

2008 REPORT

North Dakota Home Garden Variety Trials



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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, tolerate drought, and produce quality food/flowers. In contrast, gardeners who sow an inferior variety are headed for frustrations. No matter how hard they work in preparing the soil, fertilizing, watering, weeding, and spraying their gardens, they may have disappointing results.

The potential impact in the identification of superior varieties for vegetable gardens is great, both in terms of numbers of households affected and economic impact. Using information from the National Gardening Association (NGA), at least one-third of households in North Dakota grow a vegetable garden. Using this statistic, there are approximately 85,630 households in our state with vegetable gardens.

Gardening size can vary, but most research studies show the average vegetable garden in America produces vegetables worth approximately \$250. This means that the total value of vegetables grown in North Dakota gardens exceeds \$20 million—and interest in gardening is soaring due to rising food costs. The chairman of W. Atlee Burpee, the largest seed company in the nation, reported a 30–40% increase in vegetable seed sales in 2008.

With regard to flowers, consumer expenditures on cut flowers have steadily grown in the USA this decade, offering new opportunities for local farmers. The most recent data from 2005 showed sales of \$2.3 billion, up 2.7% from 2004.

North Dakota State University currently conducts very little vegetable research at its research stations. These few plots provide 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:

- Trials at research stations utilize tractors, large-scale irrigation equipment, and herbicides. Backyard gardeners use shovels (maybe a roto-tiller) and watering cans. Herbicides are rarely used in home gardens.

- Trials conducted at research stations are out in full sun. Many home gardens have shade for at least part of the day.
- The soils at field research stations are similar to soils at a farm, that is, relatively fertile and undisturbed. In contrast, soils in a backyard have been highly disturbed from home construction and land grading activities, and are intensively managed.
- Trials at research farms are managed by University faculty and hired employees. Backyard gardens are managed for different reasons (recreation/exercise/quality food) by people of all ages, gardening experiences, and educational backgrounds.

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 and flowers.
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 and flower 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 2008, 42 trials were established and a total of 84 vegetable and flower varieties were evaluated.

Preparation of Seed Packets

Seeds are ordered in bulk from seed companies. Seeds are 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. Whenever possible, untreated seed is used. If treated seed is used, a label is affixed on the packet to inform growers to carefully handle and not eat the seed.

Distribution of Seeds and Supplies

This program is promoted by NDSU Extension Service faculty and staff across the state. Information is also available at the web site <www.dakotagardener.com>. Interested gardeners may participate in six or fewer trials. 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. Vegetables can be planted in rows while flowers can be planted in rows or clumps.

We rarely test more than two varieties per trials. Two varieties (20 row-feet) of a vegetable or flower is as much of a single vegetable or flower type that most gardeners would like to grow.

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 that the varieties are tested under actual home garden conditions.

Financing the Program

Gardeners are charged \$2 per trial (each trial has seeds of two varieties to compare). Several seed companies, including Johnny's Selected Seeds, Harris Seed, Rupp Seeds, Territorial Seed, Twilley Seed, and Seed Savers Exchange contribute seeds to the project. Private donations help to pay for program materials.

Quantity and Quality of Participation

In 2008, 110 gardeners received seeds. Over 500 research trials were planted in gardens across the state. 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 was the quality of research conducted by home gardeners. These families demonstrated extraordinary enthusiasm in this project. Besides carefully filling out report forms, they often wrote detailed letters on their trials.

Weather in 2008

Our growing season in 2008 started cool and dry (Figure 1). Gardeners were slow to plant their gardens due to the colder than normal temperatures. Seeds of many cucurbit crops rotted; other vegetables simply grew slower than usual. On the plus side, there were no late frosts in spring to damage their young crops (Table 1).

Temperatures warmed up to normal levels in July and most of the state was blessed with above average levels of rainfall during the growing season. The exception was in the far western portion of the state, which typically is drier and suffered from a persistent lack of moisture. A series of hailstorms battered many gardens across the state in July and August.

Warmer than average temperatures were found through late summer and fall. Our fall frost came later than unusual—much later in the eastern half of the state (Table 1). This extension of our growing season in fall made up for the slow start we had in spring.

Compiling the Data

Ninety-seven families completed report forms (Figure 2). Granted, some reports did not include usable results. For example, some gardens were destroyed by hail while other gardens were damaged by wildlife. Gardeners had received correspondence during the season on how to collect data and only a few reports (less than 5%) showed data with inconsistencies; these reports were eliminated from the final analysis.

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

Reporting the Final Results

The final results will be reported to interested seed companies and NDSU educators. Newspaper columns will be written to report findings and public presentations will be made to garden clubs and University faculty. Participating gardeners receive a summary of the results (see page 5) and a certificate to recognize their participation in the program.

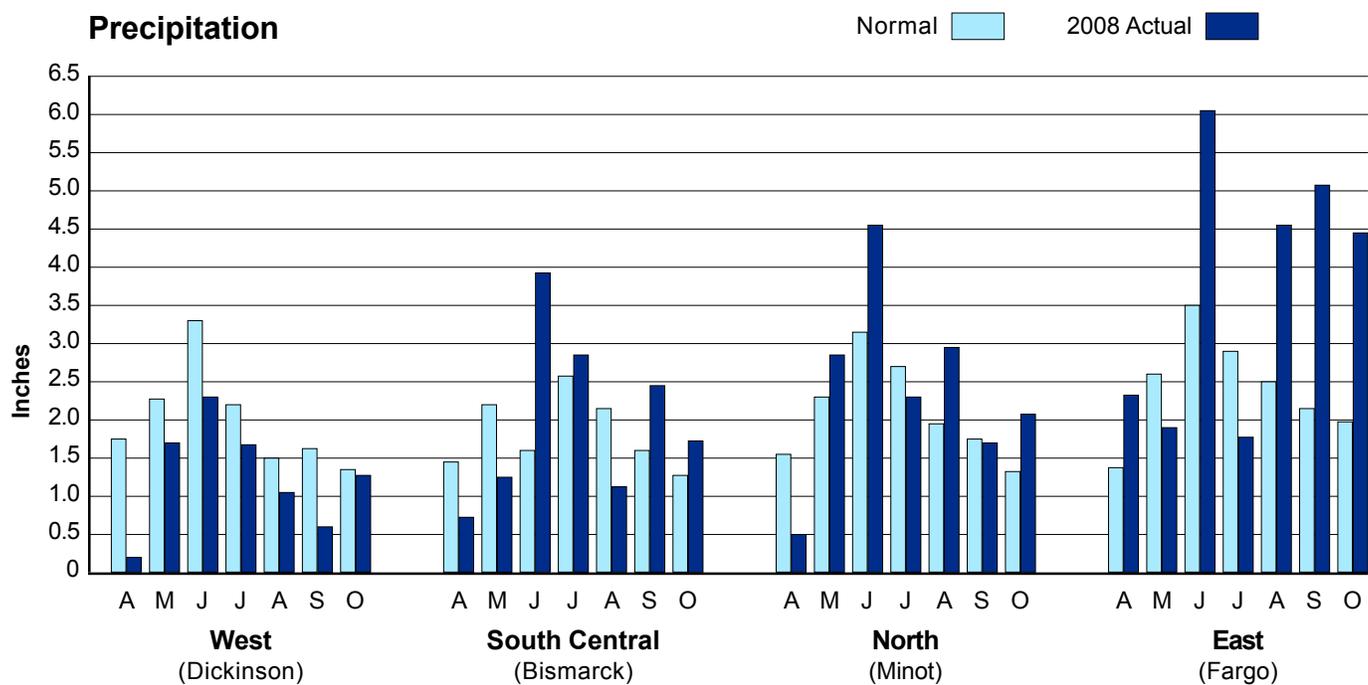
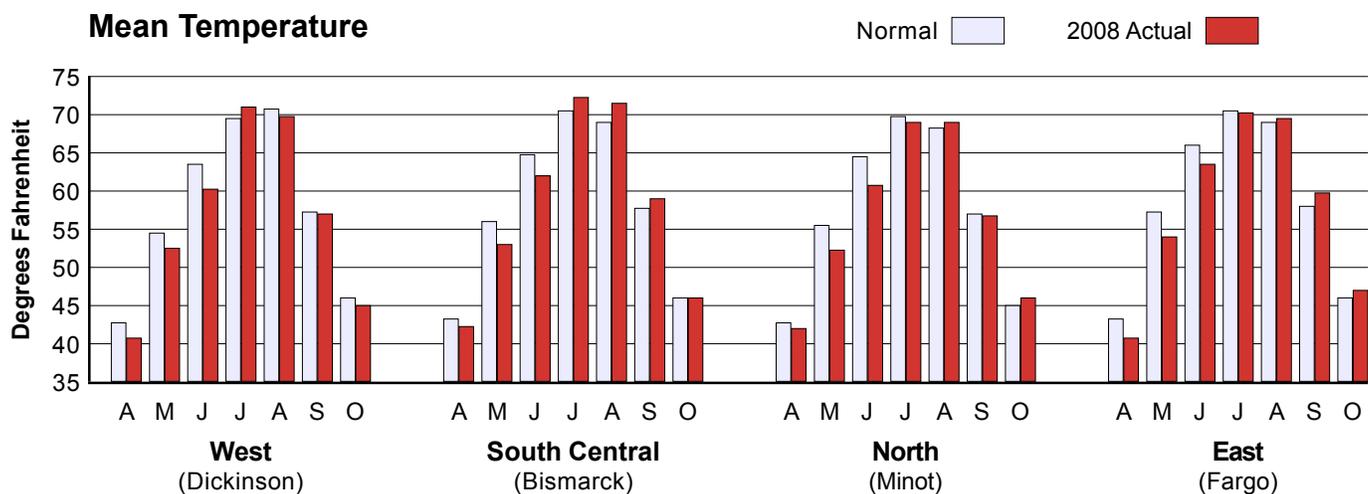


Figure 1. Mean monthly temperatures and precipitation amounts for key locations (Source: National Oceanic and Atmospheric Administration National Climatic Data Center).

Table 1. Normal and 2008 actual frost dates for key locations.

Location	Last spring frost		First fall frost		Growing Season (days)	
	Normal	2008	Normal	2008	Normal	2008
West (Dickinson)	May 13	May 11	Sep 22	Sep 29	132	141
South Central (Bismarck)	May 12	Apr 07	Sep 28	Oct 25	129	152
North (Minot)	June 03	Apr 26	Sep 16	Oct 10	141	135
East (Fargo)	May 05	Apr 12	Oct 14	Nov 04	140	140

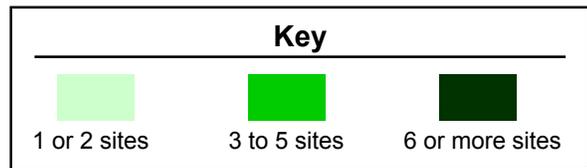
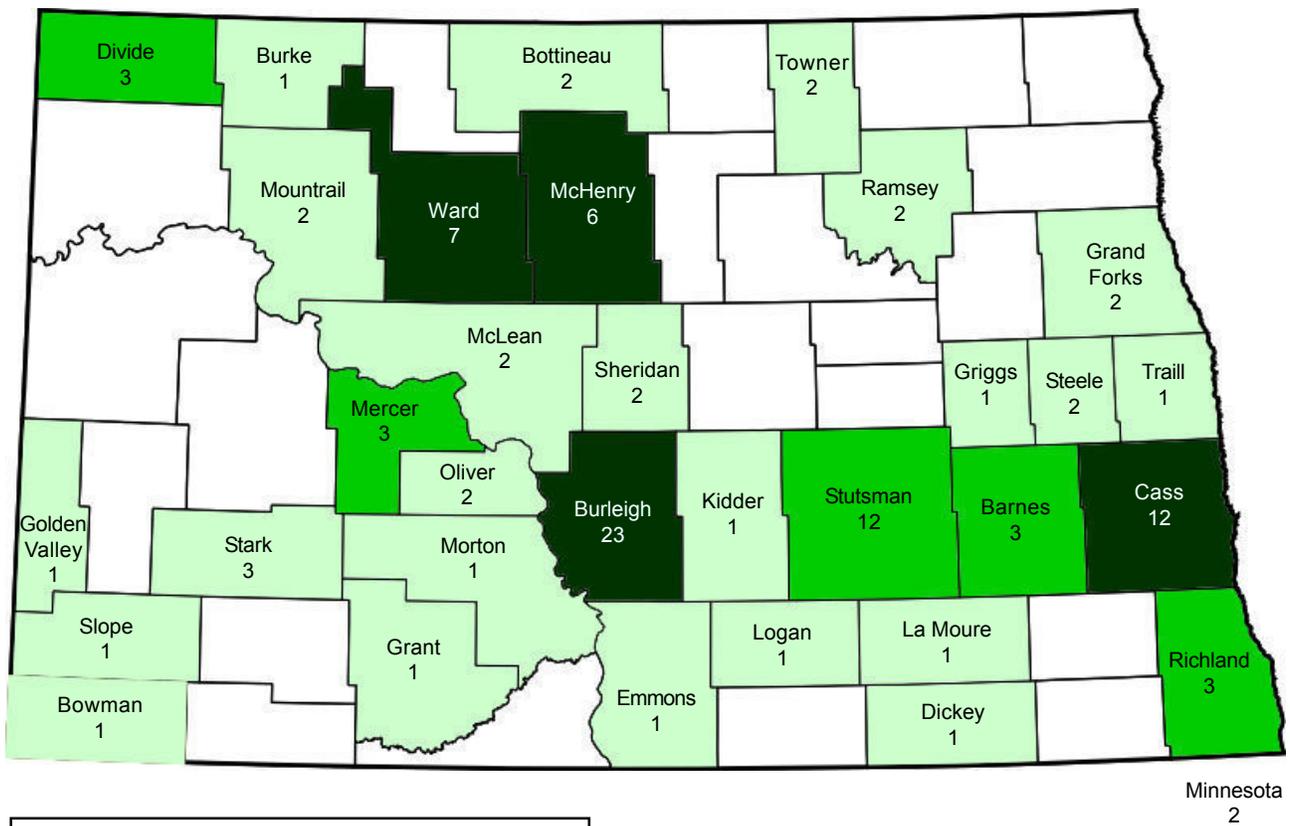


Figure 2. Sites where garden results were reported in 2008. Results were obtained from 97 sites. Major cities in North Dakota include Fargo (Cass County), Bismarck (Burleigh County), and Minot (Ward County).

Chapter 2

Summary of Results

Introduction

Ninety-five gardeners across North Dakota evaluated a total of 84 varieties of vegetables and flowers in their gardens. Varieties were rated for germination, plant health, earliness, yield, and fruit/flower quality.

In each of the trials, gardeners were asked to rate the performance of each variety using a scale of 1 to 10, with 1 = poor and 10 = excellent. They were asked which of the varieties they would recommend to other gardeners, and which of the two varieties they preferred. The following is a summary of the data, including our conclusions for each trial.

Vegetable Trials

#1. Bean, Green. 9 sites. *'Bush Blue Lake 274'* (rating: 7.11; recommended: 78%; preferred: 56%) and *'Espada'* (rating: 7.67; recommended: 89%; preferred: 44%). Both varieties performed well across the state and were recommended by the vast majority of gardeners. Both varieties got off to strong starts, produced their first pods at about the same time, and produced similar yields through the season. Gardeners were impressed with the quality of pods produced by the varieties, especially the straight, tender pods of *'Espada'*.



