preferred the crisp taste of its pure white flesh, too. 'Cherry Belle' was good—but 'Rover' was just a little bit better.

Variety	Pref	Rec	Rating
<i>Cherry Belle</i>	36	57	6.17
<i>Rover</i>	64	57	7.21
(4 sites in 2011 and 10 sites in 2012)			



35. Rutabaga

Both varieties suffered severe damage from flea beetles and a wide array of other insect pests. 'American Purple Top' was preferred for the milder yellow flesh of its roots. Yields were comparable with those of 'Laurentian'.

Variety	Pref	Rec	Rating
<i>Amer. Purp. Top</i>	57	56	6.00
<i>Laurentian</i>	43	33	5.22
(10 sites)			



36. Spinach, Savoy Leaf

Varieties were very similar. Both produced lots of delicious spinach and resisted bolting. Most gardeners preferred 'Donkey'. They liked its deep green color and rounded leaf shape. It matched, if not exceeded 'Tyee' in taste qualities.

Variety	Pref	Rec	Rating
<i>Donkey</i>	61	73	7.34
<i>Tyee</i>	39	67	6.88
(33 sites)			



37. Squash, Summer Scallop

'Sunburst' and 'Y-Star' were productive and their fruits were colorful. Gardeners liked both varieties, but most preferred 'Sunburst'. Its vines were especially healthy and the tender flesh of its fruits cooked faster and worked better in recipes.

Variety	Pref	Rec	Rating
<i>Sunburst</i>	75	100	8.00
<i>Y-Star</i>	25	75	7.75
(4 sites)			



38. Squash, Summer Zucchini

The vines of 'Spineless Beauty' produced earlier and produced more zucchini. Its medium green, lightly speckled fruits were attractive and tender. 'Spineless Perfection' matched it for taste but showed no superior qualities.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Sp. Beauty</i>	72	94	7.83
<i>Sp. Perfection</i>	28	61	6.89
(18 sites)			



39. Watermelon, Red

'Sweet Dakota Rose' melons were more than twice as big (15 pounds). Its flesh was sweet and more flavorful. More gardeners recommended 'Blacktail Mountain'; it was earlier and more reliable. Neither variety was very productive.

Variety	Pref	Rec	Rating
<i>Blacktail Mtn.</i>	45	63	6.45
<i>Swt. Dak. Rose</i>	55	54	5.86
(30 sites)			



40. Watermelon, Red Large

'Legacy' produced decent crops of large (20 pound), well-shaped, brightly striped melons. Its flesh was sweet and juicy. The dark green rind and extra large size of 'Verona' were appealing, but most melons did not ripen before frost.

Variety	Pref	Rec	Rating
<i>Legacy</i>	69	77	6.93
<i>Verona</i>	31	40	4.66
(6 sites in 2011 and 13 sites in 2012)			



41. Watermelon, Yellow

'Early Moonbeam' matured earlier and produced more melons. 'Sweet Siberian' melons were almost twice as big (10 pounds) and gardeners enjoyed its apricot-color flesh. Gardeners liked both varieties but neither was exceptional.

Variety	Pref	Rec	Rating
<i>Early Moonbeam</i>	56	80	6.22
<i>Sweet Siberian</i>	44	80	6.33
(12 sites)			



42. Basil, Italian

'Italian Large Leaf' showed strong vigor, leading to the growth of taller, fuller plants. It matured earlier. Gardeners liked its mild flavor as much as the classic clove-like flavor of 'Genovese'. 'Genovese' was tender; well suited for cooking.

Variety	Pref	Rec	Rating
<i>Genovese</i>	44	72	6.59
<i>Italian Large Leaf</i>	56	72	7.29
(19 sites)			



43. Basil, Lemon

Both varieties were very healthy and produced lots of leaves with intense lemon flavor. They rated similarly for most traits including yield and flavor. The bright green leaves of 'Mrs. Burns' made it an attractive plant.

Variety	Pref	Rec	Rating
<i>Mrs. Burns</i>	40	80	8.33
<i>Sweet Dani</i>	60	80	8.22
(10 sites)			



44. Basil, Purple

The varieties were comparable for most traits, including earliness, yield and taste. A slight edge went to 'Amethyst Improved' for its superior vigor at many gardens. Both varieties suffered from weak seedling growth at some sites.

Variety	Pref	Rec	Rating
<i>Amethyst Impr.</i>	67	67	6.56
<i>Red Rubin</i>	33	44	6.33
(9 sites)			



45. Cilantro

Varieties performed similarly for all traits, including health, yield and taste qualities. 'Caribe' impressed gardeners with its robust plants and fragrant, flavorful leaves. 'Santo' grew quickly and gardeners enjoyed its flavor.

Variety	Pref	Rec	Rating
<i>Caribe</i>	60	88	8.07
<i>Santo</i>	40	75	7.53
(16 sites)			



46. Dill

'Bouquet' was impressive from germination through harvest. Its plants grew vigorously and matured earlier. Both it and 'Dukat' produced good yields of umbels and leaves. Gardeners liked the looks and flavors of both varieties.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Bouquet</i>	73	92	8.18
<i>Dukat</i>	27	58	7.27
(13 sites)			



47. Parsley

'Giant of Italy' rated higher in all traits—except taste. The flat-leaf plants were sturdier, fuller and more productive. Many gardeners recommended the curled-leaf 'Forest Green' for its flavor.

Variety	Pref	Rec	Rating
<i>Forest Green</i>	45	80	7.40
<i>Giant of Italy</i>	55	80	7.80
(11 sites)			



48. Cosmos, Mixed

'Double Click' bloomed earlier and produced more flowers. Most gardeners preferred it, yet still were hoping for more flowers. The plants of 'Sensation' were tall and vigorous but did not bloom at many sites.

Variety	Pref	Rec	Rating
<i>Double Click</i>	69	50	5.22
<i>Sensation</i>	31	38	3.94
(22 sites)			



49. Cosmos, White

'Sonata White' bloomed earlier and produced more flowers. Every gardener in the trial recommended it. 'Sensation Purity' grew more vigorously but was very slow to bloom in many gardens.

Variety	Pref	Rec	Rating
<i>Sensation Purity</i>	25	60	6.60
<i>Sonata White</i>	75	100	7.80
(6 sites)			



50. Cosmos, Sulphur

'Bright Lights' was very impressive. Its plants were healthy and loaded with flowers. It bloomed earlier and more profusely. 'Polidor' also grew well and was well liked, but its performance was overshadowed by 'Bright Lights'.

Variety	Pref	Rec	Rating
<i>Bright Lights</i>	71	88	8.88
<i>Polidor</i>	29	75	8.38
(9 sites)			



51. Sunflower, Orange Cutting

'Pro Cut Orange' was preferred by most gardeners. Its plants grew vigorously and bloomed earlier. 'Zohar' also grew well. Both of these pollenless varieties are well suited to cut flower production in North Dakota.

Variety	Pref	Rec	Rating
<i>Pro Cut Orange</i>	75	82	7.74
<i>Zohar</i>	25	75	6.99
(3 sites in 2011 and 14 sites in 2012)			



52. Sweet Pea

'Mammoth Choice' bloomed earlier. Its colors were vibrant and its stems were longer. The exceptional fragrance, array of colors and long blooming season of 'Royal' generated enthusiasm.

Variety	Pref	Rec	Rating
<i>Mammoth Choice</i>	57	42	5.83
<i>Royal</i>	43	55	5.91
(18 sites in 2011 and 26 sites in 2012)			



53. Zinnia, Cactus

Gardeners enjoyed both varieties and gave them high ratings. Many rated 'Burpeeanna Giants' and 'Giant Cactus' as similar for all traits. Neither variety distinguished itself from the other. Their flowers were big and showy.

Variety	Pref	Rec	Rating
<i>Burpeeanna G.</i>	50	86	7.78
<i>Giant Cactus</i>	50	86	7.45
(11 sites in 2011 and 11 sites in 2012)			



54. Zinnia, Cutting

The sturdy plants of both varieties produced lots of showy, 2-inch blooms for cutting. The varieties rated similarly for all traits. Most gardeners preferred ‘Cut & Come Again’ for its lovely colors and its superior performance in dry 2012.

Variety	Pref (%)	Rec (%)	Rating (Avg.)
<i>Cut & Come Ag.</i>	79	89	8.15
<i>Oklahoma</i>	21	81	7.56
(11 sites in 2011 and 15 sites in 2012)			



55. Zinnia, Classic

Both varieties were prolific producers of giant, gorgeous flowers. Varieties performed similarly, but a slight edge went to ‘State Fair’ for its notable health and production of flowers. Several gardeners felt ‘State Fair’ flowers were more vibrant.

Variety	Pref	Rec	Rating
<i>Giant Dahlia Mix</i>	36	91	7.91
<i>State Fair</i>	64	100	8.45
(12 sites)			



56. Zinnia, Giant Lime

The lime green flowers were striking and complimented other flowers in arrangements. They were long lasting as cut flowers. These varieties were very similar; a slight edge went to ‘Queen Lime’ for the fullness of its plants.

Variety	Pref	Rec	Rating
<i>Benary’s G. Lime</i>	46	79	7.27
<i>Queen Lime</i>	54	82	7.46
(13 sites in 2011 and 22 sites in 2012)			



57. Zinnia, Giant Orange

‘Benary’s Giant Orange’ put on a dazzling display of big, bright blooms. The flowers were showy and long lasting in bouquets. ‘Inca’, a cactus type of zinnia, was eye-catching but less impressive overall.

Variety	Pref	Rec	Rating
<i>Benary’s G. Or.</i>	89	91	8.55
<i>Inca</i>	11	73	7.00
(11 sites)			



58. Zinnia, Giant Scarlet

‘Giant Dahlia Scarlet’ blooms were bright red, big and bold. ‘Scarlet Flame’ showed strong seedling vigor and bloomed earlier. Its flowers were a deeper shade of red. Both varieties were attractive in the garden and as a cut flower.

Variety	Pref	Rec	Rating
<i>Giant Dahlia Sc.</i>	72	84	7.79
<i>Scarlet Flame</i>	28	84	7.53
(21 sites)			

Chapter 3

Trial Reports

Trial 1. Bean, Dry

Varieties (information from seed catalogs)

‘Arikara Yellow’

85 days. Prolific plants produce tan seeds. Good drought tolerance. From the Arikara tribe of ND.

‘Great Northern’

85 days. Flavorful, large, white seeds. Bush plants produce good yields. Very popular in the north. Originated from the Oscar H. Will Co. of Bismarck, ND.

Data

Data were collected at 9 sites in 2012.

Trait	‘Arikara Yellow’	‘Great Northern’	Same
Germinated best	11 %	33 %	56 %
Healthier plants	38	13	50
Matured earlier	50	38	13
Higher yields	25	63	13
More attractive seeds	63	25	13
Tasted better	38	25	38
<i>Preference</i>	50	50	
<i>Recommend to others</i>	88	63	
<i>Overall rating¹</i>	7.50	6.63	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- I like the versatility of growing dry beans in the garden. You can have fresh beans when they’re young and if you don’t have time or the space for freezing or canning you can just let them grow and harvest when they’re dry. However, they’re not the most economical produce in the garden if you’re just growing them for the dried bean. In my 10-foot rows, I got ‘Great Northern’ beans to make 1 pot of bean soup (same with ‘Arikara Yellow’). Dried beans are also very time consuming to shell. You have to have a pioneering spirit to enjoy this process.



- Both had very healthy plants. Both matured at the same time.
- I probably will not be growing dry beans on a regular basis. It’s a lot of work to raise for not very high yields. Our family will get just four meals out of what we grew; and that’s because I’ve stretched it to make that many.
- Both varieties had near 100% germination. Their vines could use staking. Both tasted good when harvested young, as green beans.
- I can’t really evaluate these other than to say that cutworms loved the ‘Great Northern’, mowing the entire row. Grasshoppers were quite enamored with the remaining ‘Arikara Yellow’, leaving me approximate three plants to bear.
- Both did well. Tasted the same.

Comments on ‘Arikara Yellow’ Bean

- We liked the look of the yellow beans. They were very yummy! Very flavorful! It was meatier and did not fall apart in your mouth like the ‘Great Northern’. Our family was excited to grow these beans, a variety native to North Dakota.
- I harvested these on August 25, 5 days before the ‘Great Northern’. Some pods were empty. Its dry beans were nicely shaped and looked a bit like yellow black-eyed peas.

More Comments on 'Arikara Yellow' Bean

- Plants were way bigger. Seeds were more uniform and more interesting in appearance. They don't take as long to soak. Their taste had more flavor, more meat—beanier.
- More upright plants. The beans have a nice uniform color and size.
- Plants were taller and remained green longer. 'Great Northern' produced 1.6 pounds.; 'Arikara Yellow' produced nearly twice as much. Its seeds are more attractive. Although they mature later, they more than made up for it with high yields and great flavor.
- More resistant to frost.

Comments on 'Great Northern' Bean

- Larger bean pods and a higher average of dry beans in each pod. Each pod has 4–5 beans, compared to 3–4 for 'Arikara Yellow'. Total yield was 2.5 cups compared to 2.0 cups for 'Arikara Yellow'. Beans were nice and white.
- Produced 1 pound more beans.
- Better germination. Produced 33% more beans.
- Better taste. Better looking beans.

Conclusions

These North Dakota varieties grew well. The white-seeded 'Great Northern' was more productive while the yellow seeds of 'Arikara Yellow' were more attractive. Growing dry beans was not an efficient use of space for many gardeners.

Trial 2. Bean, Green (Concentrated Harvest)

Varieties (information from seed catalogs)

'Pike'

55 days. Consistent performer in the north. Medium-dark green pods are thin, straight and smooth. Holds well in the garden at maturity.

'Provider'

51 days. Very dependable and productive. Concentrated, early harvests of attractive, straight beans. Easy to grow. Purple seeds germinate well in cool soil.



Data

Data were collected at 10 sites in 2012.

Trait	'Pike'	'Provider'	Same
Germinated best	11 %	44 %	44 %
Healthier plants	22	67	11
Matured earlier	11	89	0
Higher yields	22	56	22
More attractive pods	50	50	0
Tasted better	40	50	10
<i>Preference</i>	50	50	
<i>Recommend to others</i>	60	70	
<i>Overall rating¹</i>	7.50	7.30	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- No disease in the plants of either variety.

Comments on 'Pike' Bean

- Plants were greener. I loved this variety for its young, tender, slender pods. I would love to be able to purchase this variety in 2013.
- Pods were more attractive: slender and darker green. More tender and tasty. Held better at maturity in the garden.
- Loved these pods; they didn't get fat and beany—stayed slim and good. Tasted wonderful.
- Dark green and straight pods.
- Came up first and the row was fuller.
- Much better yield.
- Had hard seeds inside and the dark green pods were spongy feeling. Only one good picking.
- Plants grew to only 4 inches tall and produced very few beans.

- Poor germination. Plants broke off all the time. Pods stayed thin and didn't get fat and rubbery when they weren't picked. Pods were darker, smooth and shiny. Good flavor but lacked the "pop" that 'Provider' has. They were squeaky when you chew them.

Comments on 'Provider' Bean

- Good; more like a traditional green bean.
- Pods were fuzzy and more plump. Looked more traditional. Snap nicely when cooked and have a very beany taste.
- Plants were heartier. Produced sweeter, bigger beans.
- Higher yields and easy to pick. Tasted better.
- Had to be harvested immediately at maturity or they become overripe.
- They matured "overnight" in the 90° heat!
- It way outperformed 'Pike'.

Conclusions

'Provider' was more vigorous, earlier to bear and more productive. Gardeners enjoyed the flavor and looks of its traditional pods. Half of gardeners raved over the thin, smooth pods of 'Pike' and enthusiastically preferred it.

Trial 3. Bean, Green (Multiple Harvest)

Varieties (information from seed catalogs)

'Bush Blue Lake 274'

60 days. The standard for yield and quality. Dark green, fiber-free, stringless pods. Dependable. White seeds.

'Strike'

54 days. High yields of easy-to-pick beans. Sets early and continuously through the summer. Straight, green, 5-inch pods. White seeds.



Data

Data were collected at 39 sites in 2012.

Trait	'B. Blue Lake 274'	'Strike'	Same
Germinated best	26 %	38 %	36 %
Healthier plants	31	13	56
Matured earlier	32	57	11
Higher yields	35	43	22
More attractive pods	32	27	41
Tasted better	25	28	47
<i>Preference</i>	51	49	
<i>Recommend to others</i>	68	63	
<i>Overall rating¹</i>	7.61	7.47	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both produced a ton of beans for us and performed well.
- Large, fast growing plants. Very sturdy. Pods were smooth and straight. Tasted great. Good for both canning and freezing.
- Plants of both varieties had large leaves with nice dark green color. Three harvests from both varieties. Pods were tender.
- Both varieties produced right up to the frost.
- Plants looked wonderful. Yields really took off. Pods were really flavorful.
- Plants were sturdy. Both varieties were great producers.
- Both varieties had nice, long, full, attractive pods. Both had very good taste.
- Both varieties germinated within a week. Both had healthy plants. Yielded at about the same time. Similar taste.
- Both germinated well. Yields were comparable and the pods tasted good.

- Liked the taste of both.
- Tasted the same.
- It was a great season for these green beans. Harvested both varieties twice. Very healthy plants. They tasted the same. I love green beans.
- Planted on May 9. Excellent germination, but both froze on May 31.
- Both succumbed to drought conditions during second week of August.
- Overall, we were disappointed in both. Neither produced much.

Comments on 'Bush Blue Lake 274' Bean

- Germinated better. Its seedlings withstood the late freeze in spring much better. Bigger and healthier plants—very plush! More plants led to higher yields.
- Germinated first and plants were healthier.
- Germinated a week earlier. Pods were larger, better tasting, and froze well for storage.
- Emerged first; healthier plants; first yield.
- Had a more uniform pod and was deep green when steamed. The color and texture when steamed are far superior. More bean flavor.
- Matured one week earlier. 'Bush Blue Lake 274' never fails—good fruit, large size—straight bean. Easy to pick, cut and process.
- Earlier yield and healthier plants.
- More bean flavor.
- Nicer beans and earlier.
- Sweeter taste; longer season.
- Beans were darker green when cooked. The pods were crispier and less stringy.
- Bigger and fuller pods.
- Longer pods, better taste.

More Comments on 'Bush Blue Lake 274' Bean

- Produced a lot longer. Bigger plants and nice pods.
- Better yields. Longer pods.
- Plants were slightly more vigorous.
- Pods were longer and greener in color.
- Its pods got overgrown a little quicker.
- Plants looked terrible. Succumbed to heat.
- Beans are too seedy.

Comments on 'Strike' Bean

- Germinated earlier and at a better rate. Produced earlier. Nice looking, rounded pods. Absolutely delicious! Very tender with an almost sweet, nutty flavor. Had many positive comments about these from anyone who tasted them. These also canned well. These beans were winners! Can't wait to plant these again.
- Faster germination, earlier maturing, and its yields were consistently higher (albeit slightly) through the season.
- Seedlings emerged in 7 days, 3 days earlier than those of 'Bush Blue Lake 274'. Better germination, too. Pods were longer and more tender.
- A better stand of plants. Earlier and higher yields.
- Matured earlier, but quit producing beans earlier. Slightly milder taste.
- Matured 7–10 days earlier.
- Matured earlier and produced later into the season. Higher yields.
- Yield was slightly earlier. I liked its pods better as they were straighter and slimmer and better for stir fries.
- The better variety. Earlier and tasted better.
- More plants, although they were spindlier. Produced one to two weeks earlier. Produced longer in the season. I have planted 'Bush Blue Lake 274' previously and it was not as productive as 'Strike'. Nice bean and taste.
- Germinated quicker. Matured 5 days earlier. Much greater yield. Good taste. Will plant again.
- It tasted better (both raw and cooked), produced higher yields, and had nice, even, slender pods.
- Produced first and had the best yield. Its beans stayed smaller in the pod if not picked as frequently. Pods were more tender.
- I like that 'Strike' produced about 7 days sooner so not all the varieties in this trial were bearing a heavy load at the same time.

- Much more productive—over 50% more. Pods were straight and smooth with very little blemishes. Longer production period.
- Slow to produce pods but caught up later in the growing season.
- Lighter green and softer pods when steamed.
- Plants produced longer.
- Germinated within just a few days; higher rate of germination, too. Much higher yields. Pods seemed to be more tender.
- Did poorly but better than 'Bush Blue Lake 274', which did nothing.

Conclusions

Gardeners enjoyed 'Bush Blue Lake 274', a popular producer of deep green, crisp pods. 'Strike' showed superior seedling vigor, earlier yields, and matched, if not exceeded 'Bush Blue Lake 274' for yield and taste qualities.

Trial 4. Bean, Purple

Varieties (information from seed catalogs)

'Amethyst'

56 days. Pods are especially thin, straight, and of high quality. Dark purple pods turn green when cooked. Tan-colored seeds.

'Royal Burgundy'

52 days. Pods are 5 inches long, stringless, and tender. Upright, hardy plants. Dark purple pods turn green when cooked. Tan-colored seeds.



Data

Data were collected at 19 sites in 2012.

Trait	'Amethyst'	'Royal Burgundy'	Same
Germinated best	16 %	37 %	47 %
Healthier plants	26	37	37
Matured earlier	22	50	28
Higher yields	39	39	22
More attractive pods	39	28	33
Tasted better	28	33	39
<i>Preference</i>	44	56	
<i>Recommend to others</i>	74	89	
<i>Overall rating¹</i>	7.42	7.58	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Growing purple beans in the garden is always a fun experience with kids. Kids will pick the purple beans first, and eat them fresh. They enjoy watching them turn green while cooking. It's a great way to get kids to eat more veggies.
- I have successfully canned, froze and pickled both beans.
- They both produced a bumper crop—like bucketfuls. We loved how the purple flesh changed to bright green when cooked. Fun to watch.
- We were pleased with both. They just wouldn't stop producing and the flavor was great.
- I don't think there were any measurable differences between the two. We've had delicious beans from both varieties since late June.
- Plants were healthy.
- Both are awesome!
- Rabbits kept eating the plants—but both recovered.

Comments on 'Amethyst' Bean

- Once the plants started producing, they did quite well, but since they started so late their harvest season was quite short. The prettier appearance and superior taste of the pods makes this variety our favorite.
- Very flavorful. Better productivity.
- Germinated first and the plants were healthier. Always produced twice as many beans. Kids thought it tasted better but the family can't tell the difference among the varieties when their beans are mixed.
- Produced a little later. Plants were taller with smaller leaves. The pods were sweeter. More yield.
- The pods looked nicer but didn't taste better.
- Bloomed and produced longer; although later to start.
- Plants grew larger and lasted longer (until frost).
- Many of its leaves withered.
- Pods were tougher and developed brown spots.
- The plants looked diseased. Virtually no production.

Comments on 'Royal Burgundy' Bean

- Plants thrived. Easier to pick. More meat to them and had a more distinct flavor. As we ate them in the garden we found ourselves going back to the 'Royal Burgundy' more often.
- A little more tender.
- Grew really fast, so we picked them and got a second harvest off them.
- Plants looked healthier and produced longer.
- Plants were taller and had twice as many pods on. Easier to can.

More Comments on 'Royal Burgundy' Bean

- Earlier by a full 2 weeks.
- I've grown 'Royal Burgundy' before and it's done better in the past. Some of the pods were deformed and stunted.

Conclusions

Most gardeners preferred 'Royal Burgundy'. Its plants were healthier and produced earlier. The pods of 'Amethyst' were slimmer, straighter and more lustrous but not better tasting. Yields were comparable.

Trial 5. Bean, Yellow Filet

Varieties (information from seed catalogs)

'Goldito'

52 days. Smooth, slender, straight and stringless pods of highest quality. Easy to pick. White seeds.

'Soleil'

60 days. Slender, sunny yellow pods with exquisite flavor. Freezes well. White seeds.

Data

Data were collected at 9 sites in 2012.

Trait	'Goldito'	'Soleil'	Same
Germinated best	11 %	56 %	33 %
Healthier plants	0	29	71
Matured earlier	38	38	25
Higher yields	13	50	38
More attractive pods	13	38	50
Tasted better	0	38	63
<i>Preference</i>	25	75	
<i>Recommend to others</i>	63	88	
<i>Overall rating¹</i>	5.75	7.38	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Excellent germination. Abundant blossoms. They both produced so well. I couldn't keep up with them. We ate beans almost once a day at meals. Excellent flavor.
- Both germinated and grew well. They both tasted good.