'Espada' Green Bean

#2. Bean, Vegetable Soybean. 4 sites. *'BeSweet 292'* (rating: 6.00; recommended: 75%; preferred: 67%) and *'BeSweet 2001'* (rating: 5.75; recommended: 50%; preferred: 33%). Many growers were not familiar with vegetable soybeans and they experienced mixed results. Some growers did not like the flavor of this vegetable nor the work involved in shelling the pods. Many gardeners expressed problems with rabbits and deer eating the plants. Neither variety generated much enthusiasm. In our limited testing, *'BeSweet 292'* showed a slight edge for earlier maturity, higher yield, and superior eating quality. Both varieties matured very late for our short season. *'BeSweet 292'* is the earliest maturing of the leading varieties on the market and is a good choice for our gardens today.



'Rocdor' Wax Bean

#3. Bean, Wax. 5 sites. *'Carson'* (rating: 5.00; recommended: 40%; preferred: 50%) and *'Rocdor'* (rating: 7.75; recommended: 60%; preferred: 50%). Our soils were unusually cool in spring and the black-seeded *'Rocdor'* got off to a strong start. Its plants grew well and produced higher yields compared to the plants of *'Carson'*. Most gardeners preferred the deeper yellow, more slender pods of *'Rocdor'*. *'Carson'* is a fine variety, but it got off to a slow start and never seemed to catch up to the performance levels of *'Rocdor'*.

#4. Bean, Yardlong. 13 sites. *'Gita'* (rating: 5.85; recommended: 54%; preferred: 42%) and *'Liana'* (rating: 5.69; recommended: 54%; preferred: 58%). In spite of our cool temperatures, both varieties of this warm-season vegetable grew well at most gardens. *'Gita'* showed a slight edge in germination and plant vigor. Yields and bean quality were very similar among the varieties. Most gardeners had fun growing these beans, but nearly one-third of testers disliked both varieties due to the asparagus-like taste.

'BeSweet 292' Vegetable Soybean

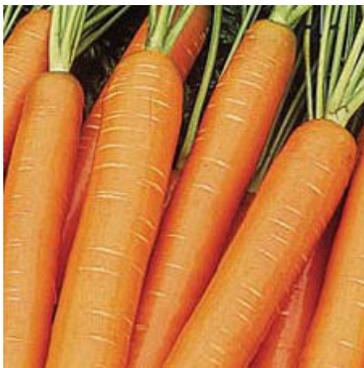




'Touchstone Gold' Beet



'Bull's Blood' Beet



'Nelson' Carrot

'Purple Haze' Carrot



#5. Beet. 11 sites. 'Red Ace' (rating: 7.80; recommended: 100%; preferred: 67%) and 'Red Cloud' (rating: 6.89; recommended: 80%; preferred: 33%). Every gardener liked the performance of 'Red Ace'. It showed exceptional seedling vigor and very impressive yields. 'Red Cloud' also did very well at most sites and was highly recommended. The roots of both varieties were deep red with very little zoning. They tasted excellent and were very good for pickling. Many of the gardens were affected by hailstorms, but both varieties recuperated nicely.

#6. Beet, Golden. 11 sites. 'Burpee Golden' (rating: 5.10; recommended: 36%; preferred: 18%) and 'Touchstone Gold' (rating: 8.18; recommended: 82%; preferred: 82%). The new variety 'Touchstone Gold' is a dramatic improvement over the old standard variety 'Burpee Golden'. 'Touchstone Gold' was superior in all traits including plant vigor, earliness, yield, and root quality. Its roots were especially smooth and uniform with a bright golden color. Gardeners liked its sweetness, too. Customers are much more familiar with red-colored beets, but this new golden variety may open eyes in the future.

#7. Beet, Specialty. 12 sites. 'Bull's Blood' (rating: 8.00; recommended: 92%; preferred: 70%) and 'Chioggia' (rating: 6.60; recommended: 67%; preferred: 30%). Most gardeners preferred 'Bull's Blood' for its healthier growth and higher yields. Its red leaves were as beautiful as advertised—"good enough to plant in a flower pot", said one gardener. Its dark red roots were very flavorful. 'Chioggia' also grew well, but gardeners expressed mixed feelings toward its pink rings and very mild flavor. Both varieties were good for pickling.

#8. Carrot. 11 sites. 'Nelson' (rating: 7.20; recommended: 70%; preferred: 60%) and 'Scarlet Nantes' (rating: 6.60; recommended: 50%; preferred: 40%). Most gardeners preferred 'Nelson'. This hybrid grew more vigorously, matured earlier, and produced higher yields than the old-time favorite, 'Scarlet Nantes'. Gardeners liked the flavor of 'Nelson', especially when raw. Several gardeners liked 'Scarlet Nantes', especially for its bright orange, slender roots and its flavor when cooked. Several gardeners struggled to establish good stands of either variety due to cold, dry weather in spring followed by a series of storms.

#9. Carrot, Purple. 19 sites. 'Dragon' (rating: 6.19; recommended: 53%; preferred: 31%) and 'Purple Haze' (rating: 8.00; recommended: 88%; preferred: 69%). Most gardeners preferred 'Purple Haze' for its uniform, tapered carrots with beautiful contrasting colors. It had a sweet, mild flavor that was especially good when eaten raw. It performed well at almost every site. Many gardeners noted the impressive germination, growth, and yields of 'Dragon'. Most gardeners felt that 'Dragon' was bitter when eaten raw, but flavorful when cooked.

#10. Carrot, Red. 9 sites. 'Atomic Red' (rating: 5.00; recommended: 50%; preferred: 71%) and 'Samurai Red' (rating: 3.50; recommended: 22%; preferred: 29%). Gardeners did not like either variety. 'Samurai Red' germinated well, but everything went downhill from there. Most gardeners noted bolting problems and poor root development for this variety. Its roots were hard and bitter. 'Atomic Red' was the better performer in this trial. It produced much higher yields and its roots were less bitter. Lycopene is better absorbed by the body when cooked and this is the only way that these red carrot varieties should be consumed. They are not as sweet nor as tender as traditional orange carrots.

#11. Cucumber, Beit Alpha. 11 sites. *'Diva'* (rating: 7.14; recommended: 100%; preferred: 67%) and *'Sultan'* (rating: 6.63; recommended: 63%; preferred: 33%). This was a terrible growing season for cucumbers. Crops suffered from unseasonably cool temperatures, rain storms when seeds were germinating, and then several hail storms during summer. Among those gardeners with successful crops, all recommended *'Diva'* and most preferred it over *'Sultan'*. The cukes of *'Diva'* were more attractive, uniform, better tasting, and slow to get seedy. The vines of *'Sultan'* were more vigorous, healthy, and slightly more productive.



'Diva' Cucumber

#12. Cucumber, Burpless. 20 sites. *'Sweet Slice'* (rating: 7.72; recommended: 94%; preferred: 71%) and *'Tasty Green'* (rating: 6.33; recommended: 41%; preferred: 29%). *'Sweet Slice'* was preferred because of its very attractive, tasty cucumbers. Gardeners especially liked the uniformity and crispness of the fruit. Vines of both varieties were healthy, but gardeners were especially impressed with the late season vigor and yields of *'Tasty Green'*. The cucumbers of *'Tasty Green'* looked nice, but gardeners expressed mixed reviews on their flavor.

#13. Kohlrabi. 9 sites. *'Superschmelz'* (rating: 5.22; recommended: 22%; preferred: 33%) and *'Winner'* (rating: 6.33; recommended: 67%; preferred: 67%). *'Winner'* lived up to its name. *'Winner'* grew more vigorously and matured much earlier than *'Superschmelz'*. It produced high yields of tender, flavorful bulbs. *'Superschmelz'* was less adaptable to adverse weather and slower to grow. The few bulbs that did size up were most impressive, and tasted good when cooked.



'Winner' Kohlrabi

#14. Lettuce, Batavia/Leafy. 7 sites. *'Cherokee'* (rating: 6.86; recommended: 71%; preferred: 71%) and *'Teide'* (rating: 6.57; recommended: 71%; preferred: 29%). Both varieties performed well in our trials. Gardeners were impressed with the heat tolerance of both varieties, leading to a long harvest season. *'Cherokee'* was preferred for its higher yields and crisper texture. The dark red leaves of *'Cherokee'* were attractive, but could not match the gorgeous, frilly leaves of *'Teide.'*



'Cherokee' Lettuce

#15. Lettuce, Butterhead. 5 sites. *'Buttercrunch'* (rating: 7.20; recommended: 60%; preferred: 60%) and *'Harmony'* (rating: 6.40; recommended: 80%; preferred: 40%). Gardeners liked both varieties. The slight edge went to *'Buttercrunch'* for its earlier maturity and superior taste. Its flavor did not get bitter until late in summer. Gardeners liked *'Harmony'* for its exceptional vigor and resistance to bolting, but its heads had a tendency to get bitter faster.

#16. Lettuce, Romaine Spotted. 8 sites. *'Flashy Trout Back'* (rating: 7.86; recommended: 86%; preferred: 71%) and *'Freckles'* (rating: 7.14; recommended: 86%; preferred: 29%). Gardeners were impressed with both varieties, but it was difficult to find much difference between the two. They were rated very similarly for all measured traits. Most gardeners showed a preference for *'Flashy Trout Back'* due to its slightly higher yields and more attractive heads. *'Freckles'* had a slight edge in taste among gardeners.

'Flashy Trout Back' Lettuce

#17. Melon, Galia. 9 sites. *'Diplomat'* (rating: 5.78; recommended: 67%; preferred: 37%) and *'Passport'* (rating: 6.89; recommended: 56%; preferred: 63%). These varieties struggled in our cool summer weather. Many gardeners noted that each variety showed strong seedling vigor and vine growth but failed to produce a ripe melon. Nevertheless, a small majority of gardeners preferred *'Passport'*. Although it ripened later, its yields were higher and its melons tasted better. Fruit rot in the field was a problem for both varieties.





'Sugar Nut' Melon

#18. Melon, Specialty. 6 sites. 'Sugar Nut' (rating: 9.00; recommended: 100%; preferred: 100%) and 'Sun Jewel' (rating: 5.00; recommended: 40%; preferred: 0%). Both varieties struggled due to the cool summer temperatures, and in some cases, no fruit ripened before the frost. Nevertheless, 'Sugar Nut' was the clear winner of this trial. Its melons were much sweeter and more flavorful than those of 'Sun Jewel'. 'Sun Jewel' again proved that it is one of the easiest melons to grow in the North; however, its flavor is rather bland.



'Jamboree' Pumpkin

#19. Melon, Muskmelon. 14 sites. 'Fastbreak' (rating: 6.50; recommended: 60%; preferred: 56%) and 'Halona' (rating: 6.56; recommended: 40%; preferred: 44%). Cool summer weather slowed the growth of melons and most gardeners preferred 'Fastbreak', the earlier ripening of the two varieties. Its melons were noticeably smaller, but uniform in size and slightly sweeter (perhaps because they reached full ripeness). The melons of 'Halona' were more attractive but could not develop their full potential for flavor.

#20. Pumpkin, Gray. 9 sites. 'Jamboree' (rating: 8.33; recommended: 100%; preferred: 89%) and 'Jarrahdale' (rating: 6.22; recommended: 33%; preferred: 11%). 'Jamboree' was the clear winner. It was recommended by all gardeners and was overwhelmingly preferred over 'Jarrahdale'. The fruits of 'Jamboree' matured earlier and tasted better (similar to a buttercup). Its fruits were smooth-skinned and extremely attractive as decorations. The vines of both varieties were vigorous. The fruits of 'Jarrahdale' were slightly larger in most cases.



'Portofino' Summer Squash

#21. Pumpkin, Seed. 6 sites. 'Kakai' (rating: 7.00; recommended: 75%; preferred: 60%) and 'Lady Godiva' (rating: 6.60; recommended: 83%; preferred: 40%). In our limited testing, 'Lady Godiva' matured earlier and produced more pumpkins. It was a more consistent performer than 'Kakai'. Several gardeners expressed germination problems with 'Kakai', perhaps due to our cool spring weather. Gardeners who successfully grew 'Kakai' praised the variety for the quality and quantity of its edible seeds.

#22. Squash, Romanesco Summer. 5 sites. 'Italian Largo' (rating: 5.60; recommended: 20%; preferred: 0%) and 'Portofino' (rating: 7.80; recommended: 80%; preferred: 100%). Although our testing was limited, our gardeners unanimously chose 'Portofino' over 'Italian Largo'. 'Portofino' matured earlier and produced higher quality, more uniform fruit. 'Italian Largo' produced higher overall yields, although neither variety was especially productive. In general, our gardeners were not especially enthusiastic for romanesco summer squash.

'Flying Saucers'
Summer Squash

#23. Squash, Scallop Summer. 6 sites. 'Flying Saucers' (rating: 7.83; recommended: 67%; preferred: 83%) and 'Sunburst' (rating: 6.33; recommended: 67%; preferred: 17%). Gardeners liked both varieties, but most preferred 'Flying Saucers' for its distinctively colored fruits. Both varieties were productive, mild in flavor, and good for cooking. 'Sunburst' got off to a quick start and produced earlier, but 'Flying Saucers' showed higher yields overall.

#24. Squash, Summer Straightneck. 3 sites. 'Multipik' (rating: 7.67; recommended: 100%; preferred: 67%) and 'Sunray' (rating: 7.33; recommended: 33%; preferred: 33%). It's hard to make conclusions with such limited testing, but our gardeners generally preferred 'Multipik'. In two of three trials, 'Multipik' produced earlier and produced more fruits. Both varieties produced well up until frost. The distinguishing feature of 'Sunray' is its resistance to powdery mildew and this disease did not appear to be a problem for either variety in 2008.



#25. Squash, Winter Buttercup. 12 sites. *'Bonbon'* (rating: 6.75; recommended: 92%; preferred: 50%) and *'Sweet Mama'* (rating: 6.50; recommended: 75%; preferred: 50%). Gardeners liked both varieties, but *'Bonbon'* was a more consistent performer. Many gardeners noted it matured early and tasted excellent. *'Sweet Mama'* grew more vigorously and produced slightly higher yields on average. Most growers preferred the appearance of *'Sweet Mama'* fruits, which lacked a button on the bottom.



'Bonbon' Winter Squash

#26. Squash, Winter Butternut. 4 sites. *'Chieftain'* (rating: 4.00; recommended: 25%; preferred: 25%) and *'Early Butternut'* (rating: 7.00; recommended: 75%; preferred: 75%). The few gardeners who participated in this trial generally liked the performance of *'Early Butternut'*. It showed strong seedling vigor and healthy plant growth. The compact vines set good crops of high quality squash. *'Chieftain'* matured later and several gardeners commented that most of its fruits did not mature before frost.

#27. Squash, Winter Hubbard. 4 sites. *'Blue Ballet'* (rating: 3.67; recommended: 33%; preferred: 67%) and *'Blue Magic'* (rating: 2.67; recommended: 33%; preferred: 33%). Only a few gardeners were interested in participating in this trial and these gardeners were not impressed by either variety. *'Blue Ballet'* matured earlier and its fruits were uniform and attractive in appearance. These fruits were relatively small (about 4 pounds), but still suitable for today's smaller families. *'Blue Magic'* had more vigorous vines and larger fruits (about 6 pounds). The flavor of both varieties was mild.



'Bright Lights' Swiss Chard

#28. Swiss Chard. 15 sites. *'Bright Lights'* (rating: 7.77; recommended: 69%; preferred: 57%) and *'Five Color Silverbeet'* (rating: 7.36; recommended: 69%; preferred: 43%). Gardeners were impressed with both varieties for their beauty, taste, and production. Both varieties tolerated cool temperatures in spring and fall. Most gardeners preferred *'Bright Lights'* for its brighter colors and slightly higher yields. Other gardeners were impressed with the vigor and flavorful stalks of *'Five Color Silverbeet'*.



'Bright Lights' Cosmos

Flower Trials

#29. Cosmos. 7 sites. *'Sonata Mix'* (rating: 8.13; recommended: 100%; preferred: 67%) and *'Versailles Mix'* (rating: 8.00; recommended: 75%; preferred: 33%). Both varieties performed well in our trials. Gardeners liked their performance both in the garden and as a cut flower. Every gardener recommended *'Sonata Mix'* and most preferred it over *'Versailles Mix'* for its earlier blooms and prolific blooming.

#30. Cosmos, Sulphur. 8 sites. *'Bright Lights'* (rating: 7.50; recommended: 100%; preferred: 71%) and *'Cosmic Mix'* (rating: 6.50; recommended: 86%; preferred: 29%). Gardeners liked both varieties, but most preferred *'Bright Lights'*. Its plants were taller, fuller, and loaded with flowers. *'Bright Lights'* was more attractive in the garden and a better cut flower. *'Cosmic Mix'* grows much shorter (12 inches compared to 36 inches for *'Bright Lights'*) and is a good choice for gardeners looking for a compact plant.



'Sonata Carmine' Cosmos

#31. Nasturtium. 9 sites. *'Jewel Mix'* (rating: 6.38; recommended: 44%; preferred: 71%) and *'Whirlybird Mix'* (rating: 5.50; recommended: 56%; preferred: 29%). This trial did not generate much enthusiasm and several gardeners did not recommend either variety. When asked to make a choice, most gardeners preferred *'Jewel Mix'*. Several gardeners noted that it bloomed earlier and was more attractive in the garden. Its plants were sturdier and kept blooming into fall.



'Monet's Palette' Sunflower

#32. Sunflower, Bicolor. 10 sites. *'Pro Cut Bicolor'* (rating: 6.11; recommended: 80%; preferred: 50%) and *'Ring of Fire'* (rating: 6.22; recommended: 50%; preferred: 50%). *'Pro Cut Bicolor'* was a consistent performer. Its healthy, sturdy stalk rapidly produced a single head that was suitable for cutting. Gardeners had mixed feelings on the beauty of its flower. *'Ring of Fire'* was a more delicate plant and it struggled at some sites. Its multibranching habit led to more, albeit smaller blooms and an extended display in the garden.

#33. Sunflower, Mixed. 10 sites. *'Infrared'* (rating: 7.25; recommended: 75%; preferred: 57%) and *'Monet's Palette'* (rating: 7.00; recommended: 88%; preferred: 43%). Gardeners liked both mixtures of sunflowers. *'Infrared'* put on a beautiful display of flowers in rich shades of bronze, burgundy and red. Its stalks were taller, very healthy, and bloomed late into the season. The blooms of *'Monet's Palette'* were especially bright and colorful. *'Monet's Palette'* bloomed early and prolifically.



'Moulin Rouge' Sunflower

#34. Sunflower, Orange. 7 sites. *'Pro Cut Orange'* (rating: 7.71; recommended: 86%; preferred: 57%) and *'Sunrich Orange'* (rating: 7.71; recommended: 86%; preferred: 43%). Both varieties were outstanding, especially for cut flower production. *'Pro Cut Orange'* blooms very early and reliably. The flowers of *'Sunrich Orange'* bloom later, but are larger, more uniform, and especially attractive. The slender stems of *'Sunrich Orange'* make this variety easier to use in flower bouquets, too. These varieties complement one another for cut flower production with *'Pro Cut Orange'* serving the role as an early maturing variety that expands the harvest season. The single-headed trait of these varieties limits their use in gardens since their season of bloom is short. Multibranching varieties, in contrast, produce many more blooms and have a longer display of color.

#35. Sunflower, Red. 19 sites. *'Moulin Rouge'* (rating: 7.94; recommended: 82%; preferred: 76%) and *'Velvet Queen'* (rating: 6.47; recommended: 53%; preferred: 24%). Most gardeners were extremely impressed with the deep maroon blooms and purple stems of *'Moulin Rouge'*. Its sturdy, drought-tolerant stalks bloomed early and abundantly, making for an eye-catching display of rich color. *'Velvet Queen'* bloomed longer into the fall and showed a wider variety of colors, from yellow to orange and red, all with a velvety texture. It was attractive, but could not match the special beauty of *'Moulin Rouge'*.



'Starburst Lemon Aura' Sunflower

#36. Sunflower, Soft Shades. 11 sites. *'Peach Passion'* (rating: 3.33; recommended: 14%; preferred: 0%) and *'Starburst Lemon Aura'* (rating: 8.00; recommended: 86%; preferred: 100%). *'Starburst Lemon Aura'* clearly outperformed *'Peach Passion'*. It was much more vigorous and its blooms were more abundant. All gardeners liked its starlike, light yellow blooms, both in the garden and as a cut flower. The performance of *'Peach Passion'* was greatly disappointing. Several gardeners noted poor germination and weak growth. Its blooms have a distinctive color, but were few in number and lacked vibrancy.

'Pro Cut Orange' Sunflower



#37. Sunflower, Yellow. 4 sites. *'Ikarus'* (rating: 5.25; recommended: 67%; preferred: 0%) and *'Valentine'* (rating: 8.25; recommended: 100%; preferred: 100%). Surprisingly few gardeners were interested in evaluating these award-winning sunflower varieties. These few gardeners unanimously preferred *'Valentine'*. It bloomed earlier, produced more flowers, and was prettier in the garden. Gardeners loved the color and uniformity of its pale lemon flowers. Most gardeners recommended *'Ikarus'* as well; its upright blooms were favored for use as a cut flower.

#38. Zinnia, Bicolor. 14 sites. *'Candy Cane Mix'* (rating: 7.14; recommended: 86%; preferred: 31%) and *'Peppermint Stick Mix'* (rating: 8.00; recommended: 100%; preferred: 69%). Gardeners fell in love with the splashy colors of both varieties. Most preferred *'Peppermint Stick Mix'* for the greater intensity and broader range of colors in its blooms. It was more beautiful in the garden and as a cut flower. Plants of both varieties were healthy and prolific in blooming.

#39. Zinnia, Green. 6 sites. *'Benary's Giant Lime'* (rating: 7.83; recommended: 80%; preferred: 83%) and *'Envy'* (rating: 6.50; recommended: 80%; preferred: 17%). Gardeners liked both varieties, but *'Benary's Giant Lime'* was superior. It germinated better, had healthier plants, and bloomed earlier. Its blooms were fuller and more attractive in the garden. *'Envy'* was outstanding as a cut flower, but *'Benary's Giant Lime'* was even more attractive and longer lasting in a vase.

#40. Zinnia, Mexican. 9 sites. *'Aztec Sunset'* (rating: 6.22; recommended: 78%; preferred: 37%) and *'Persian Carpet'* (rating: 6.33; recommended: 67%; preferred: 63%). These varieties are small-seeded and several gardeners noted uneven germination. Once established, the plants grew well and bloomed profusely. Some gardeners noted *'Aztec Sunset'* had more blooms and deeper green foliage. Other gardeners were awestruck over the intricate patterns on the flowers of *'Persian Carpet'*. *'Persian Carpet'* bloomed earlier at many sites, too. Both varieties were very long lasting as a cut flower.

#41. Zinnia, Semidwarf. 14 sites. *'Cut and Come Again'* (rating: 8.58; recommended: 83%; preferred: 58%) and *'Oklahoma Mix'* (rating: 8.00; recommended: 83%; preferred: 42%). Both varieties were impressive. They grew vigorously, resisted powdery mildew, and produced lots of gorgeous flowers. Their blooms were outstanding both in the garden and in the vase. Several gardeners noted the vigor of *'Cut and Come Again'*, whether it was recuperating from a hailstorm or a harvesting of flowers. Gardeners who liked *'Oklahoma Mix'* were especially impressed with the wide array of colors in the mix.

#42. Zinnia, Tall. 9 sites. *'Benary's Giant Mix'* (rating: 8.13; recommended: 75%; preferred: 50%) and *'State Fair Mix'* (rating: 8.50; recommended: 100%; preferred: 50%). Both varieties grew well and produced lots of large flowers. *'State Fair Mix'* was recommended by all gardeners. Several gardeners reported that this mix bloomed a few days earlier and everyone was impressed with the large size of the flowers. *'Benary's Giant Mix'* also rated highly. Its blooms were slightly smaller, but had more petals, making them look fuller. The blooms of *'Benary's Giant Mix'* were vibrant and maintained their brightness when used as a cut flower.



'Peppermint Stick Mix' Zinnia



'Persian Carpet' Zinnia



'State Fair Mix' Zinnia

'Benary's Giant Lime'
Zinnia



Photo credits: AVRDC-The World Vegetable Center (*'BeSweet 292'*); Gurney's (*'Portofino'*); Harris Seeds (*'Monet's Palette'*, *'Benary's Giant Lime'*); Johnny's Selected Seeds (*'Rocdor'*, *'Touchstone Gold'*, *'Bull's Blood'*, *'Purple Haze'*, *'Diva'*, *'Winner'*, *'Cherokee'*, *'Flashy Trout Back'*, *'Sugar Nut'*, *'Flying Saucers'*, *'Bonbon'*, *'Bright Lights'* Swiss chard, *'Moulin Rouge'*, *'Starbust Lemon Aura'*, *'Persian Carpet'*, and *'State Fair Mix'*; Jung Seed (*'Espada'*); Park Seed (*'Nelson'*); Seeds of Change (*'Bright Lights'* cosmos) and Twilley Seed (*'Jamboree'*).

Chapter 3

Vegetable Trial Reports

Trial 1. Bean, Green

Varieties (information and photos from seed catalogs)



Harris

'Bush Blue Lake 274'

55 days. Sturdy, bush plants bear a heavy crop over a long season. The pods are round, 6 inches long, very meaty, and stringless. Seeds are white and slow to develop, maintaining a long, smooth pod of delicious quality. Disease-resistant plants.

'Espada'

Bush plants bear heavy crops of slender, dark green, 6-inch pods which retain their flavor whether fresh, cooked, or frozen. Plants resist strains of bean common mosaic virus, halo blight (race 2), and anthracnose. White seeded.



Jung

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Bush Blue Lake 274' was rated at 7.11 and 'Espada' was rated at 7.67. The following are comparisons for specific qualities:

Trait	'Bush Blue Lake 274'	'Espada'	Same
Germinated best	33 %	0 %	67 %
Healthier plants	11	11	78
Matured earlier	44	44	11
Higher yields	33	33	33
More attractive pods	22	33	44
Tasted better	11	33	56

Recommendations and Preferences

'Bush Blue Lake 274' was recommended by 7 of 9 (78%) gardeners while 'Espada' was recommended by 8 of 9 (89%) gardeners. When asked to state a preference, 5 of 9 (56%) gardeners chose 'Bush Blue Lake 274'.

General Comments

- These varieties rated closely in all categories.
- Both of these varieties performed well, but neither one yielded as well as 'Contender', which I planted in another part of my garden.

Comments on 'Bush Blue Lake 274' Bean

- Matured a few days earlier. Pods were larger and had a typical green bean taste.
- Matured earlier and tasted better.
- Slightly better yield. Easier to harvest.

Comments on 'Espada' Bean

- 'Espada' had produced earlier, had longer pods, higher yields, and its plants seemed bushier.
- Pods were milder in flavor—more like a yellow bean taste. Pods were straighter, too.
- Yielded more and also had more even-sized pods. More flavor—both fresh and frozen.
- Its beans were more tender, but both varieties were good, even late in the season in October.
- Both varieties were heavily damaged from a hail storm on July 19, but 'Espada' recovered faster.

Conclusions

Both varieties performed well across the state and were recommended by the vast majority of gardeners. Both varieties got off to strong starts, produced their first pods at about the same time, and produced similar yields through the season. Gardeners were impressed with the quality of pods produced by the varieties, especially the straight, tender pods of 'Espada'.

Trial 2. Bean, Vegetable Soybean

Varieties (information and photos from seed catalogs)



AVRDC

'BeSweet 292'

85 days. The top commercial variety. Vigorous plants produce high yields of sweet soybeans for snacks.

'BeSweet 2001'

95 days. An excellent second early variety with good yields, flavor and large seed size. Bushy, 24-inch plants produce very sweet soybeans.



Rupp

Data

Data were collected at 4 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'BeSweet 292' was rated at 6.00 and 'BeSweet 2001' was rated at 5.75. The following are comparisons for specific qualities:

Trait	'BeSweet 292'	'BeSweet 2001'	Same
Germinated best	0 %	0 %	100 %
Healthier plants	33	33	33
Matured earlier	50	25	25
Higher yields	25	0	75
More attractive pods	67	0	33
Tasted better	50	0	50

Recommendations and Preferences

'BeSweet 292' was recommended by 3 of 4 (75%) gardeners while 'BeSweet 2001' was recommended by 2 of 4 (50%) gardeners. When asked to state a preference, 'BeSweet 292' was preferred by 2 of 3 (67%) gardeners.

General Comments

- Both varieties were slow to germinate, late maturing, and tedious to shell.
- Pods were not as green as I would have liked.
- We had dry weather and lots of wind in August. This reduced the yields of both varieties. Deer enjoyed eating the tops of plants. Both matured in approximately 116 days. Both tasted the same.

General Comments (continued)

- This was my first experience with vegetable soybeans. It was interesting to watch them grow. I thought they were slow maturing and if there is an early frost, they could freeze before maturity.
- Both were delicious when roasted with olive oil and salt.

Comments on 'BeSweet 292' Bean

- Tasted a little better.
- Slightly higher yields.
- Darker green beans.

Comments on 'BeSweet 2001' Bean

- Its plants were very healthy and matured earlier than those of 'BeSweet 292'.

Conclusions

Many growers were not familiar with vegetable soybeans and they experienced mixed results. Some growers did not like the flavor of this vegetable nor the work involved in shelling the pods. Many gardeners expressed problems with rabbits and deer eating the plants. Neither variety generated much enthusiasm. In our limited testing, 'BeSweet 292' showed a slight edge for earlier maturity, higher yield, and superior eating quality. Both varieties matured very late for our short season. 'BeSweet 292' is the earliest maturing of the leading varieties on the market and is a good choice for our gardens today.

Trial 3. Bean, Wax

Varieties (information and photos from seed catalogs)

Johnny's



'Carson'

52 days. New in 2007. Slim pods average 5.5 inches and are flavorful and tender. Plants are vigorous and productive.

'Rocdor'

52 days. Deep yellow, slender, and meaty pods are especially long, up to 6.5 inches. Upright plants. Black seeds germinate well in cool soils.



Johnny's

Data

Data were collected at 5 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Carson' was rated at 5.00 and 'Rocdor' was rated at 7.75. The following are side-by-side comparisons for specific qualities:

Trait	'Carson'	'Rocdor'	Same
Germinated best	20 %	60 %	20 %
Healthier plants	20	60	20
Matured earlier	20	20	60
Higher yields	20	60	20
More attractive pods	40	60	0
Tasted better	0	20	80

Recommendations and Preferences

'Carson' was recommended by 2 of 5 (40%) gardeners while 'Rocdor' was recommended by 3 of 5 (60%) gardeners. When asked to state a preference, each variety was preferred by 2 of 4 (50%) gardeners.

General Comments

- We picked four times and got two 5-gallon pails each time.