Comment on 'Goldito' Bean

- Pods were larger and longer. Stronger plants.



Comments on 'Soleil' Bean

- I liked the pod shape and size, as well as bean size and color. I did find that pods broke easily when picking, but other attributes (healthier plants, earlier maturity, attractiveness of pods) made up for that negative.
- Plants hung on the longest through our drought conditions. Pods were smaller, but not lumpy. Straighter pods.
- Withstood the dry conditions better. Still producing well right up to frost. No large or tough pods at all.
- Emerged earlier. Its plants looked nicer.
- My son, who is a picky eater, ate it. My other two children preferred 'Soleil' too.
- A narrower, smaller pod. Plants were weaker and the pods fell to the ground.

Conclusions

The plants of 'Soleil' were healthier, more productive and more tolerant to drought. Its pods were slimmer and smaller; they did not get seedy. Gardeners liked the quality of 'Goldito' pods, but overall it was an inferior variety.

Trial 6. Bean, Yardlong Pole

Varieties (information from seed catalogs)

'Gita'

78 days. Dark green pods, thin as a pencil and up to 20 inches long. Fun for kids. Needs a tall trellis.

'Orient Wonder'

70 days. Bright green, slender pods. Tolerates cool weather. Needs a tall trellis. Brown-red seeds.

Data

Data were collected at 10 sites in 2012.

Trait	'Gita'	'Orient Wonder'	Same
Germinated best	30 %	20 %	50 %
Healthier plants	11	44	44
Matured earlier	63	25	13
Higher yields	50	13	38
More attractive pods	38	38	25
Tasted better	0	13	88
<i>Preference</i>	50	50	
<i>Recommend to others</i>	75	50	
<i>Overall rating¹</i>	7.25	7.50	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- I would not grow these beans again. Did not care for the taste. Nice for a conversation vegetable.
- Both were 10–14 days behind my regular pole beans. I think almost every seed germinated. Both caught me by surprise with their first yield. They were equal producers. Beautiful climbing plants. Loved them on the white trellis behind giant zinnias! I would only use these again as a visual background for my flowers, but not to eat.
- This was the first time these were grown and we're hooked.
- Both were very tasty. Enjoyed growing both. Got a nice crop and will grow them again. Also started some seeds in the greenhouse and planted in pots around the deck. These did well and got some early beans.
- Lovely, medium-height runners. Similar yields. Both had very long, slender pods although we didn't like the taste of either. We used these plants as a companion planting to shade our lettuces and cucumbers.



- Near 100% germination for both. Plants grew vigorously although there was some yellowing of leaves. The pods of these varieties had a similar taste and texture. I prefer the taste of bush beans, but my boyfriend much preferred these over bush beans when prepared as dilled beans. Both varieties pickled similarly.

Comments on 'Gita' Bean

- Although both varieties grew well, the more uniform and straight pods of 'Gita' were much more attractive and easier to process. Fun plant!
- Popped right up. Matured several days earlier. Pods were straighter.
- Produced earlier (started picking on July 25, 5 days before 'Orient Wonder') and produced 25% more. Plants were bigger.
- Consistent producer.
- Relatively low germination (50%) and seedlings got off to a slow start.

Comments on 'Orient Wonder' Bean

- Healthier plants and great taste. Pods had a brighter color.
- Healthy plants. Seemed to produce a bit better.
- Matured one week earlier.

Conclusions

'Gita' was earlier and more productive while 'Orient Wonder' impressed gardeners with its lush vines. Pod size and flavor were comparable. Some first-time growers of yardlong bean marveled at its asparagus-like flavor; others disliked it.

Trial 7. Beet

Varieties (information from seed catalogs)

'Detroit Supreme'

59 Days. A selection of America's most popular beet variety. Early, very dark red, and sweet. Thinned plants can be used as greens.

'Early Wonder'

60 days. Popular variety, especially for its greens. Its tops are tall, bright green with red veins. Its roots are deep red and well suited for bunching and canning.



Data

Data were collected at 11 sites in 2011 and 20 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Detroit Supreme'	'Early Wonder'	Same	'Detroit Supreme'	'Early Wonder'	Same	'Detroit Supreme'	'Early Wonder'	Same
Germinated best	36 %	27 %	36 %	35 %	35 %	30 %	35 %	32 %	32 %
Healthier plants	30	20	50	28	28	44	29	25	46
Matured earlier	20	30	50	12	41	47	15	37	48
Higher yields	30	30	40	18	35	47	22	33	45
More attractive roots	43	43	14	38	38	25	40	40	21
Tasted better	13	25	63	38	6	56	29	13	58
<i>Preference</i>	38	63		59	41		51	49	
<i>Recommend to others</i>	44	67		89	72		73	70	
<i>Overall rating¹</i>	7.00	7.40		7.94	7.71		7.61	7.60	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- None reported.

2012

- Both were very easy to grow. Healthy and productive plants. Both pickled well.
- Both germinated nearly 100%. Both did very well; too many beets to eat and take care of!
- Yields, taste, and appearance of roots are comparable.
- Satisfied with both. Tasted the same.
- Both were excellent.
- Neither produced very well. I think it got too hot.
- Neither showed great results in our drought conditions.

2011

- Germinated best. Produced higher yields and tasted better.
- Even, globe-shaped roots. Tasted nice and sweet. Won Honorable Mention and a blue ribbon at the Eddy County 4-H Achievement Days.
- Smoother skin and cleaned up easier for cooking. Deep red color, but bitter.
- Roots were little larger and led to a higher yield.

2012

- Germinated excellent. Very fast growing. Good tasting greens. Very good yields. Roots grew large, perfectly round, smooth, and stayed tender. Great tasting. Used in soups, buttered, steamed, and used cold in salads.
- Seedlings emerged first. Plants were stronger.
- Continued to grow and never got woody, even

Comments on 'Detroit Supreme' Beet

More Comments on 'Detroit Supreme' Beet

- though they were large beets.
- Roots were redder. I like the dark color.
- Tasted better though it took longer to mature.
- Tasted and looked better.
- Roots had a good, even shape but were not very big.
- Stayed sweeter, even when eaten on the larger size. Just cooked and buttered.
- Had an abundant beet crop—couldn't really tell any difference between the two.

Comments on 'Early Wonder' Beet

2011

- Higher yield.
- Better production.
- Plants were bigger, but roots were cone shaped.
- Lighter red roots but sweeter.
- Nicer looking roots.
- Wonderful taste!
- Overall better in all categories.

2012

- Beets were bigger and tastier. Better for canning pickled beets. Sweeter and easier to handle.
- Super throughout. Healthy plants.
- Had better tops for greens. I did not like the white rings in its roots.
- This row was more complete.
- About 10 days earlier. It is nice to have good early beets.
- Held its size a bit better, yielded slightly more, and had uniform-sized beets.
- Slightly smaller beets.
- Only one-third had more than greens at picking, but they were fine specimens.

Conclusions

The roots of 'Detroit Supreme' were a rich red and stayed sweet even when large. 'Early Wonder' displayed strong early growth and tall tops, making it perfect for bunching. Its roots held their size in the field and were uniform.

Trial 8. Carrot, Chantenay

Varieties (information from seed catalogs)

'Hercules'

65 days. Strong tops with cone-shaped roots. Stores well. Especially good in heavy or rocky soils, where other carrots struggle.

'Royal Chantenay'

70 days. Standard main crop variety especially suited for heavy soils. Roots have a broad, blocky shape. Good flavor and texture.



Data

Data were collected at 9 sites in 2011 and 8 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Hercules'	'Royal Chant.'	Same	'Hercules'	'Royal Chant.'	Same	'Hercules'	'Royal Chant.'	Same
Germinated best	22 %	22 %	56 %	50 %	0 %	50 %	35 %	12 %	53 %
Healthier plants	22	22	56	71	0	29	45	12	43
Matured earlier	29	0	71	43	14	43	36	7	58
Higher yields	44	11	44	71	29	0	57	19	23
More attractive roots	56	22	22	57	14	29	56	18	25
Tasted better raw	67	11	22	43	14	43	56	12	32
Tasted better cooked	17	17	67	60	20	20	37	18	45
<i>Preference</i>	89	11		86	14		88	12	
<i>Recommend to others</i>	89	67		86	43		88	56	
<i>Overall rating¹</i>	7.78	6.56		7.71	4.71		7.75	5.69	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Both varieties germinated surprisingly well.
- It was hard to tell the two varieties apart; they're about an equal match. You couldn't tell them apart unless you looked at the marker. Taste results came up hard to distinguish also. They were the largest carrots I've ever grown; I would gladly grow them again.
- Both tasted good when cooked.
- My husband and I disagreed on which variety tasted better.
- Everything grew way too big this year!

2012

- Had germination problems with all of my carrots. The ground got extremely dry and hard.
- Fair germination led to thin stands of each variety.
- Fair germination—very dry summer. Both were very tasty.
- Neither produced very well. I think it got too hot.
- Very poor germination for all of my carrots this year.

Comments on 'Hercules' Carrot

2011

- Roots were smoother, sweeter, firmer, and stored better.
- Tops were shorter and seemed to produce a longer well-shaped root.
- Grew better, tasted better, but roots were smaller.
- Roots had a nice uniform size. Great taste; kids loved them. Canned well. Taste is fresher; very crispy. Nice size roots.
- Superior flavor and a deeper orange color.
- Straighter; fewer splits—easier to peel!
- Better taste.

2012

- I like its straight, uniform shape.
- Much bigger, faster-growing crop. Would plant again!
- Better germination and growth. Nicer roots.
- More attractive and better tasting roots.
- Larger carrots; therefore, better yield.

Comments on 'Royal Chantenay' Carrot

2011

- Tall tops with short stubby roots.
- Higher yields (5 pounds versus 2.5 pounds) and better taste.
- Its roots had a hairier appearance when they got larger.
- Plants were more tolerant to weather.

2012

- Better germination, but not very good.
- Didn't grow many plants.
- Did not germinate well.

Conclusions

'Hercules' plants were healthy and matured quickly. Its roots were deep orange, smooth and crisp. Its flavor was fresh and sweet. 'Hercules' yields were outstanding and its roots stored well. 'Royal Chantenay' was inferior in all respects.

Trial 9. Carrot, Nantes

Varieties (information from seed catalogs)

'Laguna'

65 days. Bright orange, 6-inch roots with outstanding flavor. Uniform shape and superior quality.

'Nelson'

56 days. Sweet flavor and outstanding tolerance to heat. This hybrid's roots are deep orange, smooth, and 6 inches long with blunt tips. Medium tops.



Data

Data were collected at 49 sites in 2012.

Trait	'Laguna'	'Nelson'	Same
Germinated best	43 %	24 %	33 %
Healthier plants	23	9	68
Matured earlier	21	19	60
Higher yields	47	19	34
More attractive roots	37	41	22
Tasted better raw	33	33	35
Tasted better cooked	21	23	56
<i>Preference</i>	53	47	
<i>Recommend to others</i>	72	62	
<i>Overall rating¹</i>	7.35	7.11	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both germinated very well and had very healthy plants.
- Plants were healthy and yields were very good.
- Both grew well.
- Both were delicious.
- Not a lot of difference when cooked. I'd plant both again. One for soups ('Laguna') and one to eat plain ('Nelson').
- The rows of both varieties were complete.
- The roots of both varieties had blunt tips.
- Great seed. Great carrot year. They tasted different, but both were great. After the frost, both sweetened up.
- Both looked great. Good size roots, 6–7 inches. I love fresh carrots.
- Similar production. Neither variety developed any taste until the first frost hit them.

- My regular planting of 'Scarlet Nantes' was much better than either of these varieties.
- Replanted three times in two different locations—no luck.
- Neither produced well—poor germination.
- Crop failure. Very poor germination and those that grew did not perform well. Disappointed!

Comments on 'Laguna' Carrot

- Germinated better and grew a lot better. Roots had better shape. We left the carrots in the ground until November and they were sweet.
- Germinated about 30% better. Roots were nice, straight and slim; less prone to splitting. More carrot flavor.
- Roots were longer (10 inches compared to 5 inches for 'Nelson'). Had a good taste when eaten raw. When steamed, the taste was sweeter than 'Nelson' and most other carrots. My husband is not a carrot eater, but he loved 'Laguna'.
- Better germination and flavor.
- Roots split more and got fatter. Much less attractive.
- Faster germination and higher yield.
- Germinated later, but ultimately better. Beautiful 8-inch-long carrots by first week of August. So sweet! Good yield.
- Tasted a lot better.
- Roots were more distorted but a little sweeter.
- Better germination, matured earlier, and produced higher yields.
- Much better flavor. The roots were better formed; long and straight.
- Bigger roots but more defects. Not as pretty. My ground was extremely hard and dry.

More Comments on 'Laguna' Carrot

- Produced more carrots. Roots were fairly large and long with a nice color. It won our taste test (both raw and cooked). Mild, sweet flavor.
- Survived the cool, wet spring and very dry, late summer and fall. Roots were straight and smooth.
- Slightly sweeter.
- Bigger carrots. Yields were double that of 'Nelson' in pounds.
- Carrots were longer. I prefer its taste and length.
- Many of its carrots died after sprouting. The roots were softer textured—too soft after cooking.
- More carrots because of better germination. Slightly longer roots. Fresher taste.
- Longer, thicker carrots.
- Roots were bigger and more uniform in color.
- Better germination, although both varieties germinated pretty good. Early on, these carrots were "smoother" in taste. Milder.
- Yields were higher but roots were less uniform in shape.
- Produced sweet, straight, good-looking carrots.
- Nicer shape. Quicker growing.
- Better carrot looks and flavor.
- Better shape and healthier looking.

Comments on 'Nelson' Carrot

- Better germination (90% compared to 70% for 'Laguna'). Twice the yield. Roots had a better size and were sweeter.
- Germinated better. Produced more yields. Roots were slightly larger and had a crunchier texture.
- Nicer carrots. Better taste.
- Roots were straighter, longer and tasted sweeter. Better growth and yields.
- Better taste and nicer shape.
- Carrots were a little fatter.
- I like a longer, slimmer carrot and 'Nelson' was like that.
- Roots were more uniform.
- Nicer, straight carrots. I liked its taste better raw and it was just a tiny bit sweeter when cooked.
- Larger crop; large plants. Longer roots. Easier to eat.
- Roots were shorter and stubbier.
- Easier to prepare. Hope they stay longer during winter.
- Crisper.
- Crunchier and sweeter.

- I prefer its milder taste and the appearance of its carrots.
- Flat taste.
- A little sweeter.
- More uniform.
- Bigger.
- Roots were better formed.
- Much earlier. Very nice looking roots; very uniform.
- Sweeter taste. We just picked some on November 4 and they were great! We have them covered with straw!
- Had a few crooked roots.
- Lots of deformed roots.

Conclusions

'Laguna' displayed superior emergence, superb vigor and higher yields. Its roots were less uniform than those of 'Nelson' but longer (up to 10 inches) and just as flavorful. 'Nelson' roots were straight, smooth, sweet and crisp.

Trial 10. Corn, Bicolor

Varieties (information from seed catalogs)

'Mystique'

72 days. Reliable, midseason type with a long harvest period (up to 10 days) allowing for multiple harvests from a single sowing. Much sweeter than normal sweet corn.

'Trinity'

68 days. Very popular for its earliness and superb taste. The 8-inch ears have tender yellow and white kernels. Grows well in cool soils. Sugary enhanced (se+) type is sweeter than normal sweet corn.



Data

Data were collected at 18 sites in 2012.

Trait	'Mystique'	'Trinity'	Same
Germinated best	20 %	37 %	43 %
Healthier plants	34	21	45
Matured earlier	33	40	27
Higher yields	48	31	21
More attractive ears	41	33	26
Tasted better	27	42	31
<i>Preference</i>	<i>41</i>	<i>59</i>	
<i>Recommend to others</i>	<i>65</i>	<i>69</i>	
<i>Overall rating¹</i>	<i>7.22</i>	<i>7.41</i>	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- They were very good, sweet and tender.
- Both germinated very well. Plants looked equally healthy. Similar yields. Both tasted good.
- Both had lots of corn. Both were really good tasting.
- Both had very small ears and cobs.
- The plants were quite small. The ears were small and narrow, but tasted great.
- The yield was small for both. Disappointing harvest. Ears were small but tasty. Our garden plot only receives morning sun; I think corn needs more direct sunshine.
- Very few plants come up.
- Both did good so we could give for the Hunger Free Garden.

- We could not decide which tasted better.
- Germinated the same. Matured at about the same time, but raccoons ate the crop. Ears seemed short. Two ears per stalk.
- Both tasted better than 'Peaches & Cream'. Both are good for small gardens.
- Neither variety tasted as good as the other varieties in my garden.
- Both varieties have short, stubby cobs. We also planted 'Ambrosia' in the area; it had much longer, nicer cobs.
- Equal germination. Plants grew only 2.5 feet tall and did not more. No yield.
- Only 12 plants came up. The corn we ate was very good but I would say the varieties were equal.

Comments on 'Mystique' Corn

- Larger ears and more cobs; tastier.
- Sweeter and crisper.
- Cobs were longer.
- Better seed emergence and better productivity.
- Larger ears. We like its old-fashioned corn taste.
- This was the only variety that yielded ears good enough to eat. Grew better and tasted good.
- More cobs per stalk. More uniform rows of kernels on cobs.
- Cobs were longer; more corn per ear. Taste wasn't as good but still was good.
- Ears were irregular and many were small.
- Prone to getting a disease and was clearly more susceptible to bugs.
- Had a lot of smut.

Comments on 'Trinity' Corn

- Disease-resistant plants that produced large, sweet ears of corn. Best corn I've grown (only good corn grown) since living in ND.
- Harvested two weeks earlier (August 4 compared to August 18 for 'Mystique'). The first corn of the season always is best. You're tired of corn by the time later corn is ready.
- Its plants were taller and more vigorous. Its ears were larger and more uniform. The kernels were sweeter and more tender.
- Tasted better. Bigger ears.
- Produced first cobs. Ears looked nicer to my daughter. More flavorful.
- Taste was sweeter.
- Germinated better. Plants were bigger all along. Matured a couple weeks earlier. Ears were bigger and well filled.
- Prettier cobs—colors contrasted more. Smaller cobs.
- Germinated better under wet, cold conditions. We were harvesting by July 30; 1 week earlier than 'Mystique'.
- A little sweeter.
- Larger plants; sturdy; uniform ear size. Quick sprouting and tasseling.
- Planted May 3. Had 50% germination (compared to 25% for 'Mystique'). I wish I would have waited at least 2 weeks longer before I planted the corn. I think the soil temperature was not warm enough.
- Only 40% germination (sowed May 17).

Conclusions

'Trinity' showed strong seedling vigor and it matured several days earlier. Its sweetness was splendid and especially valued as the first corn of the season. 'Mystique' produced superior yields. Its ears were larger but not quite as sweet.

Trial 11. Corn, Yellow

Varieties (information from seed catalogs)

‘Spring Treat’

66 days. Very early and easy to harvest. Does well in cool soils. Good quality. Very sweet yellow kernels. This sugary enhanced (se) type is sweeter than normal sweet corn.

‘Sugar Buns’

70 days. Slender ears remain tender for up to two weeks in the field. Very sweet yellow kernels. Sugary enhanced (se+) type is sweeter than normal sweet corn.



Data

Data were collected at 15 sites in 2011 and 17 sites in 2012.

Trait	2011			2012			Weighted Total		
	‘Spring Treat’	‘Sugar Buns’	Same	‘Spring Treat’	‘Sugar Buns’	Same	‘Spring Treat’	‘Sugar Buns’	Same
Germinated best	33 %	40 %	27 %	18 %	35 %	47 %	25 %	37 %	38 %
Healthier plants	31	54	15	19	38	44	25	46	30
Matured earlier	54	38	8	40	47	13	47	43	11
Higher yields	46	38	15	27	27	47	36	32	32
More attractive ears	18	45	36	29	43	29	24	44	32
Tasted better	33	42	25	17	33	50	25	37	38
<i>Preference</i>	45	55		43	57		44	56	
<i>Recommend to others</i>	64	73		20	40		41	55	
<i>Overall rating¹</i>	6.62	6.23		4.20	5.07		5.33	5.61	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Very good tasting; no discernable differences.
- Both types were laid over by the wind and rain several times. Yields were not good and ears were small; I blame weather stresses.
- Neither did a good job. Spotty germination and small ears.
- Both varieties struggled due to our cold, wet soil in spring.
- Both germinated poorly.
- Approximately 75% germination. The tastes of both were nice and sweet and tender. Both are good for an early corn but likely aren’t optimal for preserving due to smaller, shallower kernels.

2012

- Both had uniform kernels and good flavor.
- Both had small ears (only 10–12 rows of kernels).
- We were not thrilled with either one. They had short stalks, each producing only one ear, and ears were small. We prefer ‘Gurneys Xtrasweet Bicolor’.
- Germination was slow: planted May 9; only 8–10 plants of each germinated by June 1 and only 16–20 plants of each germinated by mid June.
- Very poor germination on both (sowed May 12). Stalks were short and ears were small. Poor yields.
- Had to replant on May 27, three weeks after original sowing. Just wasn’t impressed.

More General Comments

- Both germinated poorly. Both showed browning on the leaves. Neither produced very well this year. The ears were not perfect, but were attractive and tasty.
- Neither variety had good germination (sown mid June). Plants were slow to start due to lack of available moisture. Neither had very good yield.
- We've always grown good sweet corn in that spot. This year only 5 plants came up—total! They never got tall and had tiny little deformed ears. We are big corn and soybean farmers as well, and can't figure out why the sweet corn did so terrible this year. It was embarrassing in our garden and Dad wanted to pull it out.
- Neither produced very much.
- We tried planting this corn with our pumpkins—"Three Sisters" style. The corn never developed. The stalks only grew to about 3 feet and tasseled with little bitty ears.
- Neither of these varieties could tolerate our extreme hot and dry conditions compared to the other sweet corn we grew. Very poor germination. Plants grew only waist high. Ears were gummy and hard.
- A wind storm knocked down my corn—didn't get any yield.
- A great trial for kids—fast results and easy for them to weed.

Comments on 'Spring Treat' Corn

2011

- Ears were well filled and uniform in size.
- Better germination. Higher yields (26 vs. 15 ears).
- Sweeter. Stalks only grew 2–3 feet but still produced ears. Slower to germinate; had only 50% germination.
- Slightly better taste. My daughter stated it had a rich, creamy taste; whereas 'Sugar Buns' just tasted like corn.
- Came up sooner and more germinated. Plants grew about twice the height of 'Sugar Buns'. More ears. It tasted good.

2012

- Ears filled out better. Matured 4–10 days earlier.
- Cobs were nicely formed.
- A sweet treat.
- Ears were longer, slimmer.

- Froze on May 26; the plants of 'Sugar Buns' survived.
- Had smut.
- Slightly better (15%) yield; although there were fewer plants.

Comments on 'Sugar Buns' Corn

2011

- Ears had more insect damage. Its ears were smaller and not as fully filled.
- It matured earlier and tasted better. I'd be interested in planting it again and hope for a better growing season.
- Tasted better.
- Better germination, more vigorous plants, and more attractive ears. Rows of kernels were even and uniform. Stalks produced multiple ears.
- Plants were more vigorous and taller. First to tassel and slightly higher yields. Slightly better.
- Grew faster.
- Sturdier stalk. Matured 3 days earlier.

2012

- The flavor was so good—so sweet. This made up for its short, stubby ears.
- Fuller, bigger cobs and also had good taste.
- Good looking plants; great taste.
- Hardier corn in dry weather.
- Better germination. Stalks were short (4 feet) but taller than those of 'Spring Treat' (3.5 feet); perhaps the plants would have been taller if they had received more water. Pollination problems (plants were sown in a single row rather than a plot).
- Didn't do as well. A few cobs had smut. More susceptible to earworms, too.
- The smut on the ears was not attractive.

Conclusions

Gardeners struggled with spotty germination. 'Sugar Buns' showed more vigor and sturdier stalks. The appearance and flavor of its ears were slightly preferred. 'Spring Treat' was earlier for many gardeners. Yields were comparable.

Trial 12. Corn, Flint/Ornamental

Varieties (information from seed catalogs)

'Bloody Butcher'

105 days. Ears filled with gorgeous “bloody” red and red-black kernels. Used for flour, cornmeal, or fall decorations. Good drought tolerance. Tall, 10-foot stalks. Heirloom from Virginia.

'Strubbes Orange'

100 days. Orange kernels with a touch of yellow and red. Makes for beautiful flour, cornmeal, or decorations. Sturdy stalks.



Data

Data were collected at 2 sites in 2012.

Trait	'Bloody Butcher'	'Strubbes Orange'	Same
Germinated best	50 %	0 %	50 %
Healthier plants	50	0	50
Matured earlier	0	100	0
Higher yields	50	0	50
More attractive ears	50	50	0
Tasted better ¹	-	-	-
<i>Preference</i>	<i>100</i>	<i>0</i>	
<i>Recommend to others</i>	<i>100</i>	<i>50</i>	
<i>Overall rating²</i>	<i>7.50</i>	<i>5.50</i>	

¹No one chose to evaluate these varieties for taste.

²Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- We did have a bad storm on July 19 and the corn bent down, but I was able to stake it up again. The deer ate my corn; they loved it.

Comments on 'Bloody Butcher' Corn

- Was about 15 feet tall and had beautiful wide leaves. It was just fun to watch grow. I think every seed germinated and grew. It was tall, strong and beautiful.
- Very tall, strong stalks. Deer didn't get the cobs.

Comment on 'Strubbes Orange' Corn

- No comments.

Conclusions

There was very little interest in this trial. 'Bloody Butcher' impressed gardeners with its tall, 10-foot stalks. Wind and deer challenged gardeners. There were no comments on kernel color or quality.

Trial 13. Corn, Popcorn

Varieties (information from seed catalogs)

‘Red Beauty’

120 days. Six-inch ears have dark red kernels. Kernel shells stay red after popping. Pink husks. Beautiful as ornamental. Some ears have yellow kernels. Late.

‘Strawberry’

100 days. Small, 3-inch ears look like giant strawberries. Popular popcorn and ornamental corn among northern gardeners.



Data

Data were collected at 10 sites in 2012.

Trait	‘Red Beauty’	‘Strawberry’	Same
Germinated best	10 %	40 %	50 %
Healthier plants	70	10	20
Matured earlier	70	20	10
Higher yields	90	0	10
More attractive ears	78	22	0
Tasted better	100	0	0
<i>Preference</i>	80	20	
<i>Recommend to others</i>	80	10	
<i>Overall rating¹</i>	6.60	4.20	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both were a beautiful color.
- Due to no rain and no watering, yield was poor and kernels did not pop.
- Neither produced many cobs.
- Both germinated well but blew over in the wind.
- Some smut on both but more on ‘Red Beauty’.

Comments on ‘Red Beauty’ Corn

- Stalks were taller. The heat reduced its yields. The ears I got were very pretty.
- Stalks were greener and three times bigger as of June 20. Its ears send out silks 2 weeks earlier. Each stalk had 5–6 ears compared to 1–2 ears for the stalks of ‘Strawberry’. The stalks withstood the hail storm; whereas those of ‘Strawberry’ fell down.

- Larger kernel. Some yellow cobs. Popped larger and more consistent.
- Healthier plants; produced more. Bigger ears and bigger kernels. Its ears looked more like an ear of corn; whereas the ears of ‘Strawberry’ were almost globe shaped.
- Larger ears and much bigger yield. Eight of the cobs were yellow.
- More vigorous and provided more corn; had several yellow ears though.

Comments on ‘Strawberry’ Corn

- Its ears looked like strawberries.
- Cobs were unique to look at.
- Its cobs were small.
- Stalks grew better—thicker and taller. Ears were super small. Smut problems.
- Started out strong and didn’t do as bad considering the dry conditions.

Conclusions

‘Red Beauty’ stalks were more vigorous and productive. Its deep red (and a few yellow) ears were much larger and more attractive. Its popcorn tasted better. The tiny ears of ‘Strawberry’ were cute but inferior as popcorn.

Trial 14. Cucumber, Pickling

Varieties (information from seed catalogs)

'Homemade Pickles'

49 days. Attractive, dark green fruits are good for fresh eating or pickling. Vines are shorter than those of most varieties. High yield potential. White spines.

'Jackson Classic'

49 days. Disease-resistant vines produce high yields of dark green, blocky cukes. White spines.



Data

Data were collected at 33 sites in 2012.

Trait	'Homemade Pickles'	'Jackson Classic'	Same
Germinated best	31 %	28 %	41 %
Healthier plants	50	7	43
Matured earlier	40	37	23
Higher yields	57	13	30
More attractive cukes	43	17	40
Tasted better	21	18	61
<i>Preference</i>	63	37	
<i>Recommend to others</i>	88	47	
<i>Overall rating¹</i>	7.35	6.45	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both did great! We got tons of cukes from both varieties.
- I was happy with both varieties. Both were great for pickling. Nice size and shape. Produced well.
- Both were about equal in taste.
- Both had healthy plants and produced good yields. Both tasted good and processed well as pickles.
- Although my watering source was uneven, I got a few quarts of pickles from both.
- Vines seemed to be about the same. Their cukes both tasted good.
- Vines stayed healthy to frost. Great pickles. Happy with both. Gave away many picklers and put up at least 20 gallons of pickles.
- Both did very well. They climbed along the garden fence and thrived. I used the small young cucumbers for pickling and they were great. Both produced high yields and made great pickles.

- Both had compact, strong vines.
- Vines withstood heat well. Very uniform cukes.
- Cukes were very straight. They were crisp and mild. When pickled, their tastes are similar.
- Both grew fast.
- Both produced more cukes than 'Chicago Pickling', the one I always plant.
- Neither grew as fast as 'Boston Pickling'. Low yield.

Comments on 'Homemade Pickles' Cucumber

- Produced more cukes and outlasted 'Jackson Classic'.
- Produced earlier. Cukes were just the right size for pickling. This variety outshined the other. I was impressed with its overall size and quality.
- I prefer its thinner cukes, which I prefer for canning. I like its crispness and smaller seeds.
- Tolerated the drought better. Produced for a greater length of time.
- Cukes were a little longer and narrower on average.
- I prefer its smaller cucumbers for slicing and pickles.
- Darker, healthier green leaves. Climbed better on the trellis. Produced 25% more cukes. Cukes grew straighter and the flavor was sweeter.
- Had a nice, even shape.
- Earlier producer; smaller seeds.
- Really produced. Great for pickling; didn't get so big.
- Better germination (60% vs. 40% for 'Jackson Classic'). Larger, longer vines. Total yield was higher, but yield per plant was very close.

More Comments on 'Homemade Pickles' Cucumber

- Produced more and looked healthier.
 - Great pickles. I put up 35 jars!
 - Produced so much better. The plants looked better, grew better and produced better.
 - Better suited to pickle production.
 - Cukes were early, but wish we had a bigger harvest.
 - Plants were healthier and more robust/productive.
 - Vines were healthier—about twice the size. Produced a steady amount of cucumbers—overall much better.
 - Better germination, more vines and twice as many cukes. Bigger cukes.
 - Perfect size and shape for canning. Great tasting; good color; seeds not large; large yield (75 cukes).
- Emerged in only 5 days (sown June 3)—amazing! Taste was better. They made good pickles.
 - Less bitter, crisper, fewer seeds. Nice looking cukes. Both varieties pickled well, but this one was best.
 - They were the first to produce, but not enough for a batch of pickles.
 - I hardly used any of these cukes; they could not compare to those of 'Homemade Pickles'.

Conclusions

'Homemade Pickles' vines were more vigorous and much more productive. Gardeners preferred the longer, narrower shape of its cukes for pickling. The cukes of 'Jackson Classic' grew faster and fatter on the vine.

Comments on 'Jackson Classic' Cucumber

- Better germination (90% compared to 70% for 'Homemade Pickles'). Seedlings were more vigorous but in the end both varieties produced healthy plants. Matured 10 days earlier. Produced 50% more cukes toward beginning of production but then tapered off more quickly. Its cukes were more likely to overgrow if you couldn't pick for a couple days. More odd-shaped cukes (football or hourglass shapes).
- Its vines were slightly more compact and spread less, but produced just as many cukes. This might be a good variety to consider if one's garden space is smaller.
- It always seemed to have more cukes.
- Earlier and ready for pickling first. Cukes had a nicer shape.
- Its small cukes tasted sweeter than those of 'Homemade Pickles'.
- Cukes grew a little larger than preferred.
- Cukes grew faster and fatter.
- Cukes had a nice color and stayed crispier.
- Withstood dry conditions better. Still blooming right up to frost. I make many quarts of dill pickles and the pickle size was perfect. Also worked good for slicing with excellent flavor.
- Some curled ends on the cukes. Cukes were short and wider. Matured 7 days earlier. Kept producing until end, although 'Homemade Pickles' produced more the last week.
- Germinated 5% better. Leaves had brown spots.

Trial 15. Cucumber, Slicing Burpless

Varieties (information from seed catalogs)

‘Sweeter Yet’

48 days. Earliest, most reliable burpless. Smooth, dark green fruits. Harvest when 8–10 inches long.

‘Tanja’

58 days. Long, 14-inch cukes are crisp, flavorful, and bitter-free. Good yields through the summer.



Data

Data were collected at 33 sites in 2012.

Trait	‘Sweeter Yet’	‘Tanja’	Same
Germinated best	39 %	21 %	39 %
Healthier plants	33	13	53
Matured earlier	71	14	14
Higher yields	59	21	21
More attractive cukes	50	25	25
Tasted better	48	22	30
<i>Preference</i>	63	37	
<i>Recommend to others</i>	84	42	
<i>Overall rating¹</i>	7.86	6.64	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Plants looked very healthy. Produced many cucumbers—bumper crop! Very little difference in taste—we like both very much.
- We had cukes from the end of July until frost. Many pickings from both varieties.
- Both were sweet and yummy. A little seedy. All of the plants were healthy and produced well.
- The cucumbers were not straight, but curled. Both were good producers. I liked the taste of both—good flavor and juicy.
- Plants were healthy.
- Both varieties matured about 2 weeks behind other people’s cucumbers of other varieties.
- Neither variety matured.
- The cucumbers were huge.

Comments on ‘Sweeter Yet’ Cucumber

- Excellent producer. Cukes stayed long and thinner without large seeds.

- Produced earlier and kept producing. Produced higher yields and did not get mildew until near the end of the season.
- Seedlings got off to a stronger start and ‘Tanja’ never caught up. The cukes were more uniform in size; had a nice color; and a great, crisp flavor.
- Produced two weeks earlier. Twice the production of ‘Tanja’. Smaller seeds. Better taste.
- Produced earliest cukes and were more prolific.
- Produced early and kept on until we pulled plants. High yields.
- Matured 5 days earlier.
- Matured 1 week earlier. Cukes were very long like zucchini.
- Skins were a little more tender.
- Significantly higher yields.
- Good, straight cukes. Stayed crisp a little longer in fridge.
- Plants drooped quickly after one hot day. The cukes were very curvy.
- The dry summer was not favorable to cukes, but overall ‘Sweeter Yet’ withstood the climate better.
- I still had cukes when others didn’t.
- Emergence was slower, but better.
- First to emerge. First to bloom.
- I prefer its straightness and size of cuke. They make an attractive, tasty dish. There is nothing like the flavor of a home grown cucumber; these were excellent.
- Tasted good.
- Tasted the best.
- Taste is good with no bitterness. Plants produced 20 cukes.

Comments on 'Tanja' Cucumber

- Came up first and more evenly. Much healthier plants. Noticeably later in producing. Very straight cukes.
- Cukes looked more like a traditional cucumber. My daughter liked its taste and shape better.
- Vines were loaded with flowers and cucumbers. Better yield. Good flavor.
- I gave sacks of them away.
- Germinated quicker and some suffered from late frost [sown May 13]. Cukes matured a little later—maybe due to the setback from frost. They seemed to have fewer seeds and more cucumber.
- Plants germinated a day or two earlier. Suffered mildew early on. Produced very few cucumbers.
- Stronger plants. Cukes were larger, longer and wider. Cukes kept better after picking, although the cukes of neither variety kept longer than 2 days.
- Never got a bitter taste.
- Cucumbers were very spiny and had an almost zucchini taste.
- Cukes were very long and thin. Many were misshaped and curved. Tasted bitter and dry.
- A larger cuke.
- Taste was a little bitter. Plants seemed to struggle.
- Its leaves turned white when nights got cooler. Had big blossoms and took a long time to produce fruit. I pollinated the plants and it still took a long time to produce fruit. Lots of curved fruit. I would not grow this again.
- Only had 40% germination (less than 'Sweeter Yet').

Conclusions

'Sweeter Yet' was earlier and more productive. Its cukes were long, smooth and thin without large seeds. Most gardeners preferred its taste. 'Tanja' cukes were larger, longer and wider—more like a traditional slicer.

Trial 16. Cucumber, Slicing Classic

Varieties (information from seed catalogs)

'Marketmore 76'

68 days. Popular main-season slicer. Disease-resistant vines set dependable yields of glossy, dark green fruits. Open-pollinated (non-hybrid).

'Straight Eight'

58 days. Popular early variety. Straight, dark green fruits grow 8 inches long. Small seed cavity. Excellent for slicing or making dill pickles. Open pollinated.



Data

Data were collected at 9 sites in 2011 and 11 sites in 2012.

Trait 'Detroit'	2011			2012			Weighted Total		
	'Mktmore 76'	'Straight Eight'	Same	'Mktmore 76'	'Straight Eight'	Same	'Mktmore 76'	'Straight Eight'	Same
Germinated best	29 %	14 %	57 %	9 %	18 %	73 %	18 %	16 %	66 %
Healthier plants	25	13	63	18	36	45	21	26	53
Matured earlier	13	63	25	43	57	0	30	60	11
Higher yields	13	50	38	30	40	30	22	45	34
More attractive cukes	14	43	43	11	44	44	12	44	44
Tasted better	25	13	63	11	22	67	17	18	65
<i>Preference</i>	43	57		10	90		25	75	
<i>Recommend to others</i>	57	86		50	80		53	83	
<i>Overall rating¹</i>	7.43	7.86		5.40	7.70		6.31	7.77	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Neither produced any cukes—planted too late and growing season was horrible.
- Germination was not that good for either variety—they just couldn't get going.
- Very good germination. Very healthy looking vines with lots of flowers on both.

2012

- Both had nice, straight, dual purpose cukes. I pickled most and left some for slicing.
- Lots of vines and blossoms, just not many cukes. The cukes were fat and not very long.
- Both varieties did well until we got hail, and then they still produced.
- Poor germination (sown end of May). Only four cukes harvested. Almost immediately a powdery

mildew attacked all vines in the garden, cucumber vines included.

- Neither germinated at all (sown May 17).

Comments on 'Marketmore 76' Cucumber

2011

- Came up first and plants looked bigger and better.
- Cukes were crisper, never bitter; great taste. Very straight but not as long.
- Many of its cukes were thick on one end and thin on the other. Hard to fit in jars.
- Produced 138 cucumbers compared to 87 for 'Straight Eight'. This was a surprise since 'Straight Eight' has a great reputation.

More Comments on 'Marketmore 76' Cucumber

2012

- Had 50% fewer plants and were slower to emerge.
- Seedlings popped out of the ground first. Cukes curled at the ends.
- Only three plants germinated. Both produced very tasty cukes.
- Cukes were bad in shape, hard to peel. Poor yield.
- Withstood the heat and uneven watering. Produced very well. Matured 1 week earlier. Continued to blossom until frost. Its cukes stayed nice and straight while those of 'Straight Eight' curled with uneven watering. Never tasted bitter. I have liked 'Straight Eight' in the past, but 'Marketmore 76' is now my preference!
- Produced 33% more, but its taste was a little bitter.
- Cukes had smaller seeds.

Comments on 'Straight Eight' Cucumber

2011

- Cukes had smoother skin.
- Prolific plants produced fruit longer.
- Cucumbers had a beautiful shape.
- Produced like crazy. Great taste. Just a good all around cucumber. If picked small they are super nice for pickles. If picked larger, they are excellent for slicing.

2012

- Germinated earlier and so flowered earlier. More plants led to more cukes. Big crop of nearly perfect cukes. Great dual purpose variety.
- Half of its seedlings died. Vines produced nice slicers. Superior and constant yields; harvested every other day.
- More predictable for even size. Good for slicers as well as for pickling.
- Lovely cukes—soft skins, too. I thought these were by far a superior cuke.
- Nice flavor. Cukes were not straight and even; this was probably due to drought.

Conclusions

'Straight Eight' produced earlier and produced more. Its cukes were uniform in shape and well suited to both slicing and pickling. Its vines were just as healthy as those of 'Marketmore 76' and the flavor of its cukes was comparable.

Trial 17. Cucumber, Slicing Hybrid

Varieties (information from seed catalogs)

'General Lee'

66 days. Very productive, main-season slicer. Disease-resistant vines set good yields even under adverse conditions.

'Raider'

52 Days. Dependable early slicer. Especially popular in the north. High yields of fancy, dark green fruits. Disease-resistant vines.



Data

Data were collected at 10 sites in 2012.

Trait	'General Lee'	'Raider'	Same
Germinated best	30 %	30 %	40 %
Healthier plants	25	25	50
Matured earlier	50	25	25
Higher yields	56	44	0
More attractive cukes	43	0	57
Tasted better	29	0	71
<i>Preference</i>	67	33	
<i>Recommend to others</i>	78	67	
<i>Overall rating¹</i>	7.89	6.89	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- We had our best cucumber crop in years.
- Both had nice vines. Both varieties were about equal in every category.

Comments on 'General Lee' Cucumber

- Its cukes did not get big and fat. They had a good taste. Plants were healthy.
- Slightly more yield. Fruits were a little bigger.
- Better taste, size, and shape of fruits. It produced 17 fruits totaling 5.5 pounds compared to 'Raider', which produced 21 fruits totaling 5.8 pounds.
- Produced first and had higher yields.

Comments on 'Raider' Cucumber

- Produced large, tasty cukes consistently all summer, even past first frost. First cukes showed uneven color. Delicious!
- Better yield and longer harvest through summer. Larger fruits.
- Firmer flesh, but tasted the same as 'General Lee'.

Conclusions

'General Lee' produced higher yields and these yields were surprisingly early. The quality of its cukes was as good, if not better than that of 'Raider'. 'Raider' was healthy and productive—but showed no advantages over 'General Lee'.

Trial 18. Greens, Chinese Cabbage

Varieties (information from seed catalogs)

'Fun Jen'

45 Days. Fast-growing cabbage with frilly, lettuce-like leaves. Crisp and mild. Light green leaves with white ribs. Used in stir fries and soups.

'Tokyo Bekana'

21 to 45 days. Light green leaves with ruffled tips. Mild flavor. Harvest as baby leaves for salads or cut later for stir fries.



Data

Data were collected at 6 sites in 2012.

Trait	'Fun Jen'	'Tokyo Bekana'	Same
Germinated best	17 %	0 %	83 %
Healthier plants	0	17	83
Matured earlier	20	0	80
Higher yields	20	40	40
More attractive leaves	40	20	40
Tasted better	40	0	60
<i>Preference</i>	60	40	
<i>Recommend to others</i>	80	80	
<i>Overall rating¹</i>	7.40	7.00	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Very good germination. Wonderful plants; uniform and growing. Matured the same day. Yields are fabulous and the plants grow back quickly. Very similar in taste and I liked them both.
- Every seed grew. Plants were very healthy. Hard to choose which one I liked best. Easy to grow.
- Both seemed pretty good but were severely damaged by flea beetles. Lots of holes in the leaves. They seemed to taste exactly the same. I would recommend this crop if no other cabbage family vegetables are planted; otherwise, flea beetles will build up and eat everything.
- Both were decimated by flea beetles in late July.

Comments on 'Fun Jen' Greens

- In my square-foot garden, it made a beautiful lush patch with great, light green color. Largest yields. Leaves stayed very mild even when they were large, making them excellent for wraps and sandwiches.
- Seemed to just do better overall.
- Ready first. Suffered more from insect damage when young.

Comments on 'Tokyo Bekana' Greens

- Plants were a little bigger and lasted a little bit longer before bolting.
- Produced a little more.

Conclusions

Both varieties produced good yields of light green, mild tasting leaves. 'Fun Jen' was preferred by a slight margin; gardeners liked its flavor and frilly leaves. The productivity of 'Tokyo Bekana' was noted. Flea beetles were a problem.

Trial 19. Greens, Mizuna

Varieties (information from seed catalogs)

'Early'

21 to 50 days. This Japanese mustard is tender and mild. Its lacy foliage is harvested young and added to salads; delicious in stir fries, too.

'Ruby Streaks'

21 to 40 days. Delicate, dark green leaves with dark red veins. Mildly pungent. Harvest as a baby green for salads or let mature for stir fries.



Data

Data were collected at 7 sites in 2012.

Trait	'Early'	'Ruby Streaks'	Same
Germinated best	57 %	0 %	43 %
Healthier plants	0	17	83
Matured earlier	29	57	14
Higher yields	57	14	29
More attractive leaves	33	33	33
Tasted better	67	0	33
<i>Preference</i>	57	43	
<i>Recommend to others</i>	86	29	
<i>Overall rating¹</i>	8.57	6.29	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Great germination. Plants were very healthy and sturdy—even in heavy rain. Amazing yields with very vigorous regrowth. Both are pretty and very tasty.
- Both varieties will be used again in our gardens.
- They both grew very well.
- I didn't like the flavor of mizuna in salad at all. Looked like it wouldn't do well in soups, either. All in all, a nice learning experience for my neighbors and me.

Comments on 'Early' Mizuna Greens

- From a single planting I was able to use the 'Early' greens almost all summer. Never went to seed. Milder taste.
- Produced more yield. Plants grew closer to the ground and were more tightly packed. Its leaves

were easier to harvest and included far less stems. They also had a very nice taste to them!

- Matured a little earlier. I prefer its taste. More sensitive to pests.
- More tasty. Didn't get old as fast as 'Ruby Streaks'. 'Early' stayed fresher longer after cutting.
- I loved being able to harvest this variety all summer and they survived on very little water.

Comments on 'Ruby Streaks' Mizuna Greens

- Plants were bigger and fuller. Matured two weeks earlier. Looked prettier.
- I really liked its look when combined with other greens. Very nice accent for a green salad.
- Went to seed very early in the growing season.
- Ready first, but went to seed very quickly. Plants started purple—pretty; then grew very tall.
- Went to seed in midsummer. More pungent flavor.

Conclusions

'Early' grew vigorously all summer—cutting after cutting—and had a fresh, mild flavor. 'Ruby Streaks' went to seed in midsummer and had a more pungent flavor. Its red veins contrasted nicely with other greens in salads.

Trial 20. Kohlrabi

Varieties (information from seed catalogs)

'Grand Duke'

45 days. Smooth, light green bulbs of superior quality. Former All-America winner.

'Winner'

45 days. Very popular for its fresh, fruity taste. Holds well in the field.

Data

Data were collected at 15 sites in 2012.

Trait	'Grand Duke'	'Winner'	Same
Germinated best	7 %	47 %	47 %
Healthier plants	14	21	64
Matured earlier	29	43	29
Higher yields	21	29	50
More attractive bulbs	15	23	62
Tasted better	23	23	54
<i>Preference</i>	23	77	
<i>Recommend to others</i>	57	64	
<i>Overall rating¹</i>	6.71	7.50	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both did great. I recommend starting the seeds in the house—the shape of the bulbs will be more uniform. The bulbs will be nice and very delicious before the heat hits.
- Both were very good.
- Pretty similar except for flavor.
- Very little difference.
- Might have planted too close together. Bulbs were small. We prefer 'Early Vienna'.
- Both were slow to mature.
- Both varieties were attacked by cabbageworms. They both got powdery mildew towards late summer.
- Very poor germination; may have been due to dry environment.
- I was not impressed with either.



Comments on 'Grand Duke' Kohlrabi

- Stronger taste.
- Tender. Better taste. Earlier. My husband loved it.
- Almost 100% germination. Plants maintained nice coloring as they grew. Milder flavor.
- Larger bulbs. Tasted "cabbagier" or more radishy. My husband prefers this flavor.
- Nicer bulbs. They were not woody and tasted very good.