Comments on 'Carson' Bean

- A blight struck all of my beans and 'Carson' had the highest mortality rate. About half of the plants died at the 2–3-leaf stage.
- Its pods were yellow from tip to tip—more attractive than those of 'Rocdor'—and I would like to grow this variety again.
- Produced very well. Plants were healthier. We prefer its larger pods.

Comments on 'Rocdor' Bean

- Plants grew more vigorously. Produced three times the yield. Much better overall. It is a waste of space to plant 'Carson'.
- Larger, more vigorous plants. Pods were set higher on the plants. The pods were straighter and lasted well on the plants for farmers market. They canned much better—the ends of pods did not look rusty after canning.

Conclusions

Our soils were unusually cool in spring and the black-seeded 'Rocdor' got off to a strong start. Its plants grew well and produced higher yields compared to the plants of 'Carson'. Most gardeners preferred the deeper yellow, more slender pods of 'Rocdor'. 'Carson' is a fine variety, but it got off to a slow start and never seemed to catch up to the performance levels of 'Rocdor'.

Trial 4. Bean, Yardlong

Varieties (information and photos from seed catalogs)



Johnny's

'Gita'

78 days. Dark green pods, thin as a pencil and up to 20 inches long. Widely adapted, but grows better under warm conditions. Needs a tall trellis. Black seeds.

'Liana'

80 days. Tender, dark green pods have asparagus-like flavor when steamed or stir-fried. Pods grow up to 25 inches long. Vines grows best under warm temperatures, reaching up to 8 feet tall. Black seeds.



Vermont Bean

Data

Data were collected at 13 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Gita' was rated at 5.85 and 'Liana' was rated at 5.69. The following are side-by-side comparisons for specific qualities:

Trait	'Gita'	'Liana'	Same
Germinated best	42 %	25 %	33 %
Healthier plants	42	17	42
Matured earlier	33	25	42
Higher yields	25	25	50
More attractive pods	18	18	64
Tasted better	9	9	82

Recommendations and Preferences

Each of the varieties was recommended by 7 of 13 (54%) gardeners. When asked to state a preference, 'Liana' was preferred by 7 of 12 (58%) gardeners.

General Comments

- We picked at least four times and had at least one and a half 5-gallon pails each time. The pods of both varieties tasted the same.
- I've never grown these beans before but they taste great! Cool temperatures, hail, and strong winds set maturity back.
- Both germinated well. Both were very "viney" and needed support. My family did not really care for the flavor and texture of either of the beans.
- These beans are fun to grow but neither tasted as good as regular 'Blue Lake' beans.
- These beans were not very impressive. They only grew about 2-feet-tall!

Comments on 'Gita' Yardlong Bean

- Healthier plants and seven times more yield.
- The plants were especially healthy and produced more pods than 'Liana'.
- Slightly better than 'Liana' in all aspects.
- It was a healthier, nicer looking plant. It barely produced any pods, although the plants of 'Liana' produced even less.
- Its overall performance was nearly identical to 'Liana', but I appreciate its earlier maturity.
- Germinated better and had healthier plants.

Comments on 'Liana' Yardlong Bean

- More seeds germinated and the plants grew faster. Matured one week earlier and produced longer pods. Better performance overall.
- Higher yields.
- Better germination. Hail hit us two weeks after germination—the 'Liana' plants withstood the hail better.
- Matured earlier.
- More attractive pods and higher yields than 'Gita'. Great tasting.
- Harvest period was longer.

Conclusions

In spite of our cool temperatures, both varieties of this heat-loving vegetable grew well at most gardens. 'Gita' showed a slight edge in germination and plant vigor. Yields and bean quality were very similar among the varieties. Most gardeners had fun growing these beans, but nearly one-third of testers disliked both varieties due to the asparagus-like taste.

Trial 5. Beet

Varieties (information and photos from seed catalogs)

Harris



'Red Ace'

50 days. One of the best all-around beets. The round, smooth, deep red roots develop quickly, with high uniformity. They maintain their sweet tenderness when larger and older. Medium tall, red-veined greens.

'Red Cloud'

55 days. Roots have high sugar content, smooth shape, and intense red color with no zoning. Tops are strong. Superb diced, sliced or as whole baby beets. Has long holding ability.



Jung

Data

Data were collected at 11 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Red Ace' was rated at 7.80 and 'Red Cloud' was rated at 6.89. The following are side-by-side comparisons for specific traits:

Trait	'Red Ace'	'Red Cloud'	Same
Germinated best	70 %	0 %	30 %
Healthier plants	22	0	78
Matured earlier	33	22	44
Higher yields	56	22	22
More attractive roots	22	33	44
Tasted better	11	0	89

Recommendations and Preferences

'Red Ace' was recommended by 11 of 11 (100%) gardeners while 'Red Cloud' was recommended by 8 of 10 (80%) gardeners. When asked to state a preference, 'Red Ace' was preferred by 6 of 9 (67%) gardeners.

General Comments

- Both were deep red with very little zoning—even when very large. Both were nice beets. The germination was excellent.
- Both varieties were good for pickling.
- Hail flattened our garden on July 19, but the beets came back well.
- The varieties performed similarly for all traits.
- The roots of both varieties were nice and dark in color throughout. They did not get as large as roots of other varieties I've previously planted.

Comments on 'Red Ace' Beet

- You could really see how quickly they germinated. Overall this variety showed a much better plant and root.
- The plants of 'Red Ace' germinated more evenly and grew bigger, faster, and had more uniform beets. They also had much more flavor.
- Best all around—by a slight margin.
- Just a bit more production.
- Good tasting beet greens. Slightly higher yields.
- Seemed very hardy even after the hail.
- More seedling vigor.
- Roots were smaller and slightly easier to pull.

Comments on 'Red Cloud' Beet

- Earlier maturity. Larger, more attractive beets. The planting required less thinning. Perhaps this was because of lower emergence, but it seemed more like a self thinning where the weaker seedlings died off when dominated by a larger plant.
- Beets were more uniform in size.
- Matured earlier and beets grew larger.

Conclusions

Every gardener liked the performance of 'Red Ace'. It showed exceptional seedling vigor and very impressive yields. 'Red Cloud' also did very well at most sites and was highly recommended. The roots of both varieties were deep red with very little zoning. They tasted excellent and were very good for pickling. Many of the gardens were affected by hailstorms, but both varieties recuperated nicely.

Trial 6. Beet, Golden

Varieties (information and photos from seed catalogs)



Jung

'Burpee Golden'

55 days. Sweet, deep golden roots. Nonstaining juice. Tops are light green with pale golden ribbing on stems.

'Touchstone Gold'

55 days. New in 2008. Smooth, round roots with bright golden color. Roots retain their color when cooked. Green stems and leaves.



Johnny's

Data

Data were collected at 11 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Burpee Golden' was rated at 5.10 and 'Touchstone Gold' was rated at 8.18. The following are side-by-side comparisons for specific qualities:

Trait	'Burpee Golden'	'Touchstone Gold'	Same
Germinated best	9 %	55 %	36 %
Healthier plants	10	50	40
Matured earlier	20	70	10
Higher yields	20	60	20
More attractive roots	0	40	60
Tasted better	0	56	44

Recommendations and Preferences

'Burpee Golden' was recommended by 4 of 11 (36%) gardeners while 'Touchstone Gold' was recommended by 9 of 11 (82%) gardeners. When asked to state a preference, 'Touchstone Gold' was preferred by 9 of 11 (82%) gardeners.

General Comments

- We took some of the red and golden beets to the farmers market. Most of the customers favored the red beet. Most of the customers did not know the golden variety was a beet—they thought it was a radish.
- Both had a nice sweet taste that held up well when cooked/steamed.
- Their roots were thin and easy to eat.
- My neighbor who eats beet greens regularly said both varieties were good.

Comments on 'Burpee Golden' Beet

- Its superior germination led to more yield.
- Poor germination. Plants did not grow well and the roots were small.
- Larger tops and healthy plants.
- Roots were bitter if not peeled.
- These plants failed due to cool weather or an insect pest—I couldn't determine. The plants would wither and then break the root. Neither variety grew well, but at least I got a few beets from the row of 'Touchstone Gold'.

Comments on 'Touchstone Gold' Beet

- It was far better in all areas. Better germination, bigger plants, matured earlier, and its roots were double the size compared to 'Burpee Golden'.
- Nice, full leaves. Earlier maturity. Higher yields. Roots have no funny bumps or angles. These beets sliced up nice and stayed firm.
- Had a sweet, mild, buttery taste.
- Tasted sweeter than 'Burpee Golden'.
- 'Touchstone Gold' is way more vigorous!
- Tasted fine.

Conclusions

The new variety 'Touchstone Gold' is a dramatic improvement over the old standard variety 'Burpee Golden'. 'Touchstone Gold' was superior in all traits including plant vigor, earliness, yield, and root quality. Its roots were especially smooth and uniform with a bright golden color. Gardeners liked its sweetness, too. Customers are much more familiar with red-colored beets, but this new golden variety may open eyes in the future.

Trial 7. Beet, Specialty

Varieties (information and photos from seed catalogs)

Johnny's



'Bull's Blood'

58 days. Heirloom variety produces beautiful, dark red leaves useful for salad mixes. The foliage color intensifies as the plant matures. Roots show attractive candy-striped zoning when sliced.

'Chioggia'

55 days. Vivid red rings contrast beautifully with the flesh. The smooth, medium-height tops are all green with pink-striped stems. Sweet flavor. This striking Italian variety is a standard in U.S. specialty markets.



Johnny's

Data

Data were collected at 12 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Bull's Blood' was rated at 8.00 and 'Chioggia' was rated at 6.60. The following are side-by-side comparisons for specific traits:

Trait	'Bull's Blood'	'Chioggia'	Same
Germinated best	40 %	10 %	50 %
Healthier plants	70	0	30
Matured earlier	30	40	30
Higher yields	50	30	20
More attractive leaves	80	0	20
More attractive roots	40	30	30
Tasted better	70	10	20

Recommendations and Preferences

'Bull's Blood' was recommended by 11 of 12 (92%) gardeners while 'Chioggia' was recommended by 8 of 12 (67%) gardeners. When asked to state a preference, 'Bull's Blood' was preferred by 7 of 10 (70%) gardeners.

General Comments

- The leaves of the two varieties have different colors but tasted the same.
- We had a lot of rain this year, but both varieties grew very well. They both had big bushy leaves.
- Roots of 'Chioggia' were light red and easier on fingers when canning (less staining), but 'Bull's Blood' looked nicer in the jar. Both had good flavor in leaf and root.
- Both beets were excellent for pickling.

Comments on 'Bull's Blood' Beet

- The color is outstanding. The flavor is smooth yet hearty.
- Much better color, firmness, and flavor.
- Healthier, very colorful leaves and stems, but poor root growth.
- Thicker skin, mild beet taste. Roots were bigger and more consistent in size.
- 'Bull's Blood' leaf had a deep red look as did the stalk; nice change of pace in the garden. This would make a great accent plant in flower pots.

Comments on 'Chioggia' Beet

- Big, green, lush leaves. Nice roots.
- Very mild in flavor, almost tasteless.
- Matured much earlier with uniform-sized beets. Much sweeter and more attractive. Taste was fantastic.
- Matured 8 days earlier, outyielded, and had larger roots compared to 'Bull's Blood'. For canning and freezing, 'Chioggia' was more abundant and stained the fingers less.
- Its pink appearance doesn't look so good.
- Germinated well, but then stalled. The beets were tiny and small.

Conclusions

Most gardeners preferred 'Bull's Blood' for its healthier growth and higher yields. Its red leaves were as beautiful as advertised—"good enough to plant in a flower pot", said one gardener. Its dark red roots were very flavorful. 'Chioggia' also grew well, but gardeners expressed mixed feelings toward its pink rings and very mild flavor. Both varieties were good for pickling.

Trial 8. Carrot

Varieties (information and photos from seed catalogs)



Park

'Nelson'

55 days. A very early variety with sweet flavor and outstanding tolerance to heat. The roots of this hybrid are deep orange, smooth, 6 inches long, with blunt tips.



Harris

'Scarlet Nantes'

65 days. Popular market variety. Bright orange roots, 6–7 inches long, are sweet and crisp. Longtime favorite.

Data

Data were collected at 11 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Nelson' was rated at 7.20 and 'Scarlet Nantes' was rated at 6.60. The following are comparisons for specific qualities:

Trait	'Nelson'	'Scarlet Nantes'	Same
Germinated best	36 %	9 %	55 %
Healthier plants	20	20	60
Matured earlier	40	0	60
Higher yields	40	20	30
More attractive roots	44	56	0
Tasted better raw	50	38	13
Tasted better cooked	20	20	60

Recommendations and Preferences

'Nelson' was recommended by 7 of 10 (70%) gardeners while 'Scarlet Nantes' was recommended by 5 of 10 (50%) gardeners. When asked to state a preference, 'Nelson' was preferred by 6 of 10 (60%) gardeners.

General Comments

- Both varieties germinated nicely—had to thin rows twice. Both varieties had strong tops and were very good overall.
- Carrots of both varieties were uniform in size and shape.
- Neither variety produced roots as large as expected.
- I don't recommend either. Both varieties had poor germination and very low yields compared to the varieties I have grown in the past.

Comments on 'Nelson' Carrot

- Overall I like this better because it is a fatter carrot. Slightly better taste, too.
- Faster growth and greater yield.
- Its skinny necks easily separated from the tops when harvesting. Tended to develop "Michelin Man" rings—bumpy to peel. Roots were not as tender compared to 'Scarlet Nantes'.
- Roots were very nice, straight, and full. We could use 80–90% of them. Taste was very sweet.
- Both varieties germinated well but the seedlings of 'Nelson' grew faster. It matured real early but a few roots split open. Sweet, but not as crisp in flavor compared to 'Scarlet Nantes'.

Comments on 'Scarlet Nantes' Carrot

- Germinated earlier and more evenly. Slightly higher yields. Larger roots. Better taste when eaten raw.
- Its slender, tapered roots looked better than the round, blunt roots of 'Nelson'.
- Its roots were 6 inches long and uniform. Attractive roots. Sweeter than 'Nelson' when cooked.

Conclusions

Most gardeners preferred 'Nelson'. This hybrid grew more vigorously, matured earlier, and produced higher yields than the old-time favorite, 'Scarlet Nantes'. Gardeners liked the flavor of 'Nelson', especially when raw. Several gardeners liked 'Scarlet Nantes', especially for its bright orange, slender roots and its flavor when cooked. Several gardeners struggled to establish good stands of either variety due to cold, dry weather in spring followed by a series of storms.

Trial 9. Carrot, Purple

Varieties (information and photos from seed catalogs)

Seed Savers Exchange



'Dragon'

90 days. A most refined purple carrot. The beautiful reddish-purple exterior provides an attractive contrast with the yellowish-orange interior when peeled or sliced. Sweet, almost spicy flavor.

'Purple Haze'

70 days. The roots are smooth with purple exterior and bright orange centers. The color presentation when cut is vivid. Its flavor is excellent both raw and cooked, but the purple color dissolves with cooking. Vigorous tops.



Johnny's

Data

Data were collected at 19 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Dragon' was rated at 6.19 and 'Purple Haze' was rated at 8.00. The following are side-by-side comparisons for specific traits:

Trait	'Dragon'	'Purple Haze'	Same
Germinated best	58 %	11 %	32 %
Healthier plants	35	18	47
Matured earlier	41	35	24
Higher yields	53	41	6
More attractive roots	18	65	18
Tasted better raw	24	59	18
Tasted better cooked	38	23	38

Recommendations and Preferences

'Dragon' was recommended by 9 of 17 (53%) gardeners while 'Purple Haze' was recommended by 15 of 17 (88%) gardeners. When asked to state a preference, 11 of 16 (69%) gardeners preferred 'Purple Haze'.