Comments on 'Winner' Kohlrabi

- A week earlier to eat.
- I think it tasted sweeter; not so strong; but both were good. Its bulbs are smaller, sweeter, and less woody.
- Germinated with more vigor. Plants were bigger. Matured a little earlier. Higher yields. Bulbs were more rounded and filled out.
- Nice looking plants. Filled out well.
- Bulbs were attractive and tasty. Plants were healthy.
- Bulbs were more uniform in size.
- Milder taste, which I like.

Conclusions

'Winner' showed superior seedling vigor and matured earlier. Its bulbs were uniform and had a mild, refreshing taste. Some gardeners preferred 'Grand Duke' for its stronger flavor. Yields were comparable.

Trial 21. Lettuce, Bibb

Varieties (information from seed catalogs)

'Buttercrunch'

64 days. Longtime favorite. Sweet, crisp leaves are surrounded by thick, dark green outer leaves, making this an attractive Bibb type. A vigorous variety that grows well in spring, summer and fall. Resists bolting.

'Winter Density'

54 days. Compact bibb-romaine looks like a tall 'Buttercrunch'. Very tightly folded, 8-inch leaves. Popular heirloom from France.



Data

Data were collected at 29 sites in 2012.

Trait	'Buttercrunch'	'Winter Density'	Same
Germinated best	41 %	17 %	41 %
Healthier plants	28	10	62
Matured earlier	25	21	54
Higher yields	46	18	36
More attractive	46	21	32
Tasted better	56	19	26
<i>Preference</i>	75	25	
<i>Recommend to others</i>	86	64	
<i>Overall rating¹</i>	8.07	7.00	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- I liked both and would plant either again. Successive plantings kept us in lettuce all summer, even with the heat of July.
- The plants stayed nice a long time. We harvested much longer in the season than expected. Good flavor.
- Showed at County Fair and won a blue ribbon.
- Both were healthy all season. For a dry season, neither variety was bitter tasting.
- Both look attractive.
- Germination was spotty for both. Leaves of both varieties were tender.
- I liked them both. Good color and flavor.
- Poor germination (less than 50%).
- Neither germinated very well.

Comments on 'Buttercrunch' Lettuce

- Tasted better and grew much better. This is the all-around best variety!
- Much higher yield. Less bitter flavor. Softer, more delicate leaves. Quicker maturity.
- Continued to taste pretty good even after the hot weather set in.
- Very tasty and longer season.
- Yielded over a longer period of time. Tasted better; less bitter.
- Tender and tasty.
- Better taste. More germinated.
- Superior taste.
- Came up better, bushier, tasted better and more tender. Yielded better.
- My middle grandson, who doesn't like green salads much, really liked this variety. I like this variety better. I mixed it with spinach! Awesome salad!
- Always the best.
- Did much better for me.
- Produced better. Tasted better.
- A little more productive.
- Seemed to have better flavor.
- Was a little earlier and larger.
- Emerged in 7–8 days compared to 10–12 days for 'Winter Density'. Taste was less bitter. No lettuce stands up to 'Buttercrunch'!
- Had some rust and insect problems, while 'Winter Density' did not.
- Germinated earlier and more consistently in the indoor planting.

Comments on 'Winter Density' Lettuce

- Nice, shiny, medium green leaves. The plant had a nice cupped form.
- Superior flavor and appearance. Slightly sweeter.
- More flavorful and had a more substantial taste. Better heat tolerance and slower to bolt.
- Better taste and looks. Did a little better in the heat.
- More crunch.
- Bolted later.
- Better in all traits, except the most important one: taste.
- Was better all the way around.
- Better taste. More attractive; greener, darker color.
- Less bitter taste. More attractive leaves.
- Went to seed earlier.
- Better germination; more plants; higher yields.
- Slower to mature, but is very attractive in the garden. Leaves are nicely rounded.

Conclusions

'Buttercrunch' was preferred for its dark green leaves, mild and bitter-free flavor, and superior yields. Both it and 'Winter Density' resisted bolting and produced lettuce through spring and much of summer.

Trial 22. Lettuce, Leaf

Varieties (information from seed catalogs)

'Tropicana'

52 days. Full, heavy heads of deep green leaves. Very resistant to heat and bolting. Easy to grow.

'Two Star'

51 days. Heavy, dark green leaves are sweeter and less frilly than others. Heat resistant and easy to grow.



Data

Data were collected at 3 sites in 2011 and 4 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Tropicana'	'Two Star'	Same	'Tropicana'	'Two Star'	Same	'Tropicana'	'Two Star'	Same
Germinated best	33 %	33 %	33 %	0 %	50 %	50 %	14 %	43 %	43 %
Healthier plants	33	0	67	0	0	100	14	0	86
Matured earlier	33	33	33	50	50	0	43	43	14
Higher yields	33	0	67	0	50	50	14	29	57
More attractive	33	0	67	0	0	100	14	0	86
Tasted better	67	0	33	50	25	25	57	14	28
<i>Preference</i>	67	33		50	50		57	43	
<i>Recommend to others</i>	100	67		75	75		86	72	
<i>Overall rating¹</i>	8.67	6.67		7.00	7.00		7.72	6.86	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Both varieties did well. I had many cuttings.
- Beautiful plants; produced until mid-August!
- Our family couldn't tell any difference in taste and liked both equally well.

2012

- They both have bright looking leaves.

Comments on 'Tropicana' Lettuce

2011

- Tasted better.
- Produced first and significantly more leaves.

2012

- Two 'Tropicana' plants bolted, compared to six plants for 'Two Star'. All eight of our taste testers preferred 'Tropicana'; it had a sweeter taste.

- Matured earlier; otherwise, they are very similar.
- Tasted a little bitter.

Comments on 'Two Star' Lettuce

2011

- Seemed a little bitter.
- Matured earlier.

2012

- More vigorous. Regrew three times before temperatures got too high.
- Not as tasty as 'Tropicana', but not bad.

Conclusions

Both of these heat-resistant varieties produced good yields of deep green leaves throughout the spring and summer. Most gardeners liked both varieties but preferred the taste of 'Tropicana', giving it a slight edge overall.

Trial 23. Lettuce, Romaine

Varieties (information from seed catalogs)

‘Coastal Star’

57 days. Large, heavy leaves are dark green with sweet flavor. Heat tolerant.

‘Green Forest’

56 days. Very attractive romaine with tall, dark green leaves and smooth ribs. Tolerates heat. Very reliable.

Data

Data were collected at 30 sites in 2012.

Trait	‘Coastal Star’	‘Green Forest’	Same
Germinated best	20 %	20 %	60 %
Healthier plants	12	19	69
Matured earlier	17	21	63
Higher yields	12	35	54
More attractive	8	21	71
Tasted better	26	30	43
<i>Preference</i>	35	65	
<i>Recommend to others</i>	65	81	
<i>Overall rating¹</i>	6.88	7.42	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- They both performed good all summer. I couldn’t keep up with them all.
- Both stayed nice even in the hot weather and both refrigerated well. Very similar.
- Both were great. I harvested from early May to mid July when they finally bolted. I got a mountain of lettuce from those plants started inside; the other plants did not do as well as the heat got to them.
- Both produced equally well. I gave a lot away as we couldn’t begin to eat all. It got hot and they dried up so it’s definitely a cold weather crop.
- Plants had similar appearance—just as thick. Equally crisp.
- Tasted the same. Harvested both varieties multiple times.
- Both are very easy to grow. Very healthy plants. Looked and tasted excellent. Both are delicious and have long tender leaves. I prefer ‘Coastal Star’, my wife prefers ‘Green Forest’.



- I couldn’t tell them apart by looking. They were both almost identical—in taste, look and performance.
- Leaves of both varieties became coarse early in the season.
- The plants of both varieties grew at the same rate. The plants looked like they were store bought—beautiful— but the deer got them before I could pick them.
- I was disappointed they bolted so fast. Probably due to the hot weather.
- I usually plant baby romaine and much prefer it to these traditional varieties.
- I prefer ‘Parris Island Cos’.
- Very, very poor germination. No plants got to the harvest stage.

Comments on ‘Coastal Star’ Lettuce

- Ninety-eight percent germination. Healthy, nicely developed plants. Nice size heads—leaves looked great. Mild flavor, crisp leaves. Great variety—will plant again. My daughter took a head of ‘Coastal Star’ to our county fair and she won a Grand Champion award.
- Got three cuttings. Performed better overall.
- Emerged 2–3 days earlier. Grew up first and faster.
- Earlier emergence, but ‘Green Forest’ caught up quickly. ‘Coastal Star’ seemed to last longer in the garden; more days of lettuce to pick.
- Plants grew taller. Tasted better. Good disease resistance and longer production life.
- Mild taste.
- Plants were a little more pale and shorter.
- Did not germinate—after two plantings.

Comments on 'Green Forest' Lettuce

- Plants were taller, more uniform, and looked more robust. Nice large leaves that had a good flavor.
- Larger leaves. Darker green color.
- An all-around excellent lettuce in every way. Even kept crunchy with dressing on top.
- Matured early with wonderful plants.
- Tasted better longer. Slower to bolt.
- Better all the way around.
- More tender and yet still crisp.
- I liked its color.
- I prefer its color and it had a higher yield.
- I prefer its heads and thought the leaves were a bit more tender.
- A more desirable, milder taste.
- Better germination; higher yield.
- A little fuller row. Plants seemed leafier. Nice plants. Better yield.
- More tender and stayed that way considerably longer even in the hot and dry conditions. Somewhat higher yield.
- Seemed less bitter even after it bolted.
- Never really came up.

Conclusions

Both varieties were healthy, productive and delicious. Many gardeners rated the varieties as similar for health, earliness and yield. Most preferred 'Green Forest' for its deep green and tender leaves, mild flavor and superb yields.

Trial 24. Melon, Cantaloupe Early

Varieties (information from seed catalogs)

‘Goddess’

70 days. Excellent early yields. Fruits range 4–6 pounds in weight. Rinds are finely netted with shallow ribs. Very sweet, bright orange flesh. Disease-resistant vines.

‘Halona’

73 days. This early melon has outstanding flavor and good size (4–6 pounds). Vines resist diseases.



Data

Data were collected at 16 sites in 2011 and 25 sites in 2012.

Trait	2011			2012			Weighted Total		
	‘Goddess’	‘Halona’	Same	‘Goddess’	‘Halona’	Same	‘Goddess’	‘Halona’	Same
Germinated best	38 %	38 %	23 %	28 %	12 %	60 %	32 %	22 %	46 %
Healthier plants	18	18	64	29	19	52	25	19	57
Matured earlier	55	18	27	44	56	0	48	41	11
Higher yields	36	45	18	47	37	16	43	40	17
More attractive melons	33	44	22	47	12	41	42	24	34
Tasted better	33	33	33	38	38	25	36	36	28
<i>Preference</i>	40	60		56	44		50	50	
<i>Recommend to others</i>	50	45		47	47		48	46	
<i>Overall rating¹</i>	5.91	5.91		6.24	6.35		6.11	6.18	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- I never dreamed we’d have cantaloupe! They were smaller, but we loved them!
- This was not a good year for trials. Extreme weather delayed planting to the end of June.
- Flavor of both varieties was somewhat bland and not real sweet.
- Neither variety grew well.
- It was a horrible spring—cold with flooding. It’s very surprising any came up at all (50% germination). Both produced well.

2012

- Both very good eating—sweet.
- Both tasted good.
- Similar in sweetness.
- Melons were few and did not taste very good. Many rotted before being picked—not sure why.

- Good producers. The melons did not have good flavor. Mushy.
- Neither variety produced well, with only a total of 6 cantaloupes among both varieties.
- Poor germination (sowed May 12). Otherwise, both varieties were excellent. I never had so big, many and delicious melons.
- Our cantaloupe patch (3 hills of each variety) produced about 50 melons—enough to share with lots of neighbors.
- I wasn’t thrilled with either variety. Neither one tasted very good. They had a “tough” texture and were not flavorful.
- I don’t recommend either. Better varieties include ‘Superstar’, ‘Super 45’, ‘Planters Jumbo’, and ‘Mainstream’ to name a few.
- Neither one is a good tasting melon.
- Did not germinate (sowed May 14). I think I should have waited for the soil to be warmer before I planted.

More General Comments

- All vines died. Did not produce.
- Got too hot and dry. Couldn't keep up with watering. They never set fruit.
- Hail did a lot of damage, but we did get some cantaloupe. Neither variety produced very large cantaloupe.

Comments on 'Goddess' Cantaloupe

2011

- A much sweeter, firmer textured melon. Much larger.
- Bigger melons.
- Could not survive our growing conditions.
- Did not germinate (sowed May 20).
- Sweeter. Sometimes split, but not as often as 'Halona'. Bad year for cantaloupe.

2012

- More seeds germinated. The plants appeared healthier.
- Emerged 2–3 days earlier. Grew up first and faster.
- Healthier plant. More and larger fruits.
- Melons were larger and more oblong in shape. Ridges on the side and smooth on top.
- Matured 6 days earlier. Produced a better sized melon. More yields and easy to train the vines.
- Fruits were much larger.
- Bigger melons.
- A really pretty melon.
- Better taste.
- Produced first melon two weeks earlier.
- Marked difference in sweetness. Seemed to store better in the fridge.
- Larger crop. Nicer looking skin. Juicier and sweeter.
- Melons were bigger and better. Ripened earlier.
- Melons were too small—barely made softball size.
- Best flavor.

Comments on 'Halona' Cantaloupe

2011

- More, larger melons. A sweeter, richer flavor. Everyone chose this as their favorite.
- Melons were round. Tasted much better than 'Goddess'. Melons were smaller but I got almost twice as many. I liked the small size. They were perfect to take a half one to the workplace for lunch.
- Better yield.
- Its melons looked more like the ones in the store, only smaller.
- Better germination (90% versus 60%). Its melons were smaller but there were more of them. Cracked and split early. Smoother rind.
- Ripened 3 to 4 days earlier. Its rinds split as they ripened and if you did not pick them immediately the cracks became infested with wasps, ants and assorted other critters. Its texture was somewhat mealy.
- Germinated, but plants later died. No melons.

2012

- Vines were more compact. Cantaloupes ripened 2 weeks earlier. Produced 22 very large melons, while 'Goddess' produced 14 large melons.
- Plants were a bit more vigorous. Melons were smaller—perfect for our household of two—but not less attractive. Much sweeter.
- Small, early melons.
- Ripened more quickly.
- Sweeter.

Conclusions

Most gardeners did not recommend either variety. 'Goddess' got a slight edge in earliness and yield. Its finely netted melons were more attractive and less subject to splitting. The flavors of it and 'Halona' were good but not exceptional.

Trial 25. Melon, Cantaloupe Main Season

Varieties (information from seed catalogs)

‘Hannah’s Choice’

76 days. Noted for its exceptionally sweet and juicy orange flesh. Melons are 3 pounds. Developed in north-eastern USA.

‘Sarah’s Choice’

86 days. Good yields of mid-sized (3–5 pound) melons. Deep orange flesh with outstanding flavor. Vines resist many diseases. Developed in northeastern USA for local markets.



Data

Data were collected at 8 sites in 2012.

Trait	‘Hannah’s Choice’	Sarah’s Choice’	Same
Germinated best	38 %	13 %	50 %
Healthier plants	38	0	63
Matured earlier	33	67	0
Higher yields	57	43	0
More attractive melons	17	33	50
Tasted better	33	50	17
<i>Preference</i>	43	57	
<i>Recommend to others</i>	71	86	
<i>Overall rating¹</i>	7.71	8.14	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- I’ve never had such good tasting melons—ever.
- Germination wasn’t great due to extreme conditions but we then mulched and watered them. They grew like crazy. Both were delicious. I would plant both again. These varieties were terrific! Big, beautiful and delicious. We got rave reviews from everyone. Over and over we heard that “you can’t buy anything like that!”
- Both were good.
- I expected higher yields from both.

Comments on ‘Hannah’s Choice’ Cantaloupe

- Faster germination, healthier and bigger plants, more fruit, and better tasting fruit. So incredibly sweet.
- Produced twice as many melons. Better production and flavor.
- The fruit was very good. It was sweet and juicy.
- Produced more melons but did not ripen as many.

Comments on ‘Sarah’s Choice’ Cantaloupe

- Earlier. Higher yields [24 melons compared to 19 for ‘Hannah’s Choice’]. Slight edge in flavor.
- Earlier by two weeks. Tasted better by 2 to 1 margin.
- About 10 days earlier.
- Its melons were bigger and tasted great.
- More melons.
- Had a thinner rind, which we liked.

Conclusions

Most gardeners preferred ‘Sarah’s Choice’. It ripened earlier and several gardeners preferred its taste. ‘Hannah’s Choice’ was more productive. Gardeners were impressed with the flavor of both varieties and rated them highly.

Trial 26. Melon, Galia

Varieties (information from seed catalogs)

'Arava'

77 days. Green-fleshed melon named for a valley in Israel. A good yielder even in cool conditions. Rinds are smooth and lightly netted with no ribbing. Melons average 3 pounds. Vines resist powdery mildew.

'Diplomat'

71 days. Large, 5–6-pound melons ripen early. Thick green flesh is sweet and aromatic. Small seed cavity. Vigorous vines. Fruits slip when ripe.



Data

Data were collected at 11 sites in 2012.

Trait	'Arava'	'Diplomat'	Same
Germinated best	36 %	18 %	45 %
Healthier plants	18	0	82
Matured earlier	50	50	0
Higher yields	60	20	20
More attractive melons	55	9	36
Tasted better	55	18	27
<i>Preference</i>	64	36	
<i>Recommend to others</i>	91	45	
<i>Overall rating¹</i>	7.64	6.18	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- We thought both varieties had a “perfumey” taste; ‘Arava’ much less so.
- Both were slow to start (sowed May 19).
- Both were very good tasting.
- Both were very sweet but we didn’t really care for the flavor of either one.

Comments on ‘Arava’ Melon

- Germinated first. Matured weeks earlier. Lots of melons. Very sweet and tasty.
- Produced lots of melons of good size. Melons had pretty webbing and were golden when ripe. Excellent flavor. Melons are large, attractive, bountiful and delicious. I did have to peel a good bit of outer rind off.
- Matured very early; very sweet and juicy.

- Emerged later, but ended with better emergence and larger seedlings. Grew best because of the larger seeds, in my opinion. Produced three melons totaling 10.6 pounds compared to ‘Diplomat’ which produced three melons totaling 10.3 pounds.
- Ready sooner and tasted better.
- Produced larger, but fewer melons.
- Better taste, but I won’t plant either variety again.
- Held well on the vine; ‘Diplomat’ spoiled easily on the vine.
- Harvesting ended quite early.

Comments on ‘Diplomat’ Melon

- Produced the first melon, harvested on August 28.
- The first melons from our garden. Superior flavor and texture. Yum!
- Too slow. Only got a few melons to ripen.
- Kept producing until first frost. Much more productive.
- Liked its taste better.
- Produced more; although not many melons.

Conclusions

‘Arava’ produced higher yields than ‘Diplomat’ and matched it for earliness. Its melons, lightly netted and 3 pounds in weight, were more attractive and sweeter. Ninety-one percent of gardeners recommended ‘Arava’—remarkable.

Trial 27. Melon, Green Flesh

Varieties (information from seed catalogs)

'Eden's Gem'

72 days. Also called 'Rocky Ford', this heirloom has small, 1-pound fruits with a complex spicy flavor and smooth texture. Fruits slip from the vigorous vines when ripe.

'Jenny Lind'

75 days. Soft, juicy, lime-green flesh with mild flavor. The small, 1-pound fruits have coarse netting with a button on their blossom ends. Rind blushes when ripe.



Data

Data were collected at 9 sites in 2011 and 2 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Eden's Gem'	'Jenny Lind'	Same	'Eden's Gem'	'Jenny Lind'	Same	'Eden's Gem'	'Jenny Lind'	Same
Germinated best	25 %	13 %	63 %	0 %	0 %	100 %	20 %	11 %	70 %
Healthier plants	38	25	38	0	0	100	31	20	49
Matured earlier	25	25	50	50	0	50	30	20	50
Higher yields	14	57	29	100	0	0	30	47	24
More attractive melons	17	33	50	0	50	50	14	36	50
Tasted better	25	75	0	50	0	50	30	61	9
<i>Preference</i>	25	75		100	0		39	61	
<i>Recommend to others</i>	25	25		50	0		30	20	
<i>Overall rating¹</i>	5.00	6.20		5.50	4.50		5.09	5.89	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Nothing matured before frost. Only one fruit set.
- Both had to be picked a tad early before they were ripe or just as they got ripe; otherwise they rotted and got bugs even if I was a day or two late. I liked the small size of both varieties.
- An early frost killed plants. I covered some but they never ripened. They smelled sweet but no taste.
- Only one melon of each variety was ripe for our killing frost on September 15.
- It was not a good year for these plants. The melons were set very late; they were small and most failed to ripen.
- The vines of both varieties were loaded with fruit. It was very disappointing that none ripened before frost.

- Their vines take up more space than the amount of their produce justifies.

2012

- Almost all seeds came up. Vines were very healthy.
- I did not like either one. They were very late to ripen and I didn't like their flavor.
- We started plants indoors. All plants died when we moved them to the garden.

Comments on 'Eden's Gem' Melon

2011

- Plants were small but full of blooms.
- Its melons came earlier, but still not until mid to late August.
- Tasted better, but not as good as 'Diplomat'.
- Fruits were very small.

2012

- Melons were smaller and seemed to ripen faster. Vines produced more fruit. Melons tasted sweeter and juicier.

Comments on 'Jenny Lind' Melon

2011

- First melon ripened on August 15. Produced slightly more melons and tasted a lot better.
- More melons on vines. It ripened first, but not until September 10.
- It did fairly well in very wet conditions and a short growing season.

2012

- No comments reported.

Conclusions

Neither variety did well. Fruits were small (1 pound) and rarely matured before frost. 'Jenny Lind' was preferred due to its higher yields and better taste, but the vast majority of gardeners would not recommend it or 'Eden's Gem'.

Trial 28. Okra, Green

Varieties (information from seed catalogs)

'Clemson Spineless'

60 days. The most popular variety in the USA. Medium green pods are tapered, spineless and good quality. Productive plants grow 4 feet tall.

'Star of David'

70 days. The ribbed pods show the Star of David when cross-sliced. The pods are thick and best harvested young (3 inches). Tall, 7-foot plants.



Data

Data were collected at 2 sites in 2011 and 3 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Clemson Gem'	'Star of David'	Same	'Clemson Spineless'	'Star of David'	Same	'Clemson Spineless'	'Star of David'	Same
Germinated best	50 %	0 %	50 %	33 %	33 %	33 %	40 %	20 %	40 %
Healthier plants	0	0	100	33	0	67	20	0	80
Matured earlier	0	100	0	67	0	33	40	40	20
Higher yields	0	100	0	67	0	33	40	40	20
More attractive pods	50	50	0	67	0	33	60	20	20
Tasted better	0	50	50	0	0	100	0	20	80
Preference	50	50		100	0		80	20	
Recommend to others	50	50		67	0		60	20	
Overall rating ¹	5.00	6.00		6.00	5.33		5.60	5.60	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Plants were nice and green.

2012

- Neither variety produced any pods.

Comments on 'Clemson Spineless' Okra

2011

- I prefer its more slender pod.

2012

- Got off to a later start but did better overall. It was healthiest.
- Germinated first; almost all seedlings emerged on the same day. I prefer its slender pod.

Comments on 'Star of David' Okra

2011

- Plants were taller and had more pods on them. Pods were long, skinny, and in the shape of 'Star of David'. Tasted a lot better; not as crunchy.
- Seemed to handle the frost better.

2012

- High germination, but not uniform (10-day span). Slower to mature and lower yields.

Conclusions

Few gardeners were interested in this trial. 'Clemson Spineless', the leading variety in the USA, was preferred due to its more slender pods. Its earliness, yield and taste qualities were comparable with those of 'Star of David'.

Trial 29. Okra, Red

Varieties (information from seed catalogs)

'Carmine Splendor'

51 days. Deep red pods turn lighter red as they develop. Plants are productive and ornamental. Early.

'Red Burgundy'

57 days. Attractive 4-foot plants with burgundy accents produce good yields of tender, burgundy pods.

Data

Data were collected at 9 sites in 2012.

Trait	'Carmine Splendor'	'Red Burgundy'	Same
Germinated best	22 %	56 %	22 %
Healthier plants	11	56	33
Matured earlier	14	71	14
Higher yields	38	38	25
More attractive pods	25	38	38
Tasted better	38	38	25
<i>Preference</i>	50	50	
<i>Recommend to others</i>	75	75	
<i>Overall rating¹</i>	7.63	7.00	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both varieties grew quickly and yielded quite a bit of produce. Pods look very nice.
- Neither variety compares to my traditional 'Clemson Spineless'.
- Both were prone to insect damage despite regular insecticide applications.
- I waited till June 1 to plant—in the future I will need a longer growing season or an earlier planting date.

Comments on 'Carmine Splendor' Okra

- Beautiful blossoms but scant yields.
- Blossoms were more attractive.
- Its pods could get pretty large before they got woody.
- Longer pods.
- Deeper color overall and when cooked/pickled turned a creamy white as compared to a sickly grey for 'Red Burgundy'.



- Better tasting; not as woody.
- Plants seemed to suffer quickly when not watered. Began losing leaves after first picking. Pods were sweeter, milder.

Comments on 'Red Burgundy' Okra

- Perfect, 100% germination. Taller plants. Deeper red, more slender pods. More tender pods, but no one really enjoyed the taste of either. Plants were more attractive.
- Germinated well and plants were nice.
- Better emergence. Hardier, better heat tolerance.
- Stalks were taller and more vigorous. Pods have a sharper taste.
- More flavorful.
- Spindly and scant yield.

Conclusions

Both varieties performed well. Gardeners enjoyed the beauty of 'Carmine Splendor' blossoms; its pods were milder in flavor. The plants of 'Red Burgundy' were more vigorous, healthier and produced an earlier crop of pods.

Trial 30. Pea, Shelling

Varieties (information from seed catalogs)

'Green Arrow'

70 days. Impressive yields of long, slim pods each with 9–11 small, flavorful peas. Pods are borne in pairs along the 28-inch vines. Trellising optional.

'Lincoln'

65 days. Another excellent variety for freezing. Pods are 3.5 inches long with 8–10 small, tender peas inside. Excellent flavor. Vines tolerate heat and resist diseases.



Data

Data were collected at 26 sites in 2011 and 29 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Green Arrow'	'Lincoln'	Same	'Green Arrow'	'Lincoln'	Same	'Green Arrow'	'Lincoln'	Same
Germinated best	23 %	23 %	54 %	24 %	24 %	52 %	24 %	24 %	53 %
Healthier plants	17	17	67	30	37	33	24	28	49
Matured earlier	39	48	13	19	59	22	28	54	18
Higher yields	41	36	23	27	50	23	34	43	23
More attractive pods	35	43	22	35	38	27	35	40	25
Tasted better	26	30	43	13	42	46	19	36	45
<i>Preference</i>	52	48		33	67		42	58	
<i>Recommend to others</i>	61	78		66	79		64	79	
<i>Overall rating¹</i>	7.26	7.65		6.89	7.71		7.06	7.68	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Germinated equally well. Plants were equally healthy. Produced equally well.
- Both had such poor yields; they were a waste of my garden space.
- Both produced well.
- Both had abundant yields. The peas never made it to the house—perfect garden snack.
- On September 6, we had our third picking. This is very unusual—no mildew on any of my peas.
- Nothing came up.
- Not much yield; barely one meal per picking.
- The first planting (May 29) did not come up so I replanted (June 22). 'Lincoln' did not germinate well either time.
- Plants were big and healthy. Loaded with pods.

- Both varieties grew tall. Staking is recommended.
- Peas died from high water while they were flowering.
- Both varieties did very well, despite a very wet, cold spring (probably why they did better). There was hardly any difference in taste.

2012

- Both came up really well. Not much difference. Both were great!
- Both varieties germinated well and had very healthy, vigorous plants.
- Both produced well.
- Both varieties germinated well. Pods looked very nice. Very little difference in taste—both tasted very good.
- Both emerged equally well. Both had really good growth until it got dry; then both slowed down.

More General Comments

- They both germinated very well. The vines did not look very healthy. We did not notice a difference in yield.
- Germination was only fair.
- We didn't seem to have as large of pods as usual; there were fewer peas per pod; not sure why. Really didn't taste much difference between the two varieties.
- We only had one meal of peas because they were mostly eaten in the garden!

Comments on 'Green Arrow' Pea

2011

- Its vines did not dry up as quickly. Tasted great raw and cooked. I've always planted 'Lincoln' but will branch to other varieties.
- The plants were healthier.
- The wet weather induced disease, but only on this variety. Its pods were nice and long but did not fill well. Excellent taste.
- More peas.
- Came up quicker. Matured two to three weeks earlier.
- Longer pods. Longer blossom time. Higher yields (5.25 pounds compared to 4 pounds for 'Lincoln').
- I liked its pods. They were long with many peas inside.
- Produced slightly more.
- Pods were large and thinner skinned. Peas were sweeter and a little more tender.
- The plants were stronger. Had more pods and more peas. Long, full pods.
- Definitely produced more, even with the poor germination. Long pods; better taste.
- Much better taste.

2012

- These are real champions! Made it through the hot days and kept on blooming and producing 'til fall! More peas per pod and more pods per plant.
- Very good tasting with long pods and several peas in each pod.
- Larger pods with more peas per pod. 'Green Arrow' has 8–10 peas per pod compared to 'Lincoln' with 6–8 peas per pod.

- Larger pods, with an average of 8 peas per pod (compared to 5–6 peas per pod for 'Lincoln'). Matured a few days later, but overall produced more pods. Produced for over 3 weeks (compared to 1.5–2.0 weeks for 'Lincoln').
- Pods had 8–10 peas per pod (compared to 6–8 peas for 'Lincoln'). I've always preferred this variety.
- Bigger, fatter pods; good taste.
- Germinated first. Its pods were longer, each having 2–3 more peas per pod compared to 'Lincoln'.
- Pods were longer and fuller. They produced first and stayed tasty longer.
- Pods were longer but peas were not as juicy. Not as tasty.
- Uniform, long and nicely filled pods. Produced a higher yield.
- Yield was so much better and longer.
- Vines looked slightly more healthy.
- Bigger vines, spread more. Longer pods.
- Healthier vines. Six peas per pod compared to five peas per pod for 'Lincoln'.

Comments on 'Lincoln' Pea

2011

- Filled out four days earlier. Sweeter flavor.
- Almost 100% germination (compared to 80% for 'Green Arrow').
- Earlier by several days.
- Pods were darker green. They popped open for eating. Very sweet even when very large and over-ripe.
- Matured six days earlier.
- Faster growing and nicer taste.
- Produced a higher yield.
- Peas were good size.
- Nice long pods, very tasty peas. The only thing is that you need to put up a tall fence. My vines fell over and were hard to pick. Produced 7.5 pounds compared to 4.5 pounds for 'Green Arrow'.
- Almost double the yield. More peas in pods.
- Pods looked nicer and tasted better whether eaten raw or cooked.
- Were the best tasting.
- Twice the germination. Earlier by a few days. More pods. Larger peas.

More Comments on 'Lincoln' Pea

2012

- Overall was a better pea start to finish.
- Germinated slightly better. Its peas tasted sweeter and its pods filled out more fully.
- Matured 5–7 days earlier. Vines stood up to heat well in July. The pods were juicier—better taste—my daughter told me not to plant the other varieties—only 'Lincoln'.
- Matured a few days earlier.
- Did not wilt in the heat. We froze nearly 20 bags of 'Lincoln' peas.
- I have always liked 'Green Arrow'; however 'Lincoln' outgrew and outproduced and even had better flavor.
- Matured a few days earlier. Very consistent all around.
- Vines were taller and produced for a longer time. Pods were more attractive.
- Produced its first yield much earlier.
- Kept putting on more pods. Pods were very uniform and straight. Peas had more flavor—just a little extra pop.
- A little better production.
- First bloomed on June 9. Superior first harvest (18 ounces compared to 5 ounces for 'Green Arrow', on July 1). Larger and more attractive pods and tasted slightly better.
- First to produce, the last to give up in drought conditions.
- Slightly sweeter.
- Had a poor pea crop—but 'Lincoln' produced better.

Conclusions

'Lincoln' matured earlier and produced superb crops of attractive pods, even when the weather was unusually warm. 'Green Arrow' had larger pods with more peas per pod, but many gardeners felt 'Lincoln' peas were more delicious.

Trial 31. Pea, Snap

Varieties (information from seed catalogs)

'Sugar Ann'

52 days. Very early. The 24-inch vines produce sweet, crisp pods. Remove string from pods before cooking. Does not require trellising.

'Sugar Sprint'

58 days. Short, 2-foot vines produce 3-inch, nearly stringless pods. Excellent eating quality. Does not require trellising.



Data

Data were collected at 30 sites in 2012.

Trait	'Sugar Ann'	'Sugar Sprint'	Same
Germinated best	67 %	10 %	23 %
Healthier plants	55	14	31
Matured earlier	82	4	14
Higher yields	48	19	33
More attractive pods	37	26	37
Tasted better	41	15	44
<i>Preference</i>	69	31	
<i>Recommend to others</i>	80	30	
<i>Overall rating¹</i>	7.45	5.79	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both varieties came up very even and quickly. Plants were sturdy and withstood heavy rains early in the season. Pods were smooth and crisp, not stringy or tough. They were very sweet and tender.
- Both were productive.
- My 4-year-old gardener was in charge of the peas. Most of the time the peas didn't make it to the house. The kids washed the peas in the garden and snacked while they weeded.
- Both had near 100% germination. Both varieties produced small pods.
- Both varieties germinated within 10 days. 'Sugar Ann' had 95% germination compared to 70% for 'Sugar Sprint'.
- The crop was very sparse on both varieties (25% germination). It's hard to say which one is better.

- The vines of both varieties started to grow well but then froze in late spring.
- Poor germination on both (approximately 10%) (sowed May 26). Vines did not grow more than 4 inches and only a few pods were produced. Crop failure.
- Both varieties were slow to sprout and we needed to replant. Neither variety was super healthy.
- Low yields. Lots of distorted pods.
- Did not survive the drought.

Comments on 'Sugar Ann' Pea

- Both germinated well and 'Sugar Ann' showed more vigor. Matured 1 week earlier. Produced larger peas. Pods were large and waxy; lighter colored.
- Matured 8 days earlier. Yields were higher and the vines kept producing longer despite high temperatures.
- The peas were so tasty and they had lots of peas in them!
- Its peas were smaller but sweeter. Crispier.
- Matured 2–3 days earlier. Good yields of delicious peas.
- Much sweeter and crispier. Plants were bigger and healthier.
- Near 100% germination (compared to 33% for 'Sugar Sprint'). Plants were very healthy. Kept producing after pickings.
- Matured 2 weeks earlier. Gave a nice yield. Pods had a nice size.
- Grew faster and sturdier. Plants lasted better in the heat. Its peas were much sweeter. Its pods were tender and not stringy.
- Came up first. Stronger, healthier plants. Produced first. Produced 33% more.

More Comments on 'Sugar Ann' Pea

- Bigger pods but fewer.
- Seedlings were more vigorous. Full pods by the 4th of July. Yielded a lot of peas. Although the pods were not as uniform and attractive, they surpassed the competition in taste.
- Harvested one big bowl and next week got another before picking 'Sugar Sprint'.
- Tough. The little plants tried to produce even in drought conditions.
- Survived the heat better.

Comments on 'Sugar Sprint' Pea

- Vines and pods were smaller.
- Had more peas and looked nicer.
- Lasted a little longer when weather got hot (sowed on first week of June).
- Sweeter and tasted better overall.
- Produced more.
- Better yield.
- Smaller plants and smaller pods.
- Smaller plants. Better taste.

Conclusions

'Sugar Ann' showed more vigor and produced its first pods a week earlier. Its vines kept producing despite the warm temps, leading to higher yields. Its pods were just as, if not more beautiful and delicious as those of 'Sugar Sprint'.

Trial 32. Pea, Snow

Varieties (information from seed catalogs)

'Dwarf Grey Sugar'

65 days. Pale green pods are stringless; perfect for salads or steaming. Lovely purple flowers. Vines grow 24–30 inches. Trellising optional.

'Oregon Sugar Pod 2'

58 days. Short, 2-foot vines produce 3-inch, nearly stringless pods. Excellent eating quality. Does not require trellising.



Data

Data were collected at 16 sites in 2012.

Trait	'Dwarf Grey Sugar'	'Oregon Sugar Pod 2'	Same
Germinated best	44 %	13 %	44 %
Healthier plants	38	31	31
Matured earlier	64	36	0
Higher yields	43	50	7
More attractive pods	50	36	14
Tasted better	23	54	23
<i>Preference</i>	<i>40</i>	<i>60</i>	
<i>Recommend to others</i>	<i>44</i>	<i>56</i>	
<i>Overall rating¹</i>	<i>6.64</i>	<i>7.00</i>	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Pods were nice and tasted good.
- Plants were healthy.
- I would not plant again as flavor was not great in either variety.
- Plants were healthy with equal size and development, but then grasshoppers ate them.

Comments on 'Dwarf Grey Sugar' Pea

- Grew to 48 inches with lovely pink red flowers. 'Oregon Sugar Pod 2' grew to 36 inches. Vines produced a lot of pods in a short time. The pods were small and uniform; classics. Had a floral taste and became tough in a hurry.
- Seedlings came up first and the vines were about twice as tall—recommend a trellis! Continued to produce into August. Pods are more uniform, smaller and more tender. Flavor was similar but texture was a little better.

- Tasted sweeter.
- The pods were softer. They were sweeter.
- Emerged quicker. Vines grew much taller. Smaller pods.
- Germination was approximately 20% better. I had some problems with its vines browning along the bottom.
- Seemed more like a sugar snap pea.

Comments on 'Oregon Sugar Pod 2' Pea

- Ready on July 2; 1 week earlier than 'Dwarf Grey Sugar'. Vines produced over a longer period. Pods were larger and had to be cut for stir-frying. Pods were tender, sweet and lasted well on the vines. Its shorter vines required less fencing. The vines produced well. Taste is incomparable! The best snow peas ever!
- This was a great variety! Table ready faster. Best taste and crisper.
- Sweeter.
- Better tasting pods. Pods were slow to fill up.
- Tasted better but the vines died quicker.
- Nice large pods. More yield.
- Larger pods; larger yields; more vigorous plants.
- Its peak yield was 1 week earlier. Vines were done in July while those of 'Dwarf Grey Sugar' kept going. Pods tend to get thicker and curl—not real attractive.

Conclusions

'Oregon Sugar Pod 2' pods were more delicious and stayed slim for a long time in the garden. Its vines were more productive. 'Dwarf Grey Sugar' matured earlier; its purple blossoms produced small but uniform and attractive pods.

Trial 33. Pumpkin, Jack-O'-Lantern

Varieties (information from seed catalogs)

'Magic Lantern'

115 days. Space-saving vines produce dark orange pumpkins. Pumpkins average 16–24 pounds.

'Racer Plus'

85 days. Blocky, deep orange pumpkins. Vines are compact (good for smaller gardens) and resist diseases. Pumpkins average 14–18 pounds and have long, thick handles.



Data

Data were collected at 23 sites in 2011 and 22 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Magic Lantern'	'Racer Plus'	Same	'Magic Lantern'	'Racer Plus'	Same	'Magic Lantern'	'Racer Plus'	Same
Germinated best	43 %	24 %	33 %	14 %	27 %	59 %	29 %	25 %	46 %
Healthier plants	24	18	59	14	33	52	19	25	56
Matured earlier	31	50	19	19	57	24	25	53	21
Higher yields	41	53	6	33	52	14	37	53	10
More attractive fruits	36	21	43	33	19	48	35	20	45
Tasted better	50	50	0	0	33	67	26	42	33
<i>Preference</i>	50	50		45	55		48	52	
<i>Recommend to others</i>	67	56		59	77		63	66	
<i>Overall rating¹</i>	6.18	5.82		6.77	7.27		6.47	6.53	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- I really liked both of these varieties. The pumpkins were all very nice jack-o'-lantern pumpkins and had a nice shape and orange color.
- Neither germinated.
- Enjoyed lots of pumpkins.
- Both are good performers. Yields were very good. The vines of both spread more than those of 'Neon', my favorite.
- Beautiful plants and lots of pumpkins!
- Drowned out on two different planting dates.
- Only one seed came up.
- None matured. Wet spring and hailstorm in July.

2012

- Both have healthy vines. Ten of our 11 pumpkins were perfect for jack-o'-lanterns.

- Both produced one very large and several large and medium to smaller fruits. All were very nice.
- Both turned orange in July. Plants stayed healthy until frost.
- Both varieties had orange pumpkins in early August. Both varieties produced well.
- The grandkids liked both kinds for making jack-o'-lanterns.
- My vines were very slow to set on fruit. Grandsons kept looking for pumpkins. Took forever but then they grew rapidly. Pumpkins were small. Hail damaged the vines and pumpkins.
- Healthy plants.
- Both produced really small pumpkins (three pounds). I don't like either variety.
- Both germinated nearly 100%. Vines were healthy and withstood drought conditions.
- They both did well this year—early maturation.
- Poor germination. Both had borers in stems.

Comments on 'Magic Lantern' Pumpkin

2011

- Five plants came up and produced a total of 11 pumpkins (compared to one plant and 10 pumpkins for 'Racer Plus').
- Only 1 plant germinated. It produced 6 pumpkins. Fruits were nice looking and made a great pie. The color of its flesh is more yellow than orange. My son received grand prize at the Bowman County Fall Harvest for his pumpkins. More and riper fruit.
- Nice round fruit; perfect for jack-o'-lanterns.
- Its pumpkins looked better. I liked its smoother look.
- Plant was pretty healthy. Lots of blossoms.

2012

- Its pumpkins were a little darker, richer in color, and skinnier. They were larger (14–18 pounds compared to 10–13 pounds for 'Racer Plus').
- More pumpkins. They were bigger (average 14.1 pounds compared to 13 for 'Racer Plus'). One pumpkin weighed 26 pounds. Brighter orange. Stems were brighter green. It has a narrower shape. The pumpkins are shiny and smooth—better for carving on.
- I like the huge pumpkins (some were 30 pounds compared to 13 pounds for 'Racer Plus'). I need the bragging rights that you've grown the bigger jack-o'-lanterns.
- We harvested 11 quality pumpkins; 7 of these were 'Magic Lantern' pumpkins.
- Performed better under our drought conditions. Plants were healthier. Slightly better yields; although neither variety yielded well. Pumpkins were heavier (10 pounds versus 8 pounds for 'Racer Plus') and had a rich, dark color.
- Pumpkins were generally bigger (40 inches in circumference compared to 30 inches for 'Racer Plus') and made really nice jack-o'-lanterns for carving. The rind was darker orange and had a rougher texture.
- More consistent size and shape. Larger fruit (circumference of 34 inches and bigger compared to 20–24 inches for 'Racer Plus'). Vines were healthier.
- Vines were more compact.
- Were orange in color sooner.
- Pumpkins were brighter orange, nice and round.

Comments on 'Racer Plus' Pumpkin

2011

- Always a very nice size consistency for jack-o'-lanterns that aren't too large and a beautiful color.
- Germinated slightly better and matured slightly earlier and yielded a little better.
- Plants were greener. Matured a week earlier. We preferred it for its nice large size and bright orange color; pumpkins were more uniform.
- More uniform in size. Nice for baking and to use for pies, desserts, etc.
- Pumpkins were rounder and easier to carve.
- Fruits were more uniformly round but subject to more problems such as rot.
- More fruit (34 compared to 16), although they were smaller. They were nicely shaped.

2012

- 'Racer Plus' fits its name! The vines really take off and produce lots of flowers—not all "take", but some did. First fruits were set 2 weeks earlier. Nice, big, dark green leaves.
- More uniform for shape and size. Fruits averaged 7 pounds while 'Magic Lantern' averaged 11 pounds).
- Larger plants. More pumpkins per plant. Slightly better overall.
- Bigger fruits (average circumference 37 inches compared to 32 inches for 'Magic Lantern').
- Very uniform pumpkins. Earlier maturing—almost all were orange before frost. Pumpkins are shorter but have a larger circumference.
- More pumpkins and nicer average size.
- Set pumpkins first. We prefer its size and color.
- Plants showed less browning and were taller.
- Tolerated the dry weather better. Bigger pumpkins (average of 7.5 pounds compared to 4 pounds for 'Magic Lantern') and better yield. Better suited to our weather conditions.
- Germinated and grew better in a dry growing season. Pumpkins averaged 8–10 pounds.
- Pumpkins had a nice shape and were pretty uniform in size, too.

Conclusions

'Racer Plus' was earlier and more productive. Its pumpkins were more uniform and rounder. The pumpkins of 'Magic Lantern' were bigger (about 14 pounds versus 10 pounds for 'Racer Plus'), darker orange and more upright in shape.

Trial 34. Radish, Red

Varieties (information from seed catalogs)

'Cherry Belle'

23 days. Bright cherry red, round roots. Flesh is pure white, crisp, and mild. Its short tops are good for bunching. Tolerates poor soils. Former All-America Selections Winner.

'Rover'

21 days. Newer variety with very smooth, dark red skin. Flesh is crisp and mild. Easily grown.



Data

Data were collected at 4 sites in 2011 and 10 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Cherry Belle'	'Rover'	Same	'Cherry Belle'	'Rover'	Same	'Cherry Belle'	'Rover'	Same
Germinated best	0 %	50 %	50 %	40 %	10 %	50 %	29 %	21 %	50 %
Healthier plants	0	50	50	30	10	60	21	21	57
Matured earlier	0	100	0	40	40	20	29	57	14
Higher yields	0	100	0	40	50	10	29	64	7
More attractive roots	0	100	0	40	50	10	29	64	7
Tasted better	0	75	25	30	40	30	21	50	29
<i>Preference</i>	0	100		50	50		36	64	
<i>Recommend to others</i>	25	75		70	50		57	57	
<i>Overall rating¹</i>	4.33	8.00		6.90	6.90		6.17	7.21	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- All tops—not much under ground (sowed May 18).
- Both germinated at 95% or higher. Both had healthy green tops.

2012

- Similar germination. The roots of both were crisp and tender.
- My husband loved both!

Comments on 'Cherry Belle' Radish

2011

- Flavor was more mild and sweet.
- Very inferior.

2012

- The better radish by far. Much better germination. Good large plants; large roots. Higher yields by far. A large crop of radishes with mild taste.
- Better germination (100% within 7 days compared to 60% within 8 days for 'Rover'). Roots were larger and had a spicy aftertaste, which I prefer.
- Earlier emergence; larger leaves; an overall better plant.
- More consistent size and shape.
- They worked well with my soil. Radishes were sweeter and we enjoyed lots of them.
- More stalk than radish.

Comments on 'Rover' Radish

2011

- Had a few nice radishes—'Cherry Belle' didn't have any before it went to seed.
- Ready to eat earlier. Bigger radishes. The roots were round and bright red compared to the longer and not as pretty roots of 'Cherry Belle'. Flavor was a more distinct radish taste.
- In this difficult season, 'Rover' produced well even in very wet conditions (sowed June 4).
- Bigger; thicker; not as bitter.

2012

- Earlier by three days. Produced twice as many roots. Very pretty round roots—very red. Roots were more uniform and generally larger. They didn't bolt as fast. The roots did not get woody as fast as 'Cherry Belle'. Its flavor had a little more "bite."
- Germinated first and at a higher percentage. Plants appeared healthier. Faster growth and much higher yield. Wonderful.
- Very uniform size. Produced a more uniform root.
- Bigger roots and yield.
- Better tasting.
- Tasted hot.

Conclusions

'Rover' matured earlier and had higher yields. Its roots were brighter red, more uniform and usually larger. Gardeners preferred the crisp taste of its pure white flesh, too. 'Cherry Belle' was good—but 'Rover' was just a little bit better.

Trial 35. Rutabaga

Varieties (information from seed catalogs)

‘American Purple Top’

90 days. Large, 6-inch roots are tan with purple tops. Flesh is yellow, mild, and fine grained. High yields. Stores well.

‘Laurentian’

95 days. Popular Canadian variety. Creamy yellow base with deep purple tops. Flesh is pale yellow, sweet, and smooth in texture.



Data

Data were collected at 10 sites in 2012.