General Comments

- I really liked both of these carrots. Definitely will plant them again.
- Both varieties were healthy and matured at similar times. Both had nicely shaped roots. Roots were more bitter compared to regular orange carrot varieties; this bitterness was lost when roots were cooked. Cooking the roots causes the water (or cream sauce) to turn purple.
- Purple carrots are fun to grow, but didn't seem as sweet as regular orange carrots.

Comments on 'Dragon' Carrot

- Grew better, produced higher yields, and had a little more flavor.
- Better germination. Straighter roots. Looked better from the outside, but was inconsistent in color when cut; sometimes the core was yellowish. The roots tasted bitter when eaten raw.
- Better germination, more attractive root. Its roots were larger and had a more even purple skin color.
- Developed into harvestable size up to one month earlier than 'Purple Haze'. Higher yields, but many large roots split prior to harvest. Has more a traditional carrot taste when cooked.

Comments on 'Purple Haze' Carrot

- Its dark purple color goes one-quarter ways through the carrot. Bright orange core.
- My grandchildren preferred this variety because of the color being darker and deeper into the carrot. The color contrasted nicely.
- Grew slower in spring, but caught up later. Kids loved them as a raw snack. Tender when cooked.
- More uniform roots. Sweeter taste (especially when eaten raw). Didn't split when kept in ground to mature. Retained its eye appeal after peeling.

Conclusions

Most gardeners preferred 'Purple Haze' for its uniform, tapered carrots with beautiful contrasting colors. It had a sweet, mild flavor that was especially good when eaten raw. It performed well at almost every site. Many gardeners noted the impressive germination, growth, and yields of 'Dragon'. Most gardeners felt that 'Dragon' was bitter when eaten raw, but very flavorful when cooked.

Trial 10. Carrot, Red

Varieties (information and photos from seed catalogs)



Johnny's

'Atomic Red'

70 days. The lycopene-rich roots are coral-red and 9 inches long. This variety is best cooked to deepen the color and improve the texture and flavor, which is rather strong when eaten raw. Medium-small tops.

'Samurai Red'

75 days. New in 2008. Rosy red roots have a bold, sweet flavor, particularly when cooked. Slim, tapered roots reach 11 inches. Roots retain red color when steamed.



Territorial

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Atomic Red' was rated at 5.00 and 'Red Samurai' was rated at 3.50. The following are side-by-side comparisons for specific traits:

Trait	'Atomic Red'	'Samurai Red'	Same
Germinated best	0 %	78 %	22 %
Healthier plants	63	0	38
Matured earlier	25	25	50
Higher yields	57	14	29
More attractive roots	25	25	50
Tasted better raw	57	14	29
Tasted better cooked	67	0	33

Recommendations and Preferences

'Atomic Red' was recommended by 4 of 8 (50%) gardeners while 'Red Samurai' was recommended by 2 of 9 (22%) gardeners. When asked to state a preference, 5 of 7 (71%) gardeners preferred 'Atomic Red'.

General Comments

- Both varieties had healthy looking plants. The roots of each variety were an attractive color that stood out next to regular orange carrots.
- These carrots are not as sweet as orange carrots when cooked.
- Neither variety looked good; both had hairy carrots and tasted bitter.
- Only a few seeds germinated.

Comments on 'Atomic Red' Carrot

- Good color. Tasted slightly different than "usual" carrots ('Nantes', etc.).
- Tasted better, both cooked and raw.
- Tasted bitter when raw, but could not taste the difference between the varieties when cooked.
- Longer and larger roots than 'Red Samurai'.
- Tasted much sweeter cooked, but I didn't really like them.

Comments on 'Red Samurai' Carrot

- The roots were too hard to eat.
- About 10% of the plants flowered! The roots were closer to a true red, but tasted bitter. I was not really impressed with either red variety, but 'Samurai Red' was a real underachiever.
- Its plants germinated earlier and grew thicker and healthier. Its carrots were larger, although neither variety produced marketable roots.
- A few 'Red Samurai' carrots grew normally—these tasted sweeter than 'Atomic Red'—but I didn't like either one. The roots were woody.

Conclusions

Gardeners did not like either variety. 'Samurai Red' germinated well, but everything went downhill from there. Most gardeners noted bolting problems and poor root development for this variety. Its roots were hard and bitter. 'Atomic Red' was the better performer in this trial. It produced much higher yields and its roots were less bitter. Lycopene is better absorbed by the body when cooked and this is the only way that these red carrot varieties should be consumed. They are not as sweet or as tender as traditional orange carrots.

Trial 11. Cucumber, Beit Alpha

Varieties (information and photos from seed catalogs)

Johnny's



'Diva'

58 days. This award winner has a sweet, mild flavor. The disease-resistant vines yield lots of spineless, tasty cukes. The all-female flowers don't require pollen to set fruit, so yields are higher and fruits are nearly seedless.

'Sultan'

58 days. New in 2007. Crispy, sweet cukes are produced on a vigorous vine. Cukes are medium-green, slightly ribbed, firm, and glossy. A Middle Eastern type that will yield well through the summer.



Veseys

Data

Data were collected at 11 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Diva' was rated at 7.14 and 'Sultan' was rated at 6.63. The following are side-by-side comparisons for specific qualities:

Trait	'Diva'	'Sultan'	Same
Germinated best	27 %	9 %	64 %
Healthier plants	9	27	64
Matured earlier	25	50	25
Higher yields	13	25	63
More attractive cukes	57	14	29
Tasted better	38	25	38

Recommendations and Preferences

'Diva' was recommended by 8 of 8 (100%) gardeners while 'Sultan' was recommended by 5 of 8 (63%) gardeners. When asked to state a preference, 4 of 6 (67%) gardeners chose 'Diva'.

General Comments

- They were very similar—both were excellent choices for North Dakota.
- Plants germinated, but then our crop failed. Too much rain and cool temps.
- I'm sorry to say I did not have too much luck. I planted on June 7, but that night we had a very heavy rain, which washed out most seeds. The surviving plants grew well, but then we got hail eight times and that took care of the plants. So I only harvested a few cucumbers.
- Neither variety did well. It was a poor year for cucumbers. I would like to try both varieties again.

Comments on 'Diva' Cucumber

- Its cucumbers were better tasting, uniform, good looking, and had smooth flesh. They were slower to get seedy, too.
- Cukes were more uniform and straighter.
- Produced more and the cucumbers were very good tasting.
- 'Diva' was good for both baby dills and slicers.
- Bloomed a lot toward the end of the season, but didn't set fruit.

Comments on 'Sultan' Cucumber

- Matured about one week earlier. Cucumbers had a nice, narrow, even shape. They were crisp, tender and mild, but with a larger seed cavity than 'Diva'. I've previously planted and liked 'Diva' cucumbers, but I'm now a 'Sultan' fan—just a bit more reliable ('Diva is occasionally bitter).
- Vines grew better, but its cucumbers tasted extremely bitter.
- Healthier vines—fewer brown patches on leaves.
- Plants grew quite a bit larger and were healthier.

Conclusions

This was a terrible growing season for cucumbers. Crops suffered from unseasonably cool temperatures, rain storms when seeds were germinating, and then several hail storms during summer. Among those gardeners with successful crops, all recommended 'Diva' and most preferred it over 'Sultan'. The cukes of 'Diva' were more attractive, uniform, better tasting, and slow to get seedy. The vines of 'Sultan' were more vigorous, healthy, and slightly more productive.

Trial 12. Cucumber, Burpless

Varieties (information and photos from seed catalogs)



Veseys

'Sweet Slice'

63 days. Very mild and sweet. The skin is tender and free of bitterness, so the cukes can be eaten without peeling. Harvest when cukes are 8 inches long. Disease-resistant vines produce high yields over a long season.



Jung

'Tasty Green'

62 days. Crisp, juicy, fruits are slender, dark green, and smooth skinned. Mild flavor. Best harvested when 10 inches long. Plants have good disease resistance. Use a trellis for straighter fruits.

Data

Data were collected at 20 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Sweet Slice' was rated at 7.72 and 'Tasty Green' was rated at 6.33. The following are side-by-side comparisons for specific traits:

Trait	'Sweet Slice'	'Tasty Green'	Same
Germinated best	25 %	30 %	45 %
Healthier plants	37	37	26
Matured earlier	44	39	17
Higher yields	29	35	35
More attractive cukes	56	28	17
Tasted better	65	18	18

Recommendations and Preferences

'Sweet Slice' was recommended by 16 of 17 (94%) gardeners while 'Tasty Green' was recommended by 7 of 17 (41%) gardeners. When asked to state a preference, 12 of 17 (71%) gardeners chose 'Sweet Slice'.

General Comments

- Both varieties were good tasting.
- Plants were very healthy—no problems.
- Their cucumbers tasted exactly the same.
- I prefer my regular 'Straight Eight' cukes over both of these. They both have a low yields and a short shelf life after picking.
- By September, plants of both varieties looked poor. Their cucumbers had tendency to curl.
- Neither plant bore any cukes. Weather was terrible for cukes. Too much drought here.

Comments on 'Sweet Slice' Cucumber

- Cukes were sweeter, tasty, and had small seeds. Cukes were more uniform in size.
- These cucumbers taste much better than those of any variety I have tasted in the past.
- Plants grew uniformly and were healthy. Vines were more productive and yielded earlier. The cucumbers were longer and uniform. No bitter taste—nice.
- The 'Sweet Slice' vines were much healthier, produced fruit first, and more fruit. Their fruits were much more uniform and crisper to eat.
- Longer shelf life after harvesting.

Comments on 'Tasty Green' Cucumber

- Vines grew faster and produced longer into the season. The cucumbers were nice and long, but didn't have much flavor.
- Still producing when 'Sweet Slice' plants had dried up in mid-September. More attractive, straighter fruits. Their fruit was twice as long.
- The taste was awesome—no bitter taste—just a cool flavor that was better than any cucumber I have ever tasted.
- Excellent yields, but cukes taste like kohlrabi.

Conclusions

'Sweet Slice' was preferred because of its very attractive, tasty cucumbers. Gardeners especially liked the uniformity and crispness of the fruit. Vines of both varieties were healthy, but gardeners were especially impressed with the late season vigor and yields of 'Tasty Green'. The cucumbers of 'Tasty Green' looked nice, but gardeners expressed mix reviews on their flavor.

Trial 13. Kohlrabi

Varieties (information and photos from seed catalogs)

Territorial



'Superschmelz'

60 days. Produces giant, 8–10-inch bulbs that taste sweet and tender. Best quality is obtained when sown in summer and harvested in fall.

'Winner'

50 days. This kohlrabi hybrid has a fresh, fruity taste. High yields of large, pale green bulbs.



Johnny's

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Superschmelz' was rated at 5.22 and 'Winner' was rated at 6.33. The following are side-by-side comparisons for specific traits:

Trait	'Superschmelz'	'Winner'	Same
Germinated best	11 %	44 %	44 %
Healthier plants	11	44	44
Matured earlier	22	67	11
Higher yields	33	56	11
More attractive bulbs	33	11	56
Tasted better	33	44	22

Recommendations and Preferences

'Superschmelz' was recommended by 2 of 9 (22%) gardeners while 'Winner' was recommended by 6 of 9 (67%) gardeners. When asked to state a preference, 6 of 9 (67%) gardeners chose 'Winner'.

General Comments

- The bulbs of both varieties had excellent flavor.
- I could not tell any difference in their taste.
- Bulbs of both varieties were attractive.
- Both responded well after the hail. Plants were healthy.
- Both varieties were attacked by flea beetles, which ate all of the leaves.

Comments on 'Superschmelz' Kohlrabi

- The bulbs have a "melt in your mouth" flavor, but only after cooking.
- Didn't produce well. The plants never got going.
- They did not mature until late fall. Only eight plants matured, but they grew large and looked real nice (3 pounds). They were juicy, tender, and large when picked after frost.
- Seeds germinated slower and more sporadically.
- 'Superschmelz' did not perform in the drought nearly as well.

Comments on 'Winner' Kohlrabi

- Matured at least two weeks earlier.
- More bulbs, although smaller. 'Winner' has a much better taste, especially when eaten raw.
- Produced larger and heartier veggies. Flavor was more firm and not as bitter.
- Matured 10 days earlier and outyielded 'Superschmelz'. Very mellow and pleasing flavor, even when oversized.
- Bigger plants and healthier leaves, but did not develop many bulbs at all.
- The bulbs were small (tennis ball size). Not much flavor to them, and dry.

Conclusions

'Winner' lived up to its name. It grew more vigorously and matured much earlier than 'Superschmelz'. 'Winner' produced high yields of tender, flavorful bulbs. 'Superschmelz' was less adaptable to adverse weather and slower to grow. The few bulbs that did size up were most impressive, and tasted good when cooked.

Trial 14. Lettuce, Batavia

Varieties (information and photos from seed catalogs)



Johnny's

'Cherokee'

48 days. A Batavia-type lettuce noted for its thick crisp, dark red leaves with good flavor. Very slow bolting with excellent tolerance to heat and bottom rot. Resistant to several races of downy mildew.



Johnny's

'Teide'

48 days. New in 2007. Dark red frilly leaves have mild, juicy, gourmet-quality flavor. Leaves resist tip burn and bolting. Resistant to several races of downy mildew.

Data

Data were collected at 7 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Cherokee' was rated at 6.86 and 'Teide' was rated at 6.57. The following are side-by-side comparisons for specific qualities:

Trait	'Cherokee'	'Teide'	Same
Germinated best	29 %	0 %	71 %
Healthier plants	0	14	86
Matured earlier	29	14	57
Higher yields	57	0	43
More attractive heads	14	57	29
Tasted better	43	29	29

Recommendations and Preferences

Each variety was recommended by 5 of 7 (71%) gardeners. When asked to state a preference, 5 of 7 (71%) gardeners chose 'Cherokee'.

General Comments

- Both varieties were great. There was a long harvesting season without getting bitter.
- When I first picked, I got a total of 3 pounds from both varieties, though 'Cherokee' produced more.
- Neither variety bolted. Both had nice red color. Both became bitter at the same time.
- Both varieties were rather bland. I expected bigger and more leaves.
- Growth was okay, but slower than expected.
- Both varieties needed a long growing season. I sowed seed on June 10 and they did not mature until October.

Comments on 'Cherokee' Lettuce

- Very attractive, curly leaves—better for a salad.
- Easier to wash as its leaves are flat, no frills. Slightly larger leaves, too.
- Very beautiful in the garden.

Comments on 'Teide' Lettuce

- Milder, sweeter.
- Flavor was better.
- I like the unique texture of 'Teide'.
- 'Teide' would look good in a bouquet.

Conclusions

Both varieties performed well in our trials. Gardeners were impressed with the heat tolerance of both varieties, leading to a long harvest season. 'Cherokee' was preferred for its higher yields and crisper texture. The dark red leaves of 'Cherokee' were attractive, but could not match the gorgeous, frilly leaves of 'Teide.'

Trial 15. Lettuce, Butterhead

Varieties (information and photos from seed catalogs)

Johnny's



'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.

'Harmony'

68 days. Produces heads with glossy, deep green leaves. The heads are large with excellent internal quality. Very uniform. Good tolerance to bolting, tip burn and several downy mildew races.