Trait	‘American Purple		Same
	Top’	‘Laurentian’	
Germinated best	10 %	30 %	60 %
Healthier plants	43	29	29
Matured earlier	14	29	57
Higher yields	29	29	43
More attractive roots	43	43	14
Tasted better	60	20	20
<i>Preference</i>	57	43	
<i>Recommend to others</i>	56	33	
<i>Overall rating¹</i>	6.00	5.22	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both are very good. Very sweet. My neighbors are enjoying them too.
- Both did well and tasted good.
- Neither variety produced any rutabagas. Just made a long narrow root.
- The roots were straight and full of maggots. Neither made bulbs.
- I ate none—had a maggot infestation!
- Many small plants were eaten by flea beetles. So had to replant two weeks later. The tops were later eaten by cabbage worms and flea beetles. Got powdery mildew towards the end of the season.

Comments on ‘American Purple Top’ Rutabaga

- Fuller, bigger leaves. Much bigger heads. Tasted better.
- Tasted better—milder.
- Richer color.
- Bigger, better-shaped roots.
- Has a rounder shape.

Comments on ‘Laurentian’ Rutabaga

- Tastier—better for pickling.
- Larger roots (twice as big) but overall had similar yield. Roots were smoother. Had a really strong bitter taste.
- Less susceptible to flea beetles.

Conclusions

Both varieties suffered severe damage from flea beetles and a wide array of other insect pests. ‘American Purple Top’ was preferred for the milder yellow flesh of its roots. Yields were comparable with those of ‘Laurentian’.

Trial 36. Spinach, Savoy Leaf

Varieties (information from seed catalogs)

'Donkey'

38 days. Dark green, crinkly leaves for spring sowing. Slow to bolt. Outstanding disease resistance.

'Tye'

40 days. The standard savoy (crinkly) leaf spinach. Very slow to bolt. Upright habit makes harvesting easy.

Data

Data were collected at 33 sites in 2012.

Trait	'Donkey'	'Tye'	Same
Germinated best	30 %	27 %	42 %
Healthier plants	21	21	59
Matured earlier	28	21	52
Higher yields	31	28	41
More attractive	37	23	40
Tasted better	30	13	57
<i>Preference</i>	61	39	
<i>Recommend to others</i>	73	67	
<i>Overall rating¹</i>	7.34	6.88	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both looked and tasted good. I would grow both again.
- Both grew well and produced more spinach than I could eat.
- Both had good yield.
- They did great and continued to grow well and produce until the heat got to them in July.
- Great taste—no bolting. Both were excellent and we were able to cut off spinach into August. This has never happened with other varieties as they always bolted!
- These two varieties grew almost identical for me. Both did very well in all categories and we took multiple cuttings from the plants.
- Both had tender leaves early in the season but the leaves became coarse possibly due to hot dry summer.
- Each of them matured early and the leaves had holes in them. I froze some but could not keep up with them. All the leaves had holes in them.



- Neither variety germinated well. The plants that did germinate were productive. Want to try them again next year.
- Enjoyed both of them.
- None of the seeds even came up (sowed May 1)—maybe too dry?
- Decent germination (both around 56%).

Comments on 'Donkey' Spinach

- Leaves were larger and had more flavor.
- Leaves are bigger and thicker, which I prefer.
- We liked its leaf shape better.
- The same number of plants for each variety came up, but more of 'Donkey' survived. They stayed healthier and edible longer. We prefer its taste, too.
- Better germination and bigger harvest.
- Better germination (90% in 10 days compared to 75% in 12 days for 'Tye').
- A slightly milder taste.
- We prefer its milder taste.
- Had a stronger taste, which I didn't like as well.
- No bitterness.
- Its greener leaves looked better in salads.
- Bolted right away (sowed second week of May).
- Tended to want to go to seed sooner.
- Showed 75% germination, compared to 45% for 'Tye'. Stronger, nicer spinach flavor; kids described it as tasting like peas; we prefer it.

Comments on 'Tyee' Spinach

- Much better germination. Matured earlier by a few days. Picked longer.
- Grew thicker.
- Plants were bigger and fuller.
- Seemed healthier; bigger plants.
- Heavier leaves; larger veins.
- Plants started off a little stronger. Leaves were bigger with better texture.
- I liked this for being early and staying less bitter.
- Slower to bolt.
- Slower to go to seed.
- Bolted faster.
- Bolted a few days earlier.
- Bolted one week earlier. Leaves are more delicate.
- Milder flavor.
- Poor germination (sowed April 30).
- Slow to germinate but did well once came up.
- Leaves were limper and tasted bitter.

Conclusions

Varieties were very similar. Both produced lots of delicious spinach and resisted bolting. Most gardeners preferred 'Donkey'. They liked its deep green color and rounded leaf shape. It matched, if not exceeded 'Tyee' in taste qualities.

Trial 37. Squash, Summer Scallop

Varieties (information from seed catalogs)

'Sunburst'

51 days. Early and productive. The bright, tender fruits have succulent buttery flavor. Vigorous plant. 1985 All-America Selections winner.

'Y-Star'

48 days. Tender, yellow scallops with pale green stars on the end. An organic variety with an open plant habit for easy harvesting.



Data

Data were collected at 4 sites in 2012.

Trait	'Sunburst'	'Y-Star'	Same
Germinated best	50 %	25 %	25 %
Healthier plants	75	0	25
Matured earlier	50	50	0
Higher yields	25	50	25
More attractive fruits	25	25	50
Tasted better	50	0	50
<i>Preference</i>	75	25	
<i>Recommend to others</i>	100	75	
<i>Overall rating¹</i>	8.00	7.75	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both germinated well. Both were prolific yielders. No mold issues.
- We had huge (excessive) yields with no irrigation.
- Plants were healthy.
- Both varieties germinated at approximately 70%.

Comments on 'Sunburst' Squash

- Germination was worse (45% compared to 85% for 'Y-Star'). Started harvesting 1 week earlier. Fruits were larger; its superior texture (softer flesh) cooked faster and worked better in recipes.
- Fruits were uniform in size. Tasted great after grilling.

Comments on 'Y-Star' Squash

- More fruits, but they were smaller and harder to use.
- Fruits had great color—well liked in our Community Supported Agriculture (CSA) group.

Conclusions

'Sunburst' and 'Y-Star' were productive and their fruits were colorful. Gardeners liked both varieties, but most preferred 'Sunburst'. Its vines were especially healthy and the tender flesh of its fruits cooked faster and worked better in recipes.

Trial 38. Squash, Summer Zucchini

Varieties (information from seed catalogs)

'Spineless Beauty'

43 days. The few spines on its vines make this variety easy to harvest. Medium-green, uniform, 8-inch fruits. Plants have an open habit, and produce high yields over an extended season. Delicate flavor. Extra early.

'Spineless Perfection'

45 days. Medium green zukes twist easily from spineless, open plants. Vines resist diseases, leading to a long and productive harvest.



Data

Data were collected at 18 sites in 2012.

Trait	'Spineless Beauty'	'Spineless Perfection'	Same
Germinated best	22 %	11 %	67 %
Healthier plants	40	13	47
Matured earlier	59	18	24
Higher yields	47	6	47
More attractive fruits	41	6	53
Tasted better	12	0	88
<i>Preference</i>	72	28	
<i>Recommend to others</i>	94	61	
<i>Overall rating¹</i>	7.83	6.89	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Large quantity of zucchini this year. I was very impressed with both varieties!
- Both produced well. Both produced long, slender fruit.
- Both were slow to germinate (sowed May 14). Both grew vigorously. Both produced more fruit than needed. Both were wonderful for baking and grilling.
- Delightful to watch and grow. Fun to harvest; harvested nearly all summer.
- Both germinated well. Plants were healthy until they got powdery mildew in late fall. They yielded a lot. They are extremely similar. Easy to grow. The only challenge was to harvest the zucchini when they are young.
- Both had 100% germination and were prolific in production.
- Neither had attractive fruits.

Comments on 'Spineless Beauty' Squash

- The zucchini looked nicer and the plants didn't take over the garden as much.
- Fruits were lightly speckled, very tender, excellent flavored. My neighbors agreed.
- Matured 5 days earlier and the skin was more tender. It produced longer into the fall giving me even more chance to use it.
- Produced like crazy. Fruits had a thinner skin.
- It matured earlier and was a very healthy plant.
- Strong plants; hearty produce; multiple produce.
- First to produce zukes and a longer harvest.
- Produced more fruits. Vines were full of blossoms when frost struck.
- Slowed down when it got powdery mildew.

Comments on 'Spineless Perfection' Squash

- Matured earlier, but the harvest season of 'Spineless Beauty' went longer.
- More zukes over a longer period. Tasted good.
- Fruit was a very dark green and tapered. It seemed to have more trouble with the fruit rotting when very small.
- Its blossoms tended to be large and engulfed the end of the fruit.
- Plants were larger.

Conclusions

The vines of 'Spineless Beauty' produced earlier and produced more zucchini. Its medium green, lightly speckled fruits were attractive and tender. 'Spineless Perfection' matched it for taste but showed no superior qualities.

Trial 39. Watermelon, Red

Varieties (information from seed catalogs)

'Blacktail Mountain'

85 days. Deep scarlet flesh is crisp and juicy. Developed in Idaho and matures early. Solid dark green rinds. Melons grow 6–12 pounds.

'Sweet Dakota Rose'

85 days. Sweet, bright red flesh has very few seeds. Developed in North Dakota and adapted to its short summer. Melons grow 10–20 pounds.



Data

Data were collected at 30 sites in 2012.

Trait	'Blacktail Mountain'	'Sweet Dak. Rose'	Same
Germinated best	21 %	28 %	52 %
Healthier plants	15	27	58
Matured earlier	46	38	17
Higher yields	33	38	29
More attractive melons	29	43	29
Tasted better	26	42	32
<i>Preference</i>	45	55	
<i>Recommend to others</i>	63	54	
<i>Overall rating¹</i>	6.45	5.86	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both had 100% germination. There were 8 plants of each variety. We got 21 melons of 'Sweet Dakota Rose' and 15 melons of 'Blacktail Mountain'. Our family voted on which tasted better and the results were a tie!
- Both had a nice uniform shape.
- Both were delicious.
- Both tasted good.
- Survived the drought without watering. All the melons tasted good.
- Neither variety matured.
- Neither variety produced melons or even flowered.
- Not many plants germinated.
- Neither variety produced a lot. The fruits were small and tasteless and had a lot of seeds.
- North Dakota isn't great for growing watermelons. I haven't had any luck in the last 3 years.

- No ripe melons. Very dry conditions.
- Neither produced very large edible fruits due to lack of precipitation and waiting too long to begin watering. They never recovered from the early moisture stress.
- Only one plant germinated (sowed May 15).

Comments on 'Blacktail Mountain' Watermelon

- I prefer its dark green rind.
- Its dark green rind showed its imperfections more. After harvest its middle went soft sooner.
- I personally like its looks (unique) although the melons were smaller. Flesh was near red; seeds were ticklike and not as many.
- More of its plants grew and were healthy. Produced several melons (compared to only 1 melon for 'Sweet Dakota Rose'). The melons were small but very tasty.
- Good flavor and lots of fruit.
- One baseball-sized melon.
- More prolific (2 to 1 margin). Much sweeter.
- Matured about a week earlier.
- Matured a month earlier. Melons had more seeds and stronger flavor.
- Matured earlier; melons were round and 6 inches across.
- Vines were a little more wind tolerant.
- Better taste.

Comments on 'Sweet Dakota Rose' Watermelon

- This is the second year I have grown this variety and both times we harvested melons over 20 pounds. Our biggest melon this year was 36 pounds and many were 20 pounds. In comparison, the biggest 'Blacktail Mountain' melon was 5 pounds. 'Sweet Dakota Rose' is sweeter and had nice, round, uniform melons. Its vines were much healthier.
- Germinated 50% better. Plants were taller and thicker and produced 40% more yield. Its melons were larger and their striped rind look more like the variety we buy in stores.
- Very juicy and sweet. Less fruit but good eating. Fruits weighed about 5 pounds.
- Mom prefers this variety. I like its "commercial" look and it had more melons/plant.
- Larger melons.
- Higher yields (3–4 melons per plant compared to 2 for 'Blacktail Mountain'). Held better after ripening.
- Fruits were sweeter.
- Produced well; stored well; not as many seeds. Big beautiful melons.
- Melons were bigger (football size). More seeds than expected.
- Flesh was pale pink and full of seeds.
- Did not germinate (sowed May 16).

Conclusions

'Sweet Dakota Rose' melons were more than twice as big (15 pounds). Its flesh was sweet and more flavorful. More gardeners recommended 'Blacktail Mountain'; it was earlier and more reliable. Neither variety was very productive.

Trial 40. Watermelon, Red Large

Varieties (information from seed catalogs)

'Legacy'

85 days. Flesh is red, crisp, and very sweet. Reliable producer. Striped melons weigh up to 22 pounds. Large seeds.

'Verona'

80 days. The earliest and best tasting of the 'Black Diamond' types. Melons average 20 pounds with dark green, smooth rinds. Flesh is firm and sweet.



Data

Data were collected at 6 sites in 2011 and 13 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Legacy'	'Verona'	Same	'Legacy'	'Verona'	Same	'Legacy'	'Verona'	Same
Germinated best	83 %	17 %	0 %	54 %	15 %	31 %	63 %	16 %	21 %
Healthier plants	50	17	33	40	10	50	43	12	45
Matured earlier	50	17	33	56	33	11	54	28	18
Higher yields	67	17	17	80	20	0	76	19	5
More attractive melons	40	40	20	50	30	20	47	33	20
Tasted better	40	40	20	88	0	13	73	13	15
<i>Preference</i>	67	33		70	30		69	31	
<i>Recommend to others</i>	67	50		82	36		77	40	
<i>Overall rating¹</i>	5.83	4.17		7.44	4.89		6.93	4.66	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Both seemed healthy and grew well. Neither ripened very well. Set a lot of melons.
- Hard to determine when melons are ripe.
- Only 1 seed germinated (sowed June 2). No melons were produced on this 'Legacy' plant.

2012

- Both had healthy plants.
- Neither did terrific. Their melons were sweet but very small.
- Seedlings froze and died. (sowed May 18).

Comments on 'Legacy' Watermelon

2011

- Better in every way.
- Earlier.
- Nearly all seeds germinated.
- Germinated much earlier. Vines spread all over. Its first melon ripened 1 month earlier than that of 'Verona'. Normal looking (striped) rinds. We took it to our celebration.

2012

- Melons were earlier, larger, and well proportioned.
- Slightly (20%) better germination. Produced 5 more melons. Slightly better taste. When growing melons, you want good germination, taste and yield—this one had that.
- Germinated 1 week earlier. Produced twice as many melons. Rind has beautiful stripes. Flesh is juicier and sweeter—excellent taste.

More Comments on 'Legacy' Watermelon

- Germinates earlier than other watermelon. Almost 100% germination. It grows and produces well. We harvested 7 melons. My daughter says the melons are “pretty”—bright green outside and nice red inside. The melons also had a 10+ day storage time and still showed no signs of decay.
- More watermelons and they tasted better.
- Ripened earlier and produced more melons.

Comments on 'Verona' Watermelon

2011

- Only 3 melons ripened.
- I liked the looks of the dark green 'Verona'. It was larger than 'Legacy'. I think on a good year the 'Verona' would be the biggest and prettiest melon.

2012

- Melons weighed 25–30 pounds—tasted awesome.
- A unique dark green, round melon.
- Love the dark shininess of the fruits.
- Matured 1 week earlier.
- Did not ripen before frost.
- Never produced melons.
- Didn't ripen soon enough.

Conclusions

'Legacy' produced decent crops of large (20 pound), well-shaped, brightly striped melons. Its flesh was sweet and juicy. The dark green rind and extra large size of 'Verona' were appealing, but most melons did not ripen before frost.

Trial 41. Watermelon, Yellow

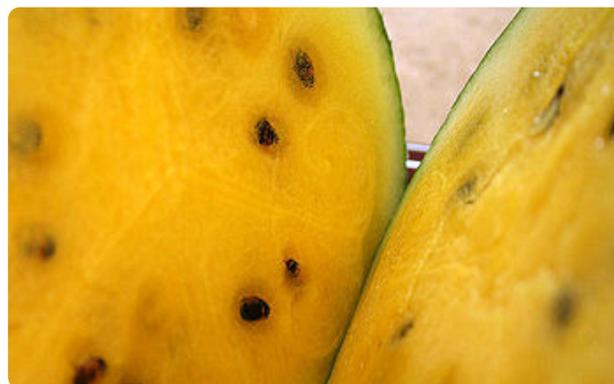
Varieties (information from seed catalogs)

‘Early Moonbeam’

78 days. A non-hybrid selection from ‘Yellow Doll’. Bright yellow flesh with sweet taste. Striped, round melons weigh 5–8 pounds.

‘Sweet Siberian’

80 days. Siberian heirloom introduced by Oscar H. Will Seed Co. of Bismarck, ND. Very sweet, apricot-colored flesh. Ten-pound melons.



Data

Data were collected at 12 sites in 2012.

Trait	‘Early Moonbeam’	‘Sweet Siberian’	Same
Germinated best	33 %	17 %	50 %
Healthier plants	33	11	56
Matured earlier	50	25	25
Higher yields	56	44	0
More attractive melons	78	22	0
Tasted better	25	50	25
<i>Preference</i>	56	44	
<i>Recommend to others</i>	80	80	
<i>Overall rating¹</i>	6.22	6.33	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both tasted yummy. Their melons do not grow to “store size.”
- Both grew great. They were awesome! They yielded about the same—wonderfully. They tasted magnificent and our neighbors even asked where we got the seeds.
- Plants were healthy and both varieties tasted good. Would grow both again.
- Tasted similar.
- I don’t rate either very high. I would need another year of ‘Early Moonbeam’ to see how it was. ‘Gold Strike’ and ‘Yellow Doll’ are more dependable.
- Neither was spectacular.
- Plants grew 2 inches tall and then died.

Comments on ‘Early Moonbeam’ Watermelon

- Its biggest melon was 4 pounds. Very sweet taste; I liked it better than the taste of ‘Yellow Doll’.
- Early, produced good yields and was consistent in size and flavor.
- Melons were more attractive. Produced more melons.
- I liked its color and flavor of flesh. I liked the color and design of the rind.
- Melons were rounder. The rind was brighter and had stripes on them. Looked like a dinosaur egg.
- It grew better and produced more melons.
- We prefer its stripes over the solid green rind of ‘Sweet Siberian’.
- The texture of its flesh had the consistency of foam—yuck!
- Germinated better, but unfortunately they froze because of a late frost in spring (sown May 13).

Comments on ‘Sweet Siberian’ Watermelon

- Melons were bigger and we had more of them. It has more flavor and is sweeter. Plants were more vigorous and healthier.
- Healthier plants, larger yield (we harvested 8 large melons), Significantly sooner. The melons were large and oval; its delicious taste was a big hit with us.
- More flavor; sweeter.
- Its flesh color ranged from pale orange to almost red with the flavor varying according to melon.

More Comments on 'Sweet Siberian' Watermelon

- Prefer its taste. The long green shape was easy to tell from other melons. Also, its melons were larger than most yellow-flesh melon varieties. Good crisp flesh.
- I was surprised at the color of the melon—expected it to be more yellow inside.
- Had a hard time getting it to germinate. Upon replanting, it did grow some, but mainly just survived. It did have the first watermelon to form, but it was a small and funny tasting watermelon.
- Never produced any melons.

Conclusions

'Early Moonbeam' matured earlier and produced more melons. 'Sweet Siberian' melons were almost twice as big (10 pounds) and gardeners enjoyed its apricot-color flesh. Gardeners liked both varieties, but neither was exceptional.

Trial 42. Basil, Italian

Varieties (information from seed catalogs)

'Genovese'

70 days. Classic flavor and appearance. Dark green leaves about 3 inches long.

'Italian Large Leaf'

80 days. Medium green, 4-inch-long leaves. Sweeter than 'Genovese'.

Data

Data were collected at 19 sites in 2012.

Trait	'Genovese'	'Italian Large Leaf'	Same
Germinated best	32 %	42 %	26 %
Healthier plants	24	29	47
Matured earlier	24	47	29
Produced higher yields	35	12	53
Looked more attractive	24	41	35
Tasted better	13	20	67
<i>Preference</i>	44	56	
<i>Recommend to others</i>	72	72	
<i>Overall rating¹</i>	6.59	7.29	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Plants flourished. Both tasted and smelled wonderful.
- I liked both—very similar performance.
- Great yields on both once established.
- Began picking from both on the same day. I really could tell very little difference between the varieties.
- We didn't notice much of a difference in flavor.
- Germination wasn't great. Both tasted a little bitter. This was a poor year for me and basil.

Comments on 'Genovese' Basil

- Plants were leggy but its leaves had a more "commercial" appearance. Leaves were a bit more tender.
- More flavorful.
- Had a better start. Plants were bushier. The leaves were easier to use, easier to harvest, more tender.



- Produced a lot of basil (three times more than 'Italian Large Leaf').
- Bolted one week later. Despite 15% less germination, its plants were 50% taller, leading to more leaves.

Comments on 'Italian Large Leaf' Basil

- Sturdier and bigger plants. Matured 2 weeks earlier. Both varieties produced a lot, but 'Italian Large Leaf' produced more.
- Bigger, darker leaves with a nice shine. Plants were larger. Good flavor. Leaves dry well and are fragrant. Slower to bloom. .
- Plants branched nicely when pinched, were less persistent in producing blossoms.
- Tasted better to me. Not so "in your face" smell and taste. Milder. Liked it better fresh.
- Plants are fuller, taller.
- Better germination (88% compared to 60% for 'Genovese'). Seedlings were more vigorous. Matured one week earlier but also wanted to flower out sooner. Its compact growth habit was more attractive.

Conclusions

'Italian Large Leaf' showed strong vigor, leading to the growth of taller, fuller plants. It matured earlier. Gardeners liked its mild flavor as much as the classic clove-like flavor of 'Genovese'. 'Genovese' was tender; well suited for cooking.

Trial 43. Basil, Lemon

Varieties (information from seed catalogs)

'Mrs. Burns'

62 days. Intense flavor. Bright green leaves. Heirloom from New Mexico.

'Sweet Dani'

65 days. Extremely vigorous plant allows for multiple harvests. Strong fragrance. All-America winner.

Data

Data were collected at 10 sites in 2012.

Trait	'Mrs. Burns'	'Sweet Dani'	Same
Germinated best	20 %	30 %	50 %
Healthier plants	25	38	38
Matured earlier	11	11	78
Produced higher yields	38	38	25
Looked more attractive	44	22	33
Tasted better	22	22	56
<i>Preference</i>	40	60	
<i>Recommend to others</i>	80	80	
<i>Overall rating¹</i>	8.33	8.22	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both did exceedingly well. Lots of plants and all of them were very healthy.
- Both prolific. Never bolted. The kids ate the leaves of both varieties readily—they loved it!
- Both were prolific plants. Some are 3-feet high and as big around.
- We could not tell any difference. We loved the smell of them!
- Plants did not survive the summer in our little garden.



Comments on 'Mrs. Burns' Basil

- We gave lots to neighbors and all thought 'Mrs. Burns' was best. They would stand at the garden and nibble and then take some home to cook. The taste was excellent. It made wonderful pesto as well as using it fresh. Interestingly, 'Sweet Dani' was not as sweet.
- Bigger and healthier plants!
- Seemed heartier.

Comments on 'Sweet Dani' Basil

- Grew better in my garden. Very full, productive plants.
- Sweeter, softer leaves.
- It sprouted first.

Conclusions

Both varieties were very healthy and produced lots of leaves with intense lemon flavor. They rated similarly for most traits including yield and flavor. The bright green leaves of 'Mrs. Burns' made it an attractive plant.

Trial 44. Basil, Purple

Varieties (information from seed catalogs)

'Amethyst Improved'

60 days. Stunning, deep purple leaves. True 'Genovese' flavor.

'Red Rubin'

77 days. Purple leaves with a copper tinge. 'Italian Large Leaf' type. Vigorous plants and high yields.

Data

Data were collected at 9 sites in 2012.

Trait	'Amethyst Improved'	'Red Rubin'	Same
Germinated best	33 %	11 %	56 %
Healthier plants	33	11	56
Matured earlier	11	22	67
Produced higher yields	38	13	50
Looked more attractive	38	25	38
Tasted better	25	0	75
<i>Preference</i>	67	33	
<i>Recommend to others</i>	67	44	
<i>Overall rating¹</i>	6.56	6.33	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both had beautiful purple color. Prolific. Really didn't see much difference between these varieties. Both had good yield which made for numerous batches of pesto.
- Plants were very healthy. Both varieties resisted bolting better than my normal basil planted right next to it. Yields were prolific. Leaves looked nice. Both very "basilly" in taste; although I'm not a basil pro when it comes to taste.
- Germination was spotty for both (sowed June 3). Aroma was similar for both.
- Neither germinated well (sowed May 30). Later replanted and these did better once the soil was warmer. We made pesto out of the basil.
- Neither variety did very well. The green basil in my garden produced bigger plants and higher yields.
- Only 2 plants of each variety came up. They had lovely purple leaves. Good tasting.
- Very poor growth in early stages.



Comments on 'Amethyst Improved' Basil

- It had more leaves and continued to grow. More taste.
- Its plants seemed healthier.
- Larger leaves.
- Larger plant.
- This variety dried well.

Comments on 'Red Rubin' Basil

- Color was more consistent. Blossoms were prettier and leaves shinier. Attractive shape of plant and leaves.
- Plants were larger and more attractive. Also went to seed first.

Conclusions

The varieties were comparable for most traits, including earliness, yield and taste. A slight edge went to 'Amethyst Improved' for its superior vigor at many gardens. Both varieties suffered from weak seedling growth at some sites.

Trial 45. Cilantro

Varieties (information from seed catalogs)

'Caribe'

52 days. Easy to grow and extremely slow to bolt. Used to enhance salsas and curries.

'Santo'

50 days. Slow-bolting, fast-growing strain preferred by many growers. Deep green leaves and aromatic seeds.

Data

Data were collected at 16 sites in 2012.

Trait	'Caribe'	'Santo'	Same
Germinated best	19 %	25 %	56 %
Healthier plants	20	7	73
Matured earlier	13	40	47
Produced higher yields	27	0	73
Looked more attractive	13	13	73
Tasted better	29	7	64
<i>Preference</i>	60	40	
<i>Recommend to others</i>	88	75	
<i>Overall rating¹</i>	8.07	7.53	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comment

- Plants were nearly identical in every respect. Both grew exceptionally well but rapidly went to seed.

Comments on 'Caribe' Cilantro

- Better overall flavor. Slower to bolt but produced more seeds. Brighter plants.
- More flavorful. Longer maturity.
- Very fragrant. Enjoyed the taste better in our fresh salsa this summer.
- Taller, fuller plants. Higher yield.
- A more robust plant.
- These varieties were very similar; however 'Caribe' germinated slightly better.



Comments on 'Santo' Cilantro

- I feel 'Santo' was a bit stronger in flavor, which I prefer.
- Liked the flavor. Could also be used as an ornamental—nice white blossoms and great fragrance.
- Nice plants. Full of leaves and eventually flowers. Nice looking, fragrant plants. Great flavor! This was my very first attempt at planting cilantro—I had to do some research on harvesting and using it. Made the best fresh salsa I've ever tasted!
- It lasted slightly longer before going to seed.
- Looked a little better.

Conclusions

Varieties performed similarly for all traits, including health, yield and taste qualities. 'Caribe' impressed gardeners with its robust plants and fragrant, flavorful leaves. 'Santo' grew quickly and gardeners enjoyed its flavor.

Trial 46. Dill

Varieties (information from seed catalogs)

'Bouquet'

65 days. Widely grown. Vigorous and easy to grow. Popular for its aromatic leaves and seeds.

'Dukat'

70 days. Produces more foliage before going to seed. Intense flavor. High yields, large umbels.

Data

Data were collected at 13 sites in 2012.

Trait	'Bouquet'	'Dukat'	Same
Germinated best	38 %	15 %	46 %
Healthier plants	45	9	45
Matured earlier	45	18	36
Produced higher yields	27	27	45
Looked more attractive	27	18	55
Tasted better	11	11	78
<i>Preference</i>	73	27	
<i>Recommend to others</i>	92	58	
<i>Overall rating¹</i>	8.18	7.27	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Poor germination. I don't have good luck with dill.

Comments on 'Bouquet' Dill

- Had large, flavorful heads. Stayed flavorful all summer and into the fall. We even dried some for fall and winter salads.
- Amazing variety! Plants of 'Dukat' seemed almost petite to me in size.
- Blew 'Dukat' out of the water.
- Lasted a little longer in the fall.
- Grew thicker.
- Matured faster.
- Superior germination (80% versus 20% for 'Dukat').



Comments on 'Dukat' Dill

- Very large heads. Wonderful taste—not overpowering. Used with salmon and other dishes. Neighbors like it for pickling.
- More side leaves, larger head at top.

Conclusions

'Bouquet' was impressive from germination through harvest. Its plants grew vigorously and matured earlier. Both it and 'Dukat' produced good yields of umbels and leaves. Gardeners liked the looks and flavors of both varieties.

Trial 47. Parsley

Varieties (information from seed catalogs)

'Forest Green'

75 days. Upright stems keep the dark green, curled leaves clean and easy to cut. Tolerates heat and repeat cutting.

'Giant of Italy'

75 days. Huge, flat leaves with rich flavor. Strong, vigorous plants. Heirloom from Italy.

Data

Data were collected at 11 sites in 2012.

Trait	'Forest Green'	'Giant of Italy'	Same
Germinated best	27 %	45 %	27 %
Healthier plants	10	50	40
Matured earlier	20	70	10
Produced higher yields	20	50	30
Looked more attractive	30	40	30
Tasted better	50	20	30
<i>Preference</i>	45	55	
<i>Recommend to others</i>	80	80	
<i>Overall rating¹</i>	7.40	7.80	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- I had these in pots on the deck and both could be decorative!
- Both looked good in the garden. They were hard to compare. One had a flat leaf while the other was curly.
- Both could be put in a flower bed for filler.
- Flavor was strong and delicious!
- Plants were very healthy.



Comments on 'Forest Green' Parsley

- Grew and matured faster. Leaves were fuller with better color. A more complex taste.
- Much more attractive in color and size. Its taste was much better.
- There was more to each plant and it was hardier.
- We like its taste better.
- Tasted old. Good garnish.
- Better germination (95% in 10 days compared to 75% in 12 days for 'Giant of Italy').

Comments on 'Giant of Italy' Parsley

- Sturdier plant. Better for eating with less washing. Stronger stems; easier to cut. Produced more, too. Darker green.
- Fuller and more leaves. An overall better parsley.
- Really good plants. It could be harvested several times.
- Better for use in recipes. Fresher taste. I'm taking my pot of this variety inside for the winter.
- Matured 3.5 weeks earlier. Produce a bit more.
- Grew better.
- Looked nice, but it was fragile.

Conclusions

'Giant of Italy' rated higher in all traits—except taste. The flat-leaf plants were sturdier, fuller and more productive. Many gardeners recommended the curled-leaf 'Forest Green' for its flavor.

Trial 48. Cosmos, Mix

Varieties (information from seed catalogs)

'Double Click'

110 days. Unique semi-double and double blooms. Late blooming. Great in garden and for cutting. Sturdy stems. Height 42 inches.

'Sensation'

80 days. Long-time favorite. Tall plants with single petals. Lacy foliage. Height 48 inches.

Data

Data were collected at 22 sites in 2012.

Trait	'Double Click'	'Sensation'	Same
Germinated best	27 %	27 %	45 %
Healthier plants	11	33	56
Bloomed earlier	61	11	28
More flowers	59	12	29
More attractive in garden	50	13	38
More attractive in vase	42	0	58
<i>Preference</i>	69	31	
<i>Recommend to others</i>	50	38	
<i>Overall rating¹</i>	5.22	3.94	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both were showy for different reasons: 'Double Click' for the pretty petals and 'Sensation' for color.
- Neither has bloomed!
- I'm not sure if it was our weather this year or the selections. Neither had a lot of flowers and they were not attractive plants. Very woody.
- Both were poor producers of flowers.
- Poor germination. Only a few flowers and they were of poor quality. Plants looked leggy. Poor heat tolerance.
- Neither variety germinated well. Too much foliage; they forgot to bloom. Most froze before blooming. The cat liked these plants more than I did.
- They bloom too late or not at all; neither is suitable for direct seeding.



Comments on 'Double Click' Cosmos

- Lovely flowers and lots of them.
- Flowered for several weeks before the first frost. In comparison, 'Sensation' didn't have buds until a week or so before the first frost.
- I liked its colors and the double petals.
- Has a heavy blossom and it falls over because the stem isn't strong enough.
- The few flowers I got were beautiful.
- Better germination and earlier flowers.
- Poor germination and yellowish plants. Didn't produce flowers until October.

Comments on 'Sensation' Cosmos

- Better bloomers and such a bright color.
- Thick foliage but almost no flowers. Very tall.
- Never produced flowers.
- Plants are tall and vigorous. Perhaps our extreme heat has prevented flowering.
- Its foliage was more attractive.
- Plants were dark green and attractive. Thicker. Hardier (survived the first frost). Not as many flowers.
- By far the superior plant but never produced flowers.
- Only one plant flowered.

Conclusions

'Double Click' bloomed earlier and produced more flowers. Most gardeners preferred it, yet still were hoping for more flowers. The plants of 'Sensation' were tall and vigorous but did not bloom at many sites.

Trial 49. Cosmos, White

Varieties (information from seed catalogs)

‘Sensation Purity’

80 days. Selection of ‘Sensation’. Delicate, pure white single blooms. Vigorous plants grow 48 inches.

‘Sonata White’

55 days. Wind-tolerant, bushy plants are loaded with pure white, single blooms. Height 24 inches.

Data

Data were collected at 6 sites in 2012.

Trait	‘Sensation Purity’	‘Sonata White’	Same
Germinated best	33 %	33 %	33 %
Healthier plants	67	33	0
Bloomed earlier	0	80	0
More flowers	20	40	40
More attractive in garden	20	40	40
More attractive in vase	0	67	33
<i>Preference</i>	<i>25</i>	<i>75</i>	
<i>Recommend to others</i>	<i>60</i>	<i>100</i>	
<i>Overall rating¹</i>	<i>6.60</i>	<i>7.80</i>	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Blooms were large and long lasting. Glow-in-the-dark white!
- Both looked great!
- Rabbits ate them, showing no preference for one variety over the other.



Comments on ‘Sensation Purity’ Cosmos

- Grew faster and 12–18 inches taller. As a bigger plant, it had more blooms.
- Bigger presence in the garden. Taller plants.
- A lovely plant.

Comments on ‘Sonata White’ Cosmos

- Bloomed 3–5 days earlier. Plant was bushier and shorter; I liked this better.
- Shorter wait for blooms.
- Germinated better. Plants looked good and grew better. Bloomed earlier.
- Sweet, hardy flower.

Conclusions

‘Sonata White’ bloomed earlier and produced more flowers. Every gardener in the trial recommended it. ‘Sensation Purity’ grew more vigorously but was very slow to bloom in many gardens.

Trial 50. Cosmos, Sulphur

Varieties (information from seed catalogs)

'Bright Lights'

75 days. Clusters of bright, semi-double gold and orange flowers. Height 40 inches.

'Polidor'

70 days. Radiant mix of red, gold and orange. Showy in mass plantings. Height 36 inches.

Data

Data were collected at 9 sites in 2012.

Trait	'Bright Lights'	'Polidor'	Same
Germinated best	33 %	11 %	56 %
Healthier plants	57	0	43
Bloomed earlier	50	33	17
More flowers	67	0	33
More attractive in garden	60	0	40
More attractive in vase	25	0	75
<i>Preference</i>	71	29	
<i>Recommend to others</i>	88	75	
<i>Overall rating¹</i>	8.88	8.38	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Even though it was dry, we had many flowers, even into September.
- They were both very good.

Comments on 'Bright Lights' Cosmos

- Plants were huge; bigger than 'Polidor'. Loaded with flowers. Earlier to bloom. I was very impressed with how fast it grew, as well as the the size and number of flowers. It seemed to really outshine 'Polidor'.
- Fuller plant. More greenery and bushy. Had nice green foliage until the hard frost.
- Produced a few more flowers.



Comments on 'Polidor' Cosmos

- More stems and the blooms ended earlier.
- Nicer blossoms.

Conclusions

'Bright Lights' was very impressive. Its plants were healthy and loaded with flowers. It bloomed earlier and more profusely. 'Polidor' also grew well and was well liked, but its performance was overshadowed by 'Bright Lights'.

Trial 51. Sunflower, Orange Cutting

Varieties (information from seed catalogs)

'Pro Cut Orange'

55 days. Very early. Single stem, pollenless type for cutting. Height 60–72 inches.

'Zohar'

55 days. Organic sunflower with orange petals surrounding dark centers. Pollenless. Height 48–60 inches.



Data

Data were collected at 3 sites in 2011 and 14 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Pro Cut Orange'	'Zohar'	Same	'Pro Cut Orange'	'Zohar'	Same	'Pro Cut Orange'	'Zohar'	Same
Germinated best	0 %	50 %	50 %	43 %	7 %	50 %	35 %	16 %	50 %
Healthier plants	0	50	50	43	14	43	35	20	44
Bloomed earlier	0	33	67	64	9	27	53	13	34
More flowers	0	0	100	54	23	23	44	19	37
More attractive in garden	33	33	33	33	17	50	33	20	47
More attractive in vase	0	0	100	20	40	40	16	33	51
<i>Preference</i>	67	33		77	23		75	25	
<i>Recommend to others</i>	67	100		85	69		82	75	
<i>Overall rating¹</i>	7.33	7.33		7.83	6.92		7.74	6.99	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- No general comments reported.

2012

- Both had good germination. Both were beautiful.
- I would have liked to see better germination. Nice looking plants. Bloomed at the same time. Size and heights of the flowers were the same. Flowers were beautiful and long lasting. The plants even held up well in the winds. These are good ND flowers that lasted well into the frost season.
- Both germinated equally well. Looked very similar. I wouldn't consider these very good cut flowers—looked great in the background of my flower bed. The birds loved the seedheads this fall. Didn't last long in the vase.
- Both had nice flowers.
- Germination was spotty for both varieties.

Comments on 'Pro Cut Orange' Sunflower

2011

- Plants showed more leaf disease.
- I prefer its better size of bloom.

2012

- Remarkably uniform. Every plant bloomed on the same day. Picturesque! Bloomed 55 days after sowing, 7 days before 'Zohar'. An amazing cut flower!
- Lovely in the garden. Flowers were large and prolific, but not long lasting.
- More vigorous seedlings. Plants were less bothered by insects and wind. Bloomed 1 week earlier. Larger heads—too large for a floral arrangement—more like a field sunflower.
- Sturdier stalks. Some of 'Zohar' fell over in the wind.

More Comments on 'Pro Cut Orange' Sunflower

- More numerous flowers. More branching.
- Produced beautiful flowers.
- Bloomed longer.
- Produced bigger, fuller heads.
- This is the only variety that germinated. The blooms on the few plants were nice. Plants were very healthy.

Comments on 'Zohar' Sunflower

2011

- Earlier flowers.

2012

- Big impressive flowers and heads full of seed. Held up to the wind better, too.
- Nicer all around. Uniform. Each plant was similar in size; all blooms were 6 inches across with two rows of full petals. 'Pro Cut Orange' blooms were 4 inches across with one row of petals.
- Plants never took off and grew. They never seemed healthy. Did not produce flowers.

Conclusions

'Pro Cut Orange' was preferred by most gardeners. Its plants grew vigorously and bloomed earlier. 'Zohar' also grew well. Both of these pollenless varieties are well suited to cut flower production in North Dakota.

Trial 52. Sweet Pea

Varieties (information from seed catalogs)

'Mammoth Choice'

74 days. Blooms early and withstands heat. Large, fragrant flowers. Long stems for cutting. Height 60–72 inches. Requires trellis.

'Royal'

90 days. Large blossoms in bright mix of colors. Outstanding fragrance. Long stems for cutting. Height 72 inches. Requires trellis.



Data

Data were collected at 18 sites in 2011 and 26 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Mammoth Choice'	'Royal'	Same	'Mammoth Choice'	'Royal'	Same	'Mammoth Choice'	'Royal'	Same
Germinated best	25 %	6 %	69 %	27 %	31 %	42 %	26 %	21 %	53 %
Healthier plants	7	20	73	23	23	55	16	22	62
Bloomed earlier	60	13	27	35	30	35	45	23	32
More flowers	47	27	27	26	32	42	35	30	36
More attractive in garden	27	27	47	22	33	44	24	31	45
More attractive in vase	10	30	60	33	11	56	24	19	58
<i>Preference</i>	63	38		53	47		57	43	
<i>Recommend to others</i>	56	63		32	50		42	55	
<i>Overall rating¹</i>	6.44	6.06		5.40	5.80		5.83	5.91	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Beautiful flowers from both. Both are vigorous climbers. I didn't like the fragrance of either one.
- Both had several die as young plants.
- Both varieties filled in nicely on my fence as season progressed. Both were very similar looking in the vase.
- Neither produced much and they were difficult to use as cut flowers.
- I enjoyed them both—long stems, huge fragrant flowers—mostly purple—but foliage was awfully thick. I'll do them again, I hope.
- Wet soil led to late planting. Our sweet peas did not do as well this year as other years.
- None of these came up.
- Both had vigorous and healthy plants. 'Mammoth Choice' only produced a few flowers and 'Royal' produced no flowers. Not sure why.

- They were not that attractive as they had small flowers; but were fragrant.

2012

- Both were very fragrant.
- Both came well and were healthy. Both were showy and fragrant and welcomed by friends.
- Neither produced many flowers.
- Near 100% germination. Plants grew well. We had high hopes throughout most of summer but lack of flowers made the sweet peas a tease. The few blossoms from both smelled amazing.
- The stand on both varieties was good.
- Very few seeds germinated (11 for 'Mammoth Choice' and 8 for 'Royal'). I was disappointed with both varieties.
- Did not germinate (sowed April 24).
- Had no luck with either variety.
- Germination was very poor (sowed June 12).

More General Comments

Plants did not grow well and neither variety produced any flowers. We would not plant again or recommend these varieties for anyone else.

- I think dry conditions in the garden contributed to poor germination and very few flowers.
- With our extreme heat, neither variety was very productive.
- Neither produced much for flowers. They dried up during the summer winds despite me watering them.
- It was very dry and neither did very well.
- Hard to germinate. Did not want to grow for me.
- Lasted past the first frosts.
- Cutworms destroyed the plants.

Comments on 'Mammoth Choice' Sweet Pea

2011

- Produced more flowers earlier.
- Bloomed although I planted late (June 20).
- Larger blossoms.
- Nicer looking plants.
- Best sweet pea I have ever grown.
- More blossoms.
- Bloomed 19 days earlier. Produced a large number of flowers in a timely manner.
- A little brighter. Bloomed way into September.

2012

- Established better, bloomed earlier, and produced more quality blooms.
- Bloomed 1 week earlier but the colors were not as nice.
- Had some bicolor flowers that were striking.
- Better colors.
- Deeper color and longer stems. No fragrance and very few flowers.
- Vigorous vines. I like the vibrancy of the multi-color hues!
- Produced a few more flowers.
- Survived a bit better in hot, dry weather.
- It took them a long time to develop flowers, but they have lasted a long time.
- Attractive blossoms.
- One plant survived the cutworms. The flowers were beautiful but not as fragrant as I would have liked.
- Plants dried up sooner.

- Healthy, tall plants but poor flowers (but more flowers than 'Royal').
- Bloomed 10 days earlier. Produced only a handful of flowers—these were sporadic in September— but twice as many flowers compared to 'Royal Mix'.

Comments on 'Royal' Sweet Pea

2011

- More flowers and in more colors.
- More variety of flower color.
- More color variety.
- Bigger, more colorful blooms.
- More wilt problems. Appeared to need a longer growing season. Didn't bloom until August 31.
- Bloomed earlier and lasted longer.
- Nicer plants!

2012

- Plants are larger and have more flowers on them. A variety of colors on much taller plants so they climbed nicer.
- Plants were bushier. Bloomed a few days earlier.
- Prettier colors—really bright.
- We prefer its colors.
- I'd grow this variety again. I picked the last bouquet on September 19 and they were still lovely and fragrant.
- Very fragrant and lots of flowers. Colors were not as intense. Needed to pick the whole stem with buds instead of single flowers to make a bouquet. Very nice.
- Kept blooming, even after frost. More fragrant. Smells wonderful!
- Blooms lasted longer at the end of the season.
- Lovely purple flowers.

Conclusions

'Mammoth Choice' bloomed earlier. Its colors were vibrant and its stems were longer. The exceptional fragrance, array of colors and long blooming season of 'Royal' generated enthusiasm.

Trial 53. Zinnia, Cactus

Varieties (information from seed catalogs)

'Burpeeanna Giants'

80 days. Huge 6-inch flowers in a bright array of colors. Height 36 inches.

'Giant Cactus'

80 days. Extra large, fully double, cactus-type flowers. Height 30 inches.



Data

Data were collected at 11 sites in 2011 and 11 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Burpee. Giants'	'Giant Cactus'	Same	'Burpee. Giants'	'Giant Cactus'	Same	'Burpee. Giants'	'Giant Cactus'	Same
Germinated best	36 %	18 %	45 %	27 %	27 %	45 %	32 %	23 %	45 %
Healthier plants	20	30	50	11	11	78	16	21	64
Bloomed earlier	45	18	36	13	38	50	29	28	43
More flowers	18	18	64	22	22	56	20	20	60
More attractive in garden	27	9	64	38	38	25	33	24	45
More attractive in vase	14	14	71	17	33	50	16	24	61
<i>Preference</i>	50	50		50	50		50	50	
<i>Recommend to others</i>	82	82		89	89		86	86	
<i>Overall rating¹</i>	8.00	7.11		7.56	7.78		7.78	7.45	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Both were great.
- Of all my trials, these varieties germinated best.
- Very prolific blooming. Beautiful flowers. Long lasting cut flower. Enjoyed both. They produced well into the fall until the hard frost.
- Neither variety lived up to expectations because of late/wet season. Just not a good year for many things. Think both of these would do well in a good year.
- Did not like these—ugly.

2012

- Plants of both varieties were beautiful once established. Blooms were distinct from one another; both very showy. Nice. Both excellent as cut flowers.
- I liked both and could really see no big difference.

- Excellent germination. The colors of the flowers were a little faded due to the extreme heat and lack of rain after mid June. I was surprised they even survived at all!
- Both had powdery mildew. They grew within the sun and shade from a nearby old apple tree.

Comments on 'Burpeeanna Giants' Zinnia

2011

- Better germination. Bloomed 1 day later. More uniform plants.
- Germinated 60% better, which led to more flowers. Taller plants. Its first flowers bloomed four days earlier than those of 'Giant Cactus Mix'. The flowers were fuller and the stems were straighter.
- Plants appeared healthier. Plants were larger and the flowers were more vibrant in color.

More Comments on 'Burpeeanna Giants' Zinnia

- Brighter colors.
- Bloomed earliest.

2012

- Brighter colors. Better variety of color. Taller plant and very sturdy.
- Grew better. Larger flowers; brighter colors.
- Plants and flowers were more uniform.
- Long lasting in the garden and as a cut flower. Bright colors. Plants and flowers have a nice size.
- The most attractive single flower was a red 'Burpeeanna'.
- Most flowers were an ugly orange rust.

Comments on 'Giant Cactus' Zinnia

2011

- Huge flowers. Pretty—very bright color—showy.
- Much better germination. Larger plants; more flowers per plant.
- Larger flowers.

2012

- They were taller and larger—very productive.
- Taller plants. Bloomed 2 weeks earlier. Had many more side blooms. More attractive and more uniform in flowering.
- Flowers were a little bigger, bushier on sturdier plants.
- Germination was 30% better. Plants established more completely filling the row faster.

Conclusions

Gardeners enjoyed both varieties and gave them high ratings. Many rated 'Burpeeanna Giants' and 'Giant Cactus' as similar for all traits. Neither variety distinguished itself from the other. Their flowers were big and showy.

Trial 54. Zinnia, Cutting

Varieties (information from seed catalogs)

‘Cut & Come Again’

80 days. A never ending display of double and semi-double flowers for cutting. Flowers are 2.5 inches across and slightly ruffled. Height 24 inches.

‘Oklahoma’

80 days. Bright colors, excellent vase life, and resistance to mildew. Lots of 2-inch blooms. Outstanding for cut flowers. Height 30–40 inches.



Data

Data were collected at 11 sites in 2011 and 15 sites in 2012.