Harris

Data

Data were collected at 5 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Buttercrunch' was rated at 7.20 and 'Harmony' was rated at 6.40. The following are side-by-side comparisons for specific traits:

Trait	'Buttercrunch'	'Harmony'	Same
Germinated best	60 %	0 %	40 %
Healthier plants	0	60	40
Matured earlier	60	0	40
Higher yields	40	40	20
More attractive heads	0	20	80
Tasted better	60	20	20

Recommendations and Preferences

'Buttercrunch' was recommended by 3 of 5 (60%) gardeners while 'Harmony' was recommended by 4 of 5 (80%) gardeners. When asked to state a preference, 3 of 5 (60%) gardeners chose 'Buttercrunch'.

General Comments

- Both varieties had excellent germination rates (near 100%) and produced attractive heads.
- Both varieties got strong and bitter tasting by the beginning of August, of course.
- The heads of both varieties are attractive. 'Buttercrunch' grew like romaine, while 'Harmony' grew into pretty green flower heads.

Comments on 'Buttercrunch' Lettuce

- Germinated much earlier and matured a few days earlier than 'Harmony'. The overall flavor of 'Buttercrunch' was wonderful—my neighbors and I felt that 'Harmony' tasted bitter. 'Buttercrunch' made a nice salad and was good for sandwiches. We were short of water in our area but 'Buttercrunch' still stayed sweet.
- Stayed tender longer through the season, although its leaves developed brown tips.
- Bolted much faster.
- Didn't get bitter. Didn't go to seed early.

Comments on 'Harmony' Lettuce

- Produced a larger plant (33% bigger) and was sweeter tasting.
- Regrew fastest after harvesting.

Conclusions

Gardeners liked both varieties. The slight edge went to 'Buttercrunch' for its earlier maturity and superior taste. Its flavor did not get bitter until late in summer. Gardeners liked 'Harmony' for its exceptional vigor and resistance to bolting, but its heads had a tendency to get bitter faster.

Trial 16. Lettuce, Romaine Spotted

Varieties (information and photos from seed catalogs)



Johnny's

'Flashy Trout Back'

55 days. Gorgeous medium green leaves and splotches of maroon. Superior flavor. Tolerates heat.



Veseys

'Freckles'

70 days. A tender, beautiful green romaine lettuce splashed with red.

Data

Data were collected at 8 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Flashy Trout Back' was rated at 7.86 and 'Freckles' was rated at 7.14. The following are side-by-side comparisons for specific traits:

Trait	'Flashy Trout Back'	'Freckles'	Same
Germinated best	25 %	0 %	75 %
Healthier plants	14	14	71
Matured earlier	14	14	71
Higher yields	29	0	71
More attractive heads	29	0	71
Tasted better	14	29	57

Recommendations and Preferences

Each variety was recommended by 6 of 7 (86%) gardeners. When asked to state a preference, 5 of 7 (71%) gardeners chose 'Flashy Trout Back'.

General Comments

- Both varieties were very disease resistant. These varieties are very similar. I loved both. Neither variety bolted until mid-August.
- They tasted good but looked funny.
- These both produced outstanding heads of lettuce, but the harvest didn't last very long.
- Both did well—germinated at the same time—looked alike. They grew alike—strong with soft leaves—and looked almost identical.
- Both varieties were equally good. Neither variety produced heads—it was more like a leaf lettuce. I prefer 'Buttercrunch' lettuce.

General Comments (continued)

- Both varieties produced nice leaves/heads, but tasted a little bitter—I did not like. This could be that we were in a drought—didn't have much of any rain; most of moisture was from watering.
- Only a few plants survived our hailstorm.
- Both varieties failed to head—they produced floppy leaves.

Comments on 'Flashy Trout Back' Lettuce

- Tasted better. Larger leaves.
- Slightly higher yields. Taste was bitter compared to 'Freckles'.

Comments on 'Freckles' Lettuce

- Harvest of 'Freckles' began just a little earlier and continued longer into the season. Superior taste—no bitterness.

Conclusions

Gardeners were impressed with both varieties, but it was difficult to find much difference between the two. They were rated very similarly for all measured traits. Most gardeners showed a preference for 'Flashy Trout Back' due to its slightly higher yields and more attractive heads. 'Freckles' had a slight edge in taste among gardeners.

Trial 17. Melon, Galia

Varieties (information and photos from seed catalogs)

Johnny's



'Diplomat'

71 days. New in 2008. Large, 5–6-pound melons ripen very early. Aromatic, sweet green flesh and small seed cavity. Vines resist powdery mildew.

'Passport'

73 days. Large, 5–6 pound melons ripen early. Unusual green flesh and small seed cavity. Vigorous vines with some resistance to gummy stem blight. Widely adapted. From University of New Hampshire.



Jung

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Diplomat' was rated at 5.78 and 'Passport' was rated at 6.89. The following are side-by-side comparisons for specific qualities:

Trait	'Diplomat'	'Passport'	Same
Germinated best	11 %	33 %	56 %
Healthier plants	22	0	78
Matured earlier	67	11	22
Higher yields	22	22	56
More attractive melons	0	11	89
Tasted better	22	44	33

Recommendations and Preferences

'Diplomat' was recommended by 6 of 9 (67%) gardeners while 'Passport' was recommended by 5 of 9 (56%) gardeners. When asked to state a preference, 5 of 8 (63%) gardeners chose 'Passport'.

General Comments

- Both varieties had near 100% germination and had healthy vines. Their melons tasted good.
- The cool weather and late planting resulted in 4–5 melons of each that were ripe—a few days apart. Each variety had several melons that did not ripen.
- We had pretty good fruit set, considering the weather was funny this year. The melons of both varieties looked the same.
- Melons of both varieties got small cracks after cool, wet weather—causing spoilage.
- The vines of both varieties looked healthy, but their melons were not attractive.

General Comments (continued)

- Many fruit were set, but none of them ripened before frost. I harvested a few of them the night before our first frost, but after two weeks in the garage they had failed to ripen and were getting soft and rotten.
- I didn't really like these melons.

Comments on 'Diplomat' Melon

- I like the taste of 'Diplomat' much better than the taste of 'Passport'.
- Tasty and sweet—best tasting.
- Produced melons one week earlier, but did not have a good flavor at all.

Comments on 'Passport' Melon

- Its melons tasted good—better than those of 'Diplomat'—but not that great.
- Produced much higher yields.
- Bigger melons and more of them. Much sweeter and stayed fresh longer.
- The flavor of 'Passport' was much better than the other variety.
- Higher yields, more attractive melons, and tasted sweeter.

Conclusions

These varieties struggled in our cool summer weather. Many gardeners noted that each variety showed strong seedling vigor and vine growth but failed to produce a ripe melon. Nevertheless, a small majority of gardeners preferred 'Passport'. Although it ripened later, its yields were higher and its melons tasted better. Fruit rot in the field was a problem for both varieties.

Trial 18. Melon, Specialty

Varieties (information and photos from seed catalogs)



Johnny's

'Sugar Nut'

77 days. Vines produce small, 2-pound fruits. Inner flesh is sweet with a smooth texture. Small seed cavity. Harvest at forced-slip stage.

'Sun Jewel'

68 days. Oblong fruits are lemon yellow with shallow white sutures. The flesh is white, crisp when ripe, and sweet. Mildew-resistant vines produce large numbers of fruit. Fruits slip off the vine when ready.



Johnny's

Data

Data were collected at 6 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Sugar Nut' was rated at 9.00 and 'Sun Jewel' was rated at 5.00. The following are side-by-side comparisons for specific qualities:

Trait	'Sugar Nut'	'Sun Jewel'	Same
Germinated best	67 %	0 %	33 %
Healthier plants	40	0	60
Matured earlier	0	80	20
Higher yields	20	40	40
More attractive melons	80	20	0
Tasted better	100	0	0

Recommendations and Preferences

'Sugar Nut' was recommended by 5 of 5 (100%) gardeners while 'Sun Jewel' was recommended by 2 of 5 (40%) gardeners. When asked to state a preference, 4 of 4 (100%) gardeners chose 'Sugar Nut'.

General Comments

- The melons of both varieties looked nice and tasted great.
- Both varieties had healthy vines and produced lots of melons.
- This has been the hardest summer for gardening. Cool spring and cool early summer. No rain. More cold weather in August. Neither variety completely ripened. No melons were set until August 15.
- None of the seeds germinated—cool spring.
- Both varieties had problems with emergence based on our cool soil.

Comments on 'Sugar Nut' Melon

- Germinated faster. More vigorous vines. A greener fruit compared to 'Sun Jewel'. Sweeter flesh, although not very sweet.
- I prefer 'Sugar Nut' because it tasted better than 'Sun Jewel' and it germinated better. I would grow 'Sugar Nut' again.
- The melons were sweeter and had more flavor compared to melons of 'Sun Jewel'. The melons did not spoil as quickly. They kept about four weeks after picking.
- The vines of both varieties were healthy, but those of 'Sugar Nut' spread more and looked best. Its melons were sweeter and crisper.

Comments on 'Sun Jewel' Melon

- Its flesh tasted like cucumbers.
- Ripened 14 days earlier. Produced more melons than 'Sugar Nut'. I like its bold yellow rind color.
- The soft shell of its melons developed brown spots soon after ripening.
- The vines of both varieties were healthy, but those of 'Sun Jewel' dried up earlier. 'Sun Jewel's' soft shell had some spoilage spots.

Conclusions

Both varieties struggled due to the cool summer temperatures, and in some cases, no fruit ripened before the frost. Nevertheless, 'Sugar Nut' was the clear winner of this trial. Its melons were much sweeter and more flavorful than those of 'Sun Jewel'. 'Sun Jewel' again proved that it is one of the easiest melons to grow in the North; however, its flavor is rather bland.

Trial 19. Melon, Muskmelon

Varieties (information and photos from seed catalogs)

Jung



'Fastbreak'

65 days. This hybrid combines earliness with outstanding flavor. Excellent yields of attractively netted 3–4-pound fruits have thick, sweet flesh. Vines resist Fusarium wilt.

'Halona'

73 days. Early Eastern type with excellent eating quality. Large (4–6 pounds) fruit mature early. Vines resist powdery mildew races 1 & 2, and Fusarium race 2. New in 2006.



Johnny's

Data

Data were collected at 14 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Fastbreak' was rated at 6.50 and 'Halona' was rated at 6.56. The following are side-by-side comparisons for specific traits:

Trait	'Fastbreak'	'Halona'	Same
Germinated best	29 %	14 %	57 %
Healthier plants	22	22	56
Matured earlier	86	0	14
Higher yields	29	29	43
More attractive melons	29	43	29
Tasted better	43	14	43

Recommendations and Preferences

'Fastbreak' was recommended by 6 of 10 (60%) gardeners while 'Halona' was recommended by 4 of 10 (40%) gardeners. When asked to state a preference, 5 of 9 (56%) gardeners chose 'Fastbreak'.

General Comments

- They both had near 100% germination, good plants, produced fairly well, and had attractive fruits.
- Fair germination (60–70%) and healthy plants. The melons of both varieties tasted good.
- Both varieties set a good number of fruits.
- Hail hit our patch on July 19. One plant of 'Fastbreak' survived, but did not produce melons.
- Neither variety germinated at all.

Comments on 'Fastbreak' Melon

- Ripened earlier, produced more melons, and tasted better than 'Halona'.
- Melons were more uniform in size, had a brighter orange flesh, and tasted sweeter.
- Melons were slightly sweeter and had a more pleasing flavor.
- Melons were smaller but matured earlier.

Comments on 'Halona' Melon

- Vines were more vigorous and produced more melons. Melons were more globular and sweeter.
- A fair amount of melons were produced. Some melons were medium in size and a few were very small. Good tasting.
- Germinated well and had healthy plants. Produced more melons. The flesh of these melons was light in color and tasted blah.
- Vines were more prone to blight. Its melons were more attractive and tasty compared to the melons of 'Fastbreak', but were not very good.
- Larger fruits.
- It germinated better and its vines grew faster—but then hail destroyed our garden.

Conclusions

Cool summer weather slowed the growth of melons and most gardeners preferred 'Fastbreak', the earlier ripening of the two varieties. Its melons were noticeably smaller, but uniform in size and slightly sweeter (perhaps because they reached full ripeness). The melons of 'Halona' were more attractive but could not develop their full potential for flavor.

Trial 20. Pumpkin, Gray

Varieties (information and photos from seed catalogs)



Twilley

'Jamboree'

95 days. The lightly ribbed fruits are smooth and hard-shelled with a greenish-blue-gray color. They weigh 9–11 pounds. The sweet orange flesh has flavor that compares with buttercup squash. Vigorous, high-yielding vines.



Johnny's

'Jarrahdale'

100 days. Slate-gray fruits are great for both eating and decorations. The medium-sweet, orange flesh has good quality. The heavily ribbed fruits are useful for fall displays. Fruits average 6–10 pounds. Good for storage.

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Jamboree' was rated at 8.33 and 'Jarrahdale' was rated at 6.22. The following are side-by-side comparisons for specific qualities:

	'Jamboree'	Jarrahdale'	Same
Germinated best	33 %	22 %	44 %
Healthier plants	33	33	33
Matured earlier	50	13	38
Higher yields	67	33	0
More attractive fruits	67	22	11
Tasted better	50	17	33

Recommendations and Preferences

'Jamboree' was recommended by 9 of 9 (100%) gardeners while 'Jarrahdale' was recommended by 3 of 9 (33%) gardeners. When asked to state a preference, 8 of 9 (89%) gardeners chose 'Jamboree'.

General Comments

- 'Jamboree' produced a total of 6 fruits which averaged 13.7 pounds and 'Jarrahdale' produce 5 fruits which averaged 15 pounds.
- I think they'd make great seasonal decorations—a nice color contrast to orange. They are deeply ribbed, so probably would not be as good for carving jack o'lanterns.
- The vines of both varieties really spread throughout the garden. The pumpkins of both varieties baked up well—not watery—and made good pies.
- The plants grew well but our killing frost came early this year—before the fruits were mature.

Comments on 'Jamboree' Pumpkin

- Fruits are a little smoother with fewer blemishes. We prefer the taste of 'Jamboree'. It has a richer taste—similar to buttercup.
- Better yields and a superior, sweeter taste.
- Would grow for decoration only—not very tasty.
- Neater looking pumpkins.
- A sweeter taste. Tastes more like a buttercup squash.
- Its vines were slightly more vigorous and set fruit first. The fruits were greater in number and in size (30 inches in circumference compared to 26 inches for 'Jarrahdale'). Fruits were more uniform, prettier, and grayer (the fruits of 'Jarrahdale' were greener).
- We bake the seeds and the seeds of 'Jamboree' were smaller with thinner "shells".

Comments on 'Jarrahdale' Pumpkin

- These pumpkins have a unique look.
- Larger plants. Pumpkins taste good—would grow to eat.
- Very strong plants.
- Its immature fruits are much paler than those of 'Jamboree'.

Conclusions

'Jamboree' was the clear winner. It was recommended by all gardeners and was overwhelmingly preferred over 'Jarrahdale'. The fruits of 'Jamboree' matured earlier and tasted better (similar to a buttercup). Its fruits were smooth-skinned and extremely attractive as decorations. The vines of both varieties were vigorous. The fruits of 'Jarrahdale' were slightly larger in most cases.

Trial 21. Pumpkin, Seed

Varieties (information and photos from seed catalogs)



Johnny's

'Kakai'

100 days. Black-striped fruits produce large, dark green, hullless seeds; delicious when roasted. Semi-bush short vines produce 2–3 fruits per plant. Medium-size (5–8-pound) pumpkins can be used for jack o'lanterns.

'Lady Godiva'

95 days. Grown for its naked, hullless, greenish seeds. Seeds are nutritious and rich in protein; great roasted or raw. Fruits are good for jack o'lanterns but the flesh is not suitable for eating. Each vine can produce 12–15 fruits.