Trait	2011			2012			Weighted Total		
	‘Cut & C. Again’	‘Oklahoma’	Same	‘Cut & C. Again’	‘Oklahoma’	Same	‘Cut & C. Again’	‘Oklahoma’	Same
Germinated best	9 %	27 %	64 %	40 %	13 %	47 %	27 %	19 %	54 %
Healthier plants	0	18	82	27	7	67	16	12	73
Bloomed earlier	36	45	18	31	15	54	33	28	39
More flowers	18	45	36	46	15	38	34	28	37
More attractive in garden	9	27	64	15	15	69	12	20	67
More attractive in vase	20	10	70	18	0	82	19	4	77
<i>Preference</i>	60	40		93	7		79	21	
<i>Recommend to others</i>	73	91		100	73		89	81	
<i>Overall rating¹</i>	7.27	7.55		8.79	7.57		8.15	7.56	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- These are both very attractive varieties.
- I loved the color pattern on both! Would like to plant these in a normal year.
- Great in containers. Small, compact stems. Lovely colors. Loved them both!
- Both varieties produced very small blooms.
- Both had good germination. Plants were very tall and sturdy; wind didn’t blow them over. Their flower heads were the same size with a lot of nice colors. Good for cutting.
- Very nice plants. Lots of flowers. Enjoyed all of the colors.
- Poor germination.
- Didn’t like either of these—low germination, slow flowering, small flowers.

2012

- I don’t usually like zinnias but was very happy I had them. I had compliments on how nice they looked. The ‘Cut & Come Again’ flowers were shaped like a cone, which made them attractive. Both varieties bloomed profusely right up to frost. All colors, including white were bright and vibrant. Both were excellent for cutting. The large array of colors made for beautiful bouquets with no need for filler greens, etc.
- Both had beautiful blooms in the garden and were beautiful in arrangements. Flowers lasted long in the vase. These were the top producers among all of the zinnias in my garden.
- Spotty in germination. Both kept flowering nicely through fall.
- Both were awesome.
- Showy flowers; I liked them both.
- It was hard to tell the difference.
- Both suffered from mildew in the fall.

Comments on 'Cut & Come Again' Zinnia

2011

- Prettier colors. Some were hot pink and coral/orange.
- Bigger plants and a little bit healthier.
- Produced more flowers later in the season.
- Sharper colors.
- Grew a little faster and had brighter colors.

2012

- More variety in color. This is a nice variety; the colors of its blooms hold up well; and they are fun to grow.
- The contrast was huge. Very easy to award kudos to 'Cut & Come Again'. A much stronger plant! Good performance. Lovely flowers. Hardy, colorful, strong plant.
- Came up first; better germination. Bloomed earlier. More blooms.
- I liked its colors better. They had more stems per plant.
- I loved the softer colors of its blossoms.
- Nice variety of colors. Big flowers; perfect for cutting.
- Seemed to produce more flowers.
- Prettier flowers.
- This variety received more compliments from guests.

Comments on 'Oklahoma' Zinnia

2011

- More productive and more colors.
- Withstood our winds better.
- Taller, stronger stalks. Loved the colors.
- A good, sturdy, and colorful plant.

2012

- Plants were shorter but fuller and more flowers—up to eight flowers per plant. Medium-sized flowers.
- Bloomed 1 day earlier. I liked its rounded bloom shape.
- Struggled all summer.
- Last to freeze in fall.

Conclusions

The sturdy plants of both varieties produced lots of showy, 2-inch blooms for cutting. The varieties rated similarly for all traits. Most gardeners preferred 'Cut & Come Again' for its lovely colors and its superior performance in dry 2012.

Trial 55. Zinnia, Classic

Varieties (information from seed catalogs)

'Giant Dahlia Mix'

80 days. Sturdy plants produce lots of 5-inch single, semi-double, and double flowers in bright colors. For cutting. Height 40–50 inches.

'State Fair'

90 days. Giant 4-inch blooms in a mix of colors. Long stems are good for cutting. Height 36 inches.

Data

Data were collected at 12 sites in 2012.

Trait	'Giant Dahlia Mix'	'State Fair'	Same
Germinated best	25 %	25 %	50 %
Healthier plants	9	36	55
Bloomed earlier	27	27	45
More flowers	9	36	55
More attractive in garden	27	36	36
More attractive in vase	22	33	44
<i>Preference</i>	36	64	
<i>Recommend to others</i>	91	100	
<i>Overall rating¹</i>	7.91	8.45	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Looked great in the garden.
- Similar in germination and in health of plants. Both were robust producers of flowers.
- They were both good varieties. I would be happy to plant both again.
- Close to 100% germination. I loved both. Gorgeous plants!
- They were both awesome.
- Very attractive. Lasted a good 10 days in floral arrangements.



Comments on 'Giant Dahlia Mix' Zinnia

- I like its look. Its flowers were robust, thick, nice and uniform. Their flowers seemed to last longer in the vase.
- Thicker stems, so were not as attractive in general.
- Flowered earlier.
- These had more purples.

Comments on 'State Fair' Zinnia

- Plants had more flowers. Flower colors were a little more vibrant.
- Its colors seemed somewhat brighter.
- Larger flower buds.
- Better germination. Tall, good-looking plants. Nice flowers.
- My daughter found this mix to be more colorful and prettier.
- Multiple, eye-catching colors. Smaller blossom size but more flowers/stem. Flowers had the best color, size and shape for cutting.

Conclusions

Both varieties were prolific producers of giant, gorgeous flowers. Varieties performed similarly, but a slight edge went to 'State Fair' for its notable health and production of flowers. Several gardeners felt 'State Fair' flowers were more vibrant.

Trial 56. Zinnia, Giant Lime

Varieties (information from seed catalogs)

'Benary's Giant Lime'

80 days. Huge flowers on long, sturdy stems. Fully double flowers up to 6 inches wide. Resists mildew. Excellent cut flower. Height 40–50 inches.

'Queen Lime'

80 days. Well-branched plants create lots of chartreuse flowers. Flowers are medium in size and fully double. Excellent vase life.



Data

Data were collected at 13 sites in 2011 and 22 sites in 2012.

Trait	2011			2012			Weighted Total		
	'Benary's G. Lime'	'Queen Lime'	Same	'Benary's G. Lime'	'Queen Lime'	Same	'Benary's G. Lime'	'Queen Lime'	Same
Germinated best	0 %	45 %	55 %	19 %	24 %	57 %	12 %	32 %	56 %
Healthier plants	9	27	64	14	24	62	12	25	63
Bloomed earlier	27	36	36	14	38	48	19	37	44
More flowers	18	45	36	33	29	38	27	35	37
More attractive in garden	9	45	45	24	19	57	18	29	53
More attractive in vase	13	25	63	27	0	73	22	9	69
<i>Preference</i>	27	73		57	43		46	54	
<i>Recommend to others</i>	73	91		82	77		79	82	
<i>Overall rating¹</i>	6.45	7.18		7.76	7.62		7.27	7.46	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

2011

- Both were nice and did great as a cut flower, lasting about five days.
- Both did well despite difficult conditions this year.
- Very few blooms on both.

2012

- I had the most beautiful lime green zinnias.
- They were outstanding. The flowers were plentiful and were a favorite of all my friends.
- Both added a color of green that stood out in arrangements complimenting the other attractive colors in arrangements. Their blooms lasted so long in arrangements.
- Both are good flowers. We would plant both again.
- Both stood up well.

- Germinated well. Both had a striking lime green color and lasted well as cut flowers.
- Their flowers were very long lasting as a cut flower.
- Fun for cutting. Looked great!
- Not much difference in anything (germination, health, earliness). They looked the same when planted together.
- Could not notice a difference between them.
- The color was not lime. It was not a pretty green. It was dull.

Comments on 'Benary's Giant Lime' Zinnia

2011

- The flowers had a nice globular shape.
- Larger flowers and bloomed first.
- Plants suffered from a fungus, while the 'Queen Lime' had nothing.

More Comments on 'Benary's Giant Lime' Zinnia

- These were prettier.
- More blooms. Healthy and uniform blooms.

2012

- A great cut flower. Nice color, but short plants. Doesn't get as many blooms as other zinnias.
- Its plants often had 1–2 flowers, but they were extra large, "plump" ones.
- Had looser appearing, larger petals on the flowers, which I like.
- Their flowers were gorgeous.
- Larger flowers.
- Beautiful green.
- Nice full flowers.
- Germinated sooner and better. A healthier plant in my garden.
- It looked a lot healthier.

Comments on 'Queen Lime' Zinnia

2011

- Bigger flowers. Lasted longer as a cut flower. Handled the frost better.
- A very nice flower.
- A little bigger and looked more like a zinnia.
- Deeper green, more rounded, and more uniform.
- More and bigger flowers.
- More blooms per plant.
- Nice stately plant—larger. A more prominent variety.

2012

- Outproduced "Benary's Giant Lime" and were more attractive to color and form. Plants were taller and had more side branches. Bloomed 1.5 weeks earlier. The blooms were more uniformly ball-shaped.
- Produced a fuller looking plant, heavy with blossoms, with one having 12 blossoms!
- Very sturdy stems.
- I liked the shape of this flower—more rounded petals.
- Very pretty plants. Easy to grow!
- Slightly more appealing fullness of plant.
- Bloomed a couple days earlier. I liked its color.

Conclusions

The lime green flowers were striking and complimented other flowers in arrangements. They were long lasting as cut flowers. These varieties were very similar; a slight edge went to 'Queen Lime' for the fullness of its plants.

Trial 57. Zinnia, Giant Orange

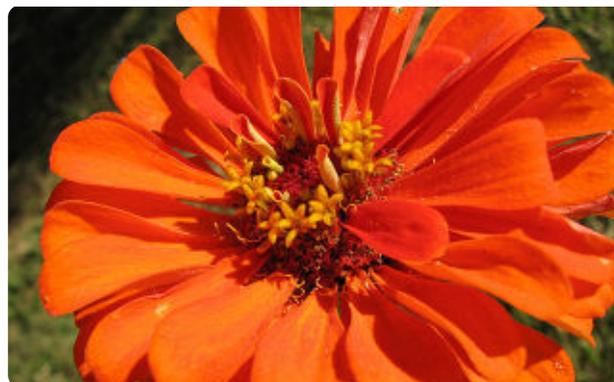
Varieties (information from seed catalogs)

'Benary's Giant Orange'

80 days. Large, 5-inch flowers on long, sturdy stems. Resists mildew. Excellent cut flower. Height 40 inches.

'Inca'

80 days. Extra large, fully double, cactus-type flowers make an impact in the garden and the vase. Vivid orange. Height 36 inches.



Data

Data were collected at 11 sites in 2012.

Trait	'Benary's G. Orange'	'Inca'	Same
Germinated best	55 %	0 %	45 %
Healthier plants	55	0	45
Bloomed earlier	27	27	45
More flowers	50	20	30
More attractive in garden	55	18	27
More attractive in vase	45	18	36
<i>Preference</i>	89	11	
<i>Recommend to others</i>	91	73	
<i>Overall rating¹</i>	8.55	7.00	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

General Comments

- Both produced wonderfully and were hard to differentiate.

Comments on 'Benary's Giant Orange' Zinnia

- I have never had such big, bright, showy zinnias and they bloomed for weeks. Stood out in bouquets—so nice.
- Had taller, more fuller plants. Produced more flowers. I prefer the fuller “faced” dahlia type of zinnia over narrow petals of 'Inca', a cactus type.
- More showy. Nicer for cutting.
- Very large flowers. Very hardy.
- Better germination. Earlier to bloom. Healthier plants. Flowers lasted longer in arrangements.

Comments on 'Inca' Zinnia

- It draws people's attention.
- Very slow to get going, but turned out very well. Very pretty.

Conclusions

'Benary's Giant Orange' put on a dazzling display of big, bright blooms. The flowers were showy and long lasting in bouquets. 'Inca', a cactus type of zinnia, was eye-catching but less impressive overall.

Trial 58. Zinnia, Giant Scarlet

Varieties (information from seed catalogs)

‘Giant Dahlia Scarlet’

80 days. Large flowers up to 6 inches wide. Single, semi-double and double flower types. Excellent cut flower. Height 40–50 inches.

‘Scarlet Flame’

80 days. Old-fashioned zinnia with elegant appearance. Bright scarlet flowers on sturdy 36-inch plants.



Data

Data were collected at 21 sites in 2012.

Trait	‘Giant D. Scarlet’	‘Scarlet Flame’	Same
Germinated best	24 %	33 %	43 %
Healthier plants	28	33	39
Bloomed earlier	32	42	26
More flowers	37	21	42
More attractive in garden	32	11	58
More attractive in vase	25	19	56
<i>Preference</i>	72	28	
<i>Recommend to others</i>	84	84	
<i>Overall rating¹</i>	7.79	7.53	

¹Rated on a scale of 1 to 10, with 1 = poor and 10 = excellent.

- Color was uniform and bright. Erect stem; large flower size with lovely form. Amazing longevity as a cut flower.
- Slightly taller plants. I liked the larger, fuller flowers.
- Grew faster, produced more, and larger flowers.
- Has a fuller blossom for cut flowers.
- Lasted longer in the garden and as a cut flower.
- Blossoms were a little larger.
- Larger flowers.
- Looked better in the garden.
- Bloomed 1 day earlier.
- Produced more flowers and they were larger too.
- It had more flowers so it overall looked better.

General Comments

- Both were very impressive with the number of plants (near 100% germination), very nice and healthy plants, brilliant colors, and how long the blooms lasted. They were grown in direct sun, but did not wilt.
- The plants of both varieties had beautiful blooms that lasted for days when cut and were beautiful in the garden.
- Great, healthy plants. Blooms were vibrant and long lasting. Did great in a vase.
- Nice leaves and flowers. Both were beautiful.
- Both were very productive—especially when cut regularly. Both looked great in the vase.

Comments on ‘Giant Dahlia Scarlet’ Zinnia

- Plants were taller and fuller. The flowers were brighter red, bigger, prettier and more showy.

Comments on ‘Scarlet Flame’ Zinnia

- I prefer its darker red color.
- I preferred its shade of red. It lasted longer as a cut flower.
- It draws people’s attention.
- More seedling vigor, Bloomed at least a week earlier. Produced more flowers. It was just a better plant.
- Germinated first and better. Large blooms. Many more blooms for cutting. An attractive addition to my flower garden.
- Good, hardy plants.

Conclusions

‘Giant Dahlia Scarlet’ blooms were bright red, big and bold. ‘Scarlet Flame’ showed strong seedling vigor and bloomed earlier. Its flowers were a deeper shade of red. Both varieties were attractive in the garden and as a cut flower.

Appendixes

Appendix 1. Welcome Letter

Dear Gardener,

Welcome to our research team! It will be fun to work with you this summer. Enclosed are the seeds you ordered. If you are missing anything, please let me know. Now let's go over some key points:

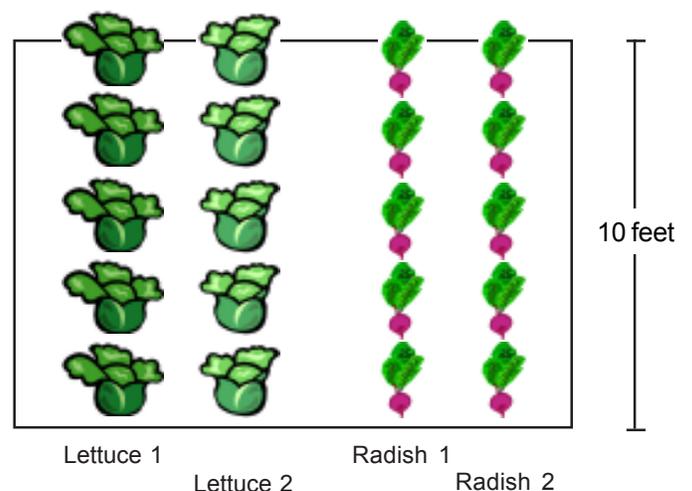
1. Each trial compares two varieties. **You must plant both varieties.**
2. To make it a fair comparison, you need to **treat both varieties in the same manner.** They should get the same amount of sunlight and general care (watering and fertilizing).
3. We want to see how these varieties perform under real-life home garden situations. The seed packets have some instructions on how to sow your seeds, but you may use your own gardening practices. For example, I sow my cucumber seeds in a *row*, but you can plant them in *hills*, if you wish. It's up to you.
4. When possible, **grow the varieties for each trial in rows next to each other.** You have enough seeds to grow at least 10 feet of each variety. To make it easier for you, I've enclosed a yellow row marker with string. There is a 10-foot space between the two black marks on the string. It's okay if you don't have quite enough space for 10-foot rows, but try to sow close to that much area. We want to get a fair look at both varieties. Look at the diagram below. Notice that the varieties being compared are grown next to each other. In this way, they are most likely to get the same amount of sunlight and care.
5. Most people don't like to grow flowers in rows. It's okay to plant them in groups or clumps instead. Just remember to give both varieties the same general location and care.
6. **Use the plot labels** that are enclosed. This will help you remember which variety is which. You may want to **make a plot diagram after you are done planting** for your future reference in case the plot labels fade or get removed accidentally.
7. An example of a completed evaluation form is enclosed. Use this as a guide to help you when evaluating the varieties in your trials.

If you have any questions, please don't hesitate to ask. I'll be happy to help.

Again, thanks for joining our team. If you know of a friend who may be interested in joining us, please share the enclosed brochure. Thanks!

Sincerely,

Tom Kalb
Horticulture Educator
tom.kalb@ndsu.edu



Appendix 2. Example of Evaluation Form

Muskmelon Variety Trial

Trial #19

Gardener Name: Ima Gardener

County: Golden Valley

Date Sown: May 30

Which variety?	Apollo	Zeus	Same	Comments
Germinated best?		X		Both had near 100% germination, but Zeus seedlings showed more vigor
Had healthier plants?		X		Apollo vines turned gray in fall
Produced the first ripe melons?	X			Three days earlier than Zeus
Produced higher yields?		X		Zeus produced 10 good melons; Apollo produced only 6
Had more attractive melons?		X		Zeus had larger fruits and brighter orange flesh
Tasted better?		X		Zeus was heavenly; Apollo was not quite as sweet

Overall Performance Rating	Apollo	Zeus
Rate each variety on a scale of 1 to 10, with 1 = poor and 5 = good and 10 = excellent. Don't give both a "10". Be very critical!	5	9

Preference

Circle the variety you prefer. Don't circle both—make a choice! Apollo Zeus

Please state the reason(s) for your preference:

Zeus was outstanding. Good yields of large, sweet fruits. The vines looked healthy all summer. Apollo ripened early, but the vines were weak and the melons tasted bland.

Recommendation

Circle the varieties you recommend for North Dakota gardeners:

Apollo Zeus Both Neither

Please write any additional comments on back. They are very helpful!

Send to Tom Kalb, NDSU-Extension, 3715 East Bismarck Expressway, Bismarck, ND 58501.

E-mail: <tom.kalb@ndsu.edu>. Thanks for your participation!

Appendix 3. Acknowledgements

Gardeners

North Dakota State University Extension Service is very thankful to the following gardeners who provided results from their research plots:

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Ken Anderson	Catherine, Taylor and Tyler	Shirley K. Holzer
Lori A. Anderson	Ensrud	Mary Hoots
Mary Ann M., Andrew, Bailee, Carissa and Alexis Anderson	Alison Erhardt	Jacqueline Hope
Naomi Anderson	Ava, Noah and Caleb Ericson	Cayden Huettl
Orren and Karen Anderson	Holly Eslinger	Dominic Hurley
Vanessa, Brian, Claire, Bethany and Grant Anderson	Kirk Eslinger	Arlene L. Isaak
Wade and Joanne Anderson	Lowell Fahrni	Verna Jackson
Sue B. Balcom	Alice Falkenstein	Levi Jacobson
Jenn Barnhart	Sandra Fettig	Nan Jacobson
Jane E. Bay	Donna M. Fisher	Jacob Jeglum
Adella Benz	Alice Fitterer	Jan Joersz
Kari Berg	Lon and Isaac Flage	Bernard C. Johnson
Angela Bettenhausen	Lori Flaten	Glenna A. Johnson
Marjean C. Boe	Nadine J. Florhaug	Nancy Johnson
Royann Bold	Julie, Carly and Nicole Fornshell	Sharon Johnson
Ruth Bornsen	Sylas Fredrickson	Stacey Johnson
Kathy Bosch	Jacqueline Friedt	Janice Jones
Harriet A. Bracken	SarahJoy Gackle	Jessica Jordahl
Leroy Brice IV	Angie Gapp	Mildred Jordahl
Ken V. Britzman	Marietta Good	Marie L. Kaiser
Cheryl Brooke	Suanne Goroski	Maria and Joe Kalb
Ivy Brye	Brenda and Adam Gorseth	John Karhoff
Krista, Brady, Emma and Abby Burman	Vernon and Marcy Grant	Gail Kartes
Sam Burtman	Arlene E. Gray	Rod, Emily and Braeden Kinzler
Lorrie Buzalsky	Michael, Zachary and Joshua Grosz	Chad Klindtworth
Bob Carlson	Jennifer, Ethan and Evan Grove	Terry Klusmann
John Carlson	Connie, Emma and Alison Gulleson	Grant Kocher
Trudy Cashmore	Loren and Sandra Gumke	Keegan, Kara and Cade
Deb Chambers	Vickie Gunsch	Kostohryz
Children's Garden Club of Grand Forks Public Library	Jennifer and April Hagemeister	Elizabeth, Holden, Hudson and Savannah Kraft
Clasen Family	Judy Hall	Mathew Krogen
Allen Colemer	Kaylie Halvorson	Sue Krohn
Bob Cummings	Sue and Jordan Hamilton	Kathy Kroshus
Sheryl and Mike Cvijanovich	Sylvia Hansen	Valerie Kuntz
Annette Delaney	Jessica, Edison, August and Clara Harms	Erin Kurtz
Donna Deplazes	Clara Harms	Pacey Kutzer
Virginia Dockter	Devon Haugen	Patti, Joanna and Sandra Larson
Nancy, Rachel and Halle Dunlop	Muriel Hedrick	Mary Lass
Kelsey Dunnell	Becky Heinsen	Sarah Lee
	Stephanie Herschlip	Sharon Lehman
	Tricia Hettwer	Cheryl, Allison and Ben Lepp
		Tracy L. Lesmann

Ellin and Adam Lindee
Bobbie Linrud
Ann M. Locken
Amanda, Selah and Kaiyah
Luethy
Roger Lunde
Jean Madsen
Carol Manifold
Thad Manuwal
Cheryl Marshall
Lori Martin
Becky McCleary
McGee Family
Eden McLeod
Jess McMullen
Deb McPherson
Mercer County Junior Master
Gardeners
Floramay Miller
Janice Mills
Darrick, Olivia and Aubrie
Mischke
Sara Mittelsteadt
Karen Morrison
Jon Mueller
Cherrie and Megan Neameyer
Caleb Nelson
Kathy Nelson
Wanda Nelson
Linda Ness
Cynthia Neuharth
Carrie, Sean and Madeliene
Nichols
Forrest and Emily Nielsen
Leslie and Tyson Odermann
Olschlager Family
Cindy Olson
Maria, Lila and Grace Olson
Carrie, Levi, Garin and Westin
Opdahl
Yuri Orth
Zona O'Shea
Logan Osvold
Rick and Nikki Owings
Elizabeth Patterson
Bob Pedigo
Chuck Peterson
Donna L. Peterson
Gavin and Natalie Peterson
Karly Pittman
Tyler Podrebarac
DeLaine Poppke
Shelley Porter
Lynette Rambousek
Diane Randle

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Tim Rasmussen
Rodger Rau
Delores Ravnaas
Tommy Ravnaas
Amy Rice
Sabrina and Hannah Richard
Sacha, Matt and Alex Ridley
Emily and Hayden Risty
Arlene and Haylee Ritzke
Rena, Haylee and Blake Rustad
Ruth E. Sailer
Sathre Family
Dean and Dixie Sauer
Alta Schaar
Robert Schank
Sylvia, Korbin and Camdyn Schell
Bryan, Rebecca, Sydney,
Gabrielle and Deirdre Schmidt
Sharon Schmidt
Lois Schott
Blaine and Virginia Schumacher
Laura Schumacker
Mark D. Schumaker
Charlotte Schwab
Lynn Schwark
Peg Seidel
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Blake, Ella and Aria Sickler
Adele Sigl
Larry Simpson
Margaret Sitte
Anna Slater
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