Seed Savers Exchange

Data

Data were collected at 6 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Kakai' was rated at 7.00 and 'Lady Godiva' was rated at 6.60. The following are side-by-side comparisons for specific qualities:

	'Kakai'	'Lady Godiva'	Same
Germinated best	0 %	33 %	67 %
Healthier plants	33	0	67
Matured earlier	0	75	25
Higher yields	0	75	25
More attractive fruits	25	50	25
Tastier seeds	33	0	67

Recommendations and Preferences

'Kakai' was recommended by 3 of 4 (75%) gardeners while 'Lady Godiva' was recommended by 5 of 6 (83%) gardeners. When asked to state a preference, 3 of 5 (60%) gardeners chose 'Kakai'.

General Comments

- Both were late maturing. It's mid-August and no fruit have been set.
- Germination was poor, but both varieties produced many pumpkins.

Comments on 'Kakai' Pumpkin

- Bush-like plants. Fruits turned orange while those of 'Lady Godiva' stayed green. Larger fruits and plumper seed. It was easy to get the seeds out of the pumpkin. The seeds are tastier (nutty flavor).

Comments on 'Kakai' Pumpkin (cont.)

- Vines were healthier with showier leaves and stems. Suffered less powdery mildew compared to vines of 'Lady Godiva'.
- Produced only a few pumpkins, but they were much larger—some weighed 14 and 15 pounds. The pumpkins had dark green stripes and only a couple turned orange. Good yield of seeds.
- Didn't sprout.
- Failed to germinate. The soil was shaded by a tree.

Comments on 'Lady Godiva' Pumpkin

- Its vines spread more compared to those of 'Kakai'. These vines produced more pumpkins, but the pumpkins were smaller in size.
- I like 'Lady Godiva', but its pumpkins were small.
- Fruits were smaller, but turned orange much earlier.
- Matured earlier, produced higher yields, and fruits were more attractive. Did not try to eat seeds.
- We like the size (3 pounds) of 'Lady Godiva' pumpkins. They were beautiful. The seeds were all right. Yields were low and maturity was late.

Conclusions

In our limited testing, 'Lady Godiva' matured earlier and produced more pumpkins. It was a more consistent performer than 'Kakai'. Several gardeners expressed germination problems with 'Kakai', perhaps due to our cool spring weather. Gardeners who successfully grew 'Kakai' praised the variety for the quality and quantity of its edible seeds.

Trial 22. Squash, Romanesco Summer

Varieties (information and photos from seed catalogs)



Jung

'Italian Largo'

59 days. This hybrid is very long, ribbed, and contains very few seeds. Skin is thin with alternate light green and dark green stripes. The nutty flavor is much different than zucchini. Plants are an open bush-type.



Gurney's

'Portofino'

55 days. A hybrid variety with outstanding appearance and flavor. Narrow, dark green fruits with contrasting light green ridges. Firm, crisp flesh with nutty flavor. Open, bush-type plants make it easy to harvest.

Data

Data were collected at 5 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Italian Largo' was rated at 5.60 and 'Portofino' was rated at 7.80. The following are side-by-side comparisons for specific traits:

	'Italian Largo'	'Portofino'	Same
Germinated best	20 %	20 %	60 %
Healthier plants	0	0	100
Matured earlier	0	60	40
Higher yields	60	20	20
More attractive fruits	0	60	40
Tasted better	20	40	40

Recommendations and Preferences

'Italian Largo' was recommended by 1 of 5 (20%) gardeners while 'Portofino' was recommended by 4 of 5 (80%) gardeners. When asked to state a preference, 5 of 5 (100%) gardeners chose 'Portofino'.

General Comments

- Plants of both varieties were healthy.
- Powdery mildew developed on plants of both varieties; this may have been from overhead watering.
- The fruits of both varieties tasted alike.
- Fruits of both varieties got overgrown too quickly. I need to hand peel the fruits when they grew large and did not like the hard yellowish ribs on the surface.

Comments on 'Italian Largo' Squash

- Its first fruits were later than those of 'Portofino', but the plants of 'Italian Largo' steadily produced through the season and produced a higher overall yield.
- Higher yield than 'Portofino', but lower than other summer squash I've grown.
- Fruit tips sometimes turned yellow and shriveled. I like the thin, tender skins of this variety.

Comments on 'Portofino' Squash

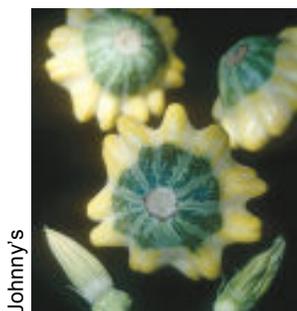
- I was picking 'Portofino' fruits before any had set on the 'Italian Largo' plants. The shape of the fruits was more uniform and conducive to grilling; also, they weren't as moist as regular zucchini.
- I love its striped look. I prefer the taste and shape of 'Portofino' compared to 'Italian Largo'; but overall, I prefer yellow summer squash to either of these varieties.
- Matured five days earlier.
- It produced more marketable fruits, especially after the first picking.
- Seemed to not develop overgrown fruits as quickly.

Conclusions

Although our testing was limited, our gardeners unanimously chose 'Portofino' over 'Italian Largo'. 'Portofino' matured earlier and produced higher quality, more uniform fruit. 'Italian Largo' produced higher overall yields, although neither variety was especially productive. In general, our gardeners were not especially enthusiastic for romanesco summer squash.

Trial 23. Squash, Summer Scallop

Varieties (information and photos from seed catalogs)



Johnny's

'Flying Saucers'

50 days. New in 2007. Fruits are a beautiful mix of bright yellow and dark green. They are more highly ribbed than other patty pans for an "alien" look. Fruits are dense, nutty, and flavorful. High night temps result in greener fruits.

'Sunburst'

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



Johnny's

Data

Data were collected at 6 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Flying Saucers' was rated at 7.83 and 'Sunburst' was rated at 6.33. The following are comparisons for specific qualities:

	'Flying Saucers'	'Sunburst'	Same
Germinated best	33 %	33 %	33 %
Healthier plants	17	17	67
Matured earlier	17	50	33
Higher yields	67	33	0
More attractive fruits	67	33	0
Tasted better	17	17	67

Recommendations and Preferences

'Flying Saucers' and 'Sunburst' were each recommended by 4 of 6 (67%) gardeners. When asked to state a preference, 5 of 6 (83%) gardeners chose 'Flying Saucers'.

General Comments

- Both had healthy plants, matured at the same time, and produced squash until a hard freeze.
- Both plants came back quite nicely after hail.
- Neither one had a commanding flavor, but it was a good addition in baked dishes and casseroles.
- Cute, but not much flavor.
- It was a good substitute for zucchini when baking as it kept the baked product moist.
- We sliced the squash, dipped the slices into egg and flower, and fried it. It tasted like zucchini but with the scalloped edges, it looked nicer than zucchini on the plate.

Comments on 'Flying Saucers' Squash

- Produced more squash. The yellow/green contrast on the 'Flying Saucers' fruits was very attractive and noticeable. The squash had a much better taste and was more tender. This variety is my new favorite summer squash. I could cook it alone and in various dishes and it cooked well in all ways. I will definitely plant 'Flying Saucers' again.
- The young seedlings seemed more susceptible to frost in early spring.
- Plants averaged 9 fruits each, compared to 7 fruits for each 'Sunburst' plant. The green accents on the yellow veggie were very attractive. The scalloped edges were more pronounced.
- Larger and healthier plants. Much better yields. The fruits were cute. Customers at the farmers market loved them for decorations—they last a long time. Customers preferred its nutty taste.

Comments on 'Sunburst' Squash

- Germinated much faster. Plants were healthier and started producing before 'Flying Saucers' began to blossom. Slightly higher yields.
- Plants are slightly taller and harvesting began 7 days earlier.
- Fruits were hard and needed peeling to eat.

Conclusions

Gardeners liked both varieties, but most preferred 'Flying Saucers' for its distinctively colored fruits. Both varieties were productive, mild in flavor, and good for cooking. 'Sunburst' got off to a quick start and produced earlier, but 'Flying Saucers' showed higher yields overall.

Trial 24. Squash, Summer Straightneck

Varieties (information and photos from seed catalogs)



Johnny's

'Multipik'

50 days. A 'precocious yellow gene' causes increased production of female flowers which increases the yield. Bears early, continuously and prolifically. The fruits have a light sweet taste.

'Sunray'

52 days. Good yield potential and resistance to powdery mildew. Precocious yellow straightneck fruits (some slight crooks) and yellow stems. Big, semi-open plant.



Johnny's

Data

Data were collected at 3 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Multipik' was rated at 7.67 and 'Sunray' was rated at 7.33. The following are comparisons for specific qualities:

	'Multipik'	'Sunray'	Same
Germinated best	33 %	0 %	67 %
Healthier plants	0	0	100
Matured earlier	67	33	0
Higher yields	67	33	0
More attractive fruits	33	0	67
Tasted better	0	0	100

Recommendations and Preferences

'Multipik' was recommended by 3 of 3 (100%) gardeners while 'Sunray' was recommended by 1 of 3 (33%) gardeners. When asked to state a preference, 2 of 3 (67%) gardeners chose 'Multipik'.

General Comments

- Great germination for both varieties. Very healthy plants.
- I wasn't crazy for the taste of either; I guess I like zucchini better (green skin and softer flesh) for the cooking I do.

Comments on 'Multipik' Squash

- The plant was larger and seemed to produce the better vegetable.
- Yield was slightly higher.

Comments on 'Sunray' Squash

- Quite a few more fruits—also started producing earlier.

Conclusions

It's hard to make conclusions with such limited testing, but our gardeners generally preferred 'Multipik'. In two of three trials, 'Multipik' produced earlier and produced more fruits. Both varieties produced well up until frost. The distinguishing feature of 'Sunray' is its resistance to powdery mildew and this disease did not appear to be a problem for either variety in 2008.

Trial 25. Squash, Winter Buttercup

Varieties (information and photos from seed catalogs)

Johnny's



'Bonbon'

81 days. Thick, orange flesh has rich, creamy texture. Upright, semi-bush vines. The 4-pound dark green fruits ripen early. Good disease resistance. 2005 All-America Selections Winner.

'Sweet Mama'

85 days. Big yields of dark green, drum-shaped, 3-pound fruits. Thick, moderately dry flesh has smooth texture and mild, sweet flavor. Fruits store up to four months. Compact vines. 1979 All-America Selections Winner.



Jung

Data

Data were collected at 12 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Bonbon' was rated at 6.75 and 'Sweet Mama' was rated at 6.50. The following are comparisons for specific qualities:

	'Bonbon'	'Sweet Mama'	Same
Germinated best	25 %	25 %	50 %
Healthier plants	17	42	42
Matured earlier	36	27	36
Higher yields	36	45	18
More attractive fruits	33	58	8
Tasted better	42	33	25

Recommendations and Preferences

'Bonbon' was recommended by 11 of 12 (92%) gardeners while 'Sweet Mama' was recommended by 8 of 12 (75%) gardeners. When asked to state a preference, each variety was selected by 6 of 12 (50%) gardeners.

General Comments

- The varieties produced a similar number of fruits. Their fruits looked good and tasted very good.
- Both varieties had healthy plants and produced very good tasting fruits.
- The squash of both varieties had a mild flavor.
- Flesh of both varieties has a dry texture.
- Both varieties had squash that were up to 7 pounds and most were 4–5 pounds.
- Both varieties produced earlier and better than expected.
- Vines of both varieties suffered from minor outbreaks of powdery mildew.

Comments on 'Bonbon' Squash

- Produced more fruit, but individual fruits were smaller. The fruits matured earlier and look like the old-fashioned buttercup. Far better in taste. 'Bonbon' totally outperformed 'Sweet Mama'.
- I liked the dark green top color and the white bottom of the squash. The fruits have a bright flesh and a sweet taste.
- The squash seemed a little tastier and had a lot more flesh. Its seed pocket is small.
- Healthier plants, higher yields. The shape of its fruits makes them difficult to cut when cooking.
- Bigger bottoms to their fruit are less attractive.

Comments on 'Sweet Mama' Squash

- The appearance and flavor of 'Sweet Mama' makes it one of the best buttercups I've grown. Its squash were smooth and unblemished. Deeper yellow meat with good sweetness.
- Its fruits were evenly sized and 3–4 pounds each.
- Has a drier flesh.
- Bigger, more vibrant plants.
- Larger fruits led to higher yields. Fruits were more attractive and tasted better. Superior overall.

Conclusions

Gardeners liked both varieties, but 'Bonbon' was a more consistent performer. Many gardeners noted it matured early and tasted excellent. 'Sweet Mama' grew more vigorously and produced slightly higher yields on average. Most growers preferred the appearance of 'Sweet Mama' fruits, which lacked a button on the bottom.

Trial 26. Squash, Winter Butternut

Varieties (information and photos from seed catalogs)



Harris

'Chieftain'

80 days. New in 2007. A smaller butternut that is produced on a space-saving bush type plant that offers tolerance to powdery mildew. Fruit weigh approximately 2 pounds, a good size for today's smaller families.



Harris

'Early Butternut'

85 days. This award winner matures early and grows on a compact vine. The fruit average 8 inches long with the typical "bell" on the blossom end. The uniformity of size and shape is excellent and yields are impressive.

Data

Data were collected at 4 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Chieftain' was rated at 4.00 and 'Early Butternut' was rated at 7.00. The following are comparisons for specific qualities:

	'Chieftain'	'Early Butternut'	Same
Germinated best	25 %	50 %	25 %
Healthier plants	0	50	50
Matured earlier	25	50	25
Higher yields	0	50	50
More attractive fruits	25	50	25
Tasted better	33	33	33

Recommendations and Preferences

'Chieftain' was recommended by 1 of 4 (25%) gardeners while 'Early Butternut' was recommended by 3 of 4 (75%) gardeners. When asked to state a preference, 3 of 4 (75%) gardeners chose 'Early Butternut'.

General Comments

- Plants suffered from powdery mildew early in summer. Both varieties produced lots of flowers and flowered all summer. Most fruits did not mature before our first hard frost (October 16).

Comments on 'Chieftain' Squash

- Only had two squash that matured early and five overall before frost (no fruits of 'Early Butternut' matured before frost). These few squash were nice in shape and color, and mild tasting. Many small fruit never matured before frost.
- Many of the fruit were misshaped and of poor quality.

Comments on 'Early Butternut' Squash

- Seemed to have a few more plants and their squash was very tasty.
- Seedlings germinated faster. Plants set a lot more fruit (we harvested about 20 'Early Butternut' fruit, compared to 4 or 5 for 'Chieftain'). Its squash were beautiful. They were very uniform in size. We grow squash commercially. I was so impressed with 'Early Butternut' that I would consider growing it next year. Excellent appearance and set.
- Great, smooth, almost "buttery" taste.

Conclusions

The few gardeners who participated in this trial generally liked the performance of 'Early Butternut'. It showed strong seedling vigor and healthy plant growth. The compact vines set good crops of high quality squash. 'Chieftain' matured later and several gardeners commented that most of its fruits did not mature before frost.

Trial 27. Squash, Winter Hubbard

Varieties (information and photos from seed catalogs)

Johnny's



'Blue Ballet'

95 days. Smooth-skinned, blue-gray fruits average 4–6 pounds, with sweeter, bright orange, fiberless flesh. Stores well. Average yield is 2 fruits/plant.

'Blue Magic'

100 days. New in 2007. The 4–6-pound fruit are produced on semi-vining plants and have the typical blue-gray rind color found on standard blue hubbard squash. Fine-grained, tasty flesh.



Harris

Data

Data were collected at 4 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Blue Ballet' was rated at 3.67 and 'Blue Magic' was rated at 2.67. The following are comparisons for specific qualities:

	'Blue Ballet'	'Blue Magic'	Same
Germinated best	50 %	25 %	25 %
Healthier plants	25	75	0
Matured earlier	50	0	50
Higher yields	50	50	0
More attractive fruits	100	0	0
Tasted better	0	50	50

Recommendations and Preferences

'Blue Ballet' and 'Blue Magic' were each recommended by 1 of 3 (33%) gardeners. When asked to state a preference, 'Blue Ballet' was selected by 2 of 3 (67%) gardeners.

General Comments

- The fruits of both varieties had lots of flesh and were mild tasting.
- The fruits of both varieties tasted bland. I don't care for either variety.

Comments on 'Blue Ballet' Squash

- Fruits matured earlier and were more uniform in size.
- Higher overall yield, but smaller fruits. Fruits of 'Blue Ballet' ranged from 4–7 pounds each, while fruits of 'Blue Magic' weighed up to 12 pounds.
- Flesh had a nice dark orange color.
- Small yield, but its yield exceeded that of 'Blue Magic' (these plants died before producing any squash).
- Its vines started out well, but were attacked by cucumber beetles and could not recover. The vines of 'Blue Magic' did recover from the same attack.

Comments on 'Blue Magic' Squash

- Vines were taller and vigorous. Its fruits were larger and later to mature.
- Much larger plants. The fruits were sweeter and had more flavor. Their large seed cavities produced lots of seeds for roasting.

Conclusions

Only a few gardeners were interested in participating in this trial and these gardeners were not impressed by either variety. 'Blue Ballet' matured earlier and its fruits were uniform and attractive in appearance. These fruits were relatively small (about 4 pounds), but still suitable for today's smaller families. 'Blue Magic' had more vigorous vines and larger fruits (about 6 pounds). The flavor of both varieties was mild.

Trial 28. Swiss Chard

Varieties (information and photos from seed catalogs)



Johnny's

'Bright Lights'

55 days. Stems come in a brilliant array of colors including gold, pink, orange, red, and white. Slightly less cold hardy and milder tasting than normal chard. Developed in New Zealand. 1998 All-America Selections winner.

'Five Color Silverbeet'

55 days. Leaves have a spectacular range of colors throughout the season. This is a re-selected strain from Australia; seed crops of all the different colors are grown in isolation to maintain a proper balance of colors.



Seed Savers Exchange

Data

Data were collected at 15 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Bright Lights' was rated at 7.77 and 'Five Color Silverbeet' was rated at 7.36. The following are comparisons for specific traits:

	'Bright Lights'	'Five Color Silverbeet'	Same
Germinated best	27 %	20 %	53 %
Healthier plants	29	14	57
Matured earlier	23	15	62
Higher yields	43	21	36
More attractive	62	23	15
Tasted better	8	25	67

Recommendations and Preferences

'Bright Lights' and 'Five Color Silverbeet' were each recommended by 9 of 13 (69%) gardeners. When asked to state a preference, 'Bright Lights' was selected by 8 of 14 (57%) gardeners.

General Comments

- Both varieties produced continually, even after frost.
- It was difficult to differentiate between the varieties. Overall they were both excellent, both in taste and production.
- I've never grown Swiss chard before, but it looks pretty growing in the garden.
- Light frost had no affect on seedlings. Both varieties came back vigorously after a bad hailstorm on June 24. Both were ready for consumption at the same time. Both produced high yields. No difference in taste.

General Comments (continued)

- This was our first experience with this veggie. It does add flavor to salads and sandwiches. My neighbors and I will plant it next year. This would also be an interesting focal point in a flower pot.
- I did not like the taste of either. I thought it was going to taste like spinach.

Comments on 'Bright Lights' Swiss Chard

- Taller and larger plants. Suffered hail damage, but came back nicely. Stalks had brighter colors, particularly yellow.
- More attractive in the garden. Brighter colors.
- Suffered a few necrotic spots. Deeper, more distinctive colors. 'Bright Lights' is more vigorous, has better color, and is the better choice.

Comments on 'Five Color Silverbeet'

- Germinated two weeks earlier than 'Bright Lights'. Plants were healthy and very productive. We harvested it several times. It was delicious, whereas 'Bright Lights' was bland.
- More flavorful.
- Seemed to withstand heat better. Its stalks were thicker and the veins on the leaves were more colorful and pronounced.

Conclusions

Gardeners were impressed with both varieties for their beauty, taste, and production. Both varieties tolerated cool temperatures in spring and fall. Most gardeners preferred 'Bright Lights' for its brighter colors and slightly higher yields. Other gardeners were impressed with the vigor and flavorful stalks of 'Five Color Silverbeet'.

Chapter 4

Flower Trial Reports

Trial 29. Cosmos

Varieties (information and photos from seed catalogs)



Harris

'Sonata Mix'

Large graceful blooms in bright shades of red, white, carmine, pink and rose. Semidwarf, erect plants, free-flowering habit. Showy for the garden and excellent for cutting. Height is 24 inches.

'Versailles Mix'

Extra large flowers are produced on sturdy 42-inch stems. Makes an excellent bedding plant and cut flower. Mixture of white, blush pink, carmine, and pink with a deep pink eye. Strong stems. Developed for cutting.



Harris

Data

Data were collected at 7 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Sonata Mix' was rated at 8.13 and 'Versailles Mix' was rated at 8.00. The following are comparisons for specific qualities:

Trait	'Sonata Mix'	'Versailles Mix'	Same
Germinated best	14 %	0 %	86 %
Healthier plants	17	0	83
Bloomed earlier	83	0	17
Produced more flowers	33	0	67
More attractive in garden	17	17	67
Better cut flower	0	0	100

Recommendations and Preferences

'Sonata Mix' was recommended by 8 of 8 (100%) gardeners while 'Versailles Mix' was recommended by 6 of 8 (75%) gardeners. When asked to state a preference, 4 of 6 (67%) gardeners chose 'Sonata Mix'.

General Comments

- The flowers of each variety were beautiful.
- Both blossomed later than my zinnias. Both varieties are good.
- Rabbits ate all the plants before they flowered and plants never came back.

Comments on 'Sonata Mix' Cosmos

- Bloomed earlier; more time to enjoy. I loved these flowers and will plant them again.
- More flowers; withstood the wind better.
- More blooms and healthier growth.
- First to flower.

Comments on 'Versailles Mix' Cosmos

- I like its brighter colors.
- Good color and heartiness.
- Taller plants and later to bloom.

Conclusions

Both varieties performed well in our trials. Gardeners liked their performance both in the garden and as a cut flower. Every gardener recommended 'Sonata Mix' and most preferred it over 'Versailles Mix' for its earlier blooms and prolific blooming.

Trial 30. Cosmos, Sulphur

Varieties (information and photos from seed catalogs)

Seeds of Change



'Bright Lights'

A beautiful blend of vibrant yellow, orange and scarlet flowers. The 36-inch plants are drought tolerant. Great for cut flowers and for attracting butterflies and hummingbirds.

'Cosmic Mix'

Free flowering, semi-double blooms in a mix of yellow, red and orange. Heat and drought tolerant. Plants average 12 inches.



Harris

Data

Data were collected at 8 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Bright Lights' was rated at 7.50 and 'Cosmic Mix' was rated at 6.50. The following are comparisons for specific qualities:

Trait	'Bright Lights'	'Cosmic Mix'	Same
Germinated best	13 %	0 %	88 %
Healthier plants	43	0	57
Bloomed earlier	43	29	29
Produced more flowers	43	14	43
More attractive in garden	57	0	43
Better cut flower	50	0	50

Recommendations and Preferences

'Bright Lights' was recommended by 7 of 7 (100%) gardeners while 'Cosmic Mix' was recommended by 6 of 7 (86%) gardeners. When asked to state a preference, 5 of 7 (71%) gardeners chose 'Bright Lights'.

General Comments

- Both varieties germinated well and the plants remained healthy throughout the season.
- Although they differ in height, both have good looking plants and flowers.
- Rabbits ate all the plants and they never came back.

Comments on 'Bright Lights' Cosmos

- Nice colors, bloomed a week earlier, and continued blooming a bit longer than 'Cosmic Mix'.
- A fuller, healthier looking plant. Prolific and beautiful.
- Larger blooms. The plants were more healthy and attractive.
- Plants were fuller and 6–12 inches taller. Bloomed a week earlier.
- A taller variety, more airy, looks more like the traditional pink cosmos.

Comments on 'Cosmic Mix' Cosmos

- I do like its compact plants.
- Much shorter plants.
- First bloomed August 5, four days earlier than 'Bright Lights Mix'. Plants are shorter and bushier, somewhat like marigolds.
- More flowers.

Conclusions

Gardeners liked both varieties, but most preferred 'Bright Lights'. Its plants were taller, fuller, and loaded with flowers. 'Bright Lights' was more attractive in the garden and a better cut flower. 'Cosmic Mix' grows much shorter (12 inches compared to 36 inches for 'Bright Lights') and is a good choice for gardeners looking for a compact plant.

Trial 31. Nasturtium

Varieties (information and photos from seed catalogs)

Johnny's



'Jewel Mix'

Bright, single and double, 2-inch blooms in red, pink, orange, and yellow held above light green foliage. Delicious edible flowers. Height is 16 inches.

'Whirlybird Mix'

These large, colorful, single-petaled flowers are held well above the dark green foliage on large 12–16-inch mounded plants that will bloom all summer in full sun to partial shade. A bright mix of colors. Edible flowers.



Veseys

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Jewel Mix' was rated at 6.38 and 'Whirlybird Mix' was rated at 5.50. The following are comparisons for specific qualities:

Trait	'Jewel Mix'	'Whirlybird Mix'	Same
Germinated best	11 %	44 %	44 %
Healthier plants	38	38	25
Bloomed earlier	43	14	43
Produced more flowers	29	14	57
More attractive in garden	43	14	43
Better edible flower	33	0	67

Recommendations and Preferences

'Jewel Mix' was recommended by 4 of 9 (44%) gardeners while 'Whirlybird Mix' was recommended by 5 of 9 (56%) gardeners. When asked to state a preference, 5 of 7 (71%) gardeners chose 'Jewel Mix'.

General Comments

- I think almost all germinated! Would have preferred flowers on both varieties to be situated above the leaves—these should be in hanging baskets rather than in ground.
- Both produced flowers early, but neither variety displayed much of a variety of colors.
- Neither variety grew more than a few inches tall and did not bloom.
- Slow to germinate. Then a storm hit. The few plants that survived look nice.
- I missed watering them for a few days and the plants dried up and died—sorry.

Comments on 'Jewel Mix' Nasturtium

- Even though both sustained wind damage, 'Jewel Mix' had more color and less breakage than 'Whirlybird Mix'. Pleasant taste, too.
- This variety seemed stronger with more plants and more flowers. They had larger leaves and the plants spread out better.
- More and larger plants.
- A more appealing color combination.
- Similar germination rate, but one day slower. Plants did not fall over like those of 'Whirlybird Mix'. 'Jewel Mix' is producing new flowers longer into the season.

Comments on 'Whirlybird Mix' Nasturtium

- Earlier germination, better germination, and earlier flowers.
- Better colors.
- Germination was poor (half as many plants). More susceptible to flea beetles.

Conclusions

This trial did not generate much enthusiasm and several gardeners did not recommend either variety. When asked to make a choice, most gardeners preferred 'Jewel Mix'. Several gardeners noted that it bloomed earlier and was more attractive in the garden. Its plants were sturdier and kept blooming into fall.

Trial 32. Sunflower, Bicolor

Varieties (information and photos from seed catalogs)



Johnny's

'Pro Cut Bicolor'

Yellow and dark mahogany petals with dark brown disks. A pollenless, single-stemmed variety. Early blooming (only 50–60 days). Thin seedlings to 6 inches apart for 3–4-inch flowers.

'Ring of Fire'

Dark red flowers with golden tips and a dark disk. The 4-foot plants are heavily branched, creating lots of flowers for cutting or for your garden display. Blooms appear in 70–75 days.



Harris

Data

Data were collected at 10 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Pro Cut Bicolor' was rated at 6.11 and 'Ring of Fire' was rated at 6.22. The following are comparisons for specific qualities:

Trait	'Pro Cut Bicolor'	'Ring of Fire'	Same
Germinated best	40 %	10 %	50 %
Healthier plants	56	22	22
Bloomed earlier	67	33	0
Produced more flowers	11	78	11
More attractive in garden	22	78	0
Better cut flower	67	33	0

Recommendations and Preferences

'Pro Cut Bicolor' was recommended by 8 of 10 (80%) gardeners while 'Ring of Fire' was recommended by 5 of 10 (50%) gardeners. When asked to state a preference, each variety was chosen by 5 of 10 (50%) gardeners.

General Comments

- Both were short plants with deformed heads—ugly—small, too. Would never plant them again.
- Both germinated well. Neither was really good for cut flowers.
- Neither had petals that were large enough to make a pretty cut flower. It's hard to say what others desire in an ornamental sunflower, but I don't think these are the best.
- The deer/rabbits/grasshoppers ate plants as fast as they grew. The plants did not have a chance.

Comments on 'Pro Cut Bicolor' Sunflower

- Plants were perkier and healthier. Almost all plants bloomed before any 'Ring of Fire' plants bloomed. Flowers were more vibrant.
- Grew into a taller plant. Its blooms were more like a full sunflower compared to the small blooms of 'Ring of Fire'.
- More attractive, longer petals to accentuate the two contrasting colors.
- More vigorous. A nice cut flower.
- I like its sturdier plants. Its blooms were easier to see, but not as pretty compared to 'Ring of Fire'. I wish the plants would bloom longer than one week, too.
- Plants were more vigorous and very healthy.
- Suffered more from hail damage.

Comments on 'Ring of Fire' Sunflower

- Flowers lasted longer.
- Large flower centers and spiked petals.
- Many uniform heads.
- More flowers, but each was much smaller in size.
- Prettier, but seemed too delicate for our "leave-it-alone" garden.

Conclusions

'Pro Cut Bicolor' was a consistent performer. Its healthy, sturdy stalk rapidly produced a single head that was suitable for cutting. Gardeners had mixed feelings on the beauty of its flower. 'Ring of Fire' was a more delicate plant and it struggled at some sites. Its multibranching habit led to more, albeit smaller blooms and an extended display in the garden.

Trial 33. Sunflower, Mixed

Varieties (information and photos from seed catalogs)

Harris



'Infrared'

Flowers range in shades from soft red to a very dark red plus some red bicolors. The pollenless flowers are single with dark central disks. Plant height is 6 feet. Blooms in 60–70 days.

'Monet's Palette'

A beautiful mixture of colors ranging from yellow to reddish bicolor. Branched plants grow vigorously to 6 feet, producing a number of long branches suitable for cutting. Pollenless. Blooms in 70–75 days.



Harris

Data

Data were collected at 10 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Infrared' was rated at 7.25 and 'Monet's Palette' was rated at 7.00. The following are comparisons for specific qualities:

Trait	'Infrared'	'Monet's Palette'	Same
Germinated best	20 %	20 %	60 %
Healthier plants	43	29	29
Bloomed earlier	14	71	14
Produced more flowers	29	57	14
More attractive in garden	29	43	29
Better cut flower	20	20	60

Recommendations and Preferences

'Infrared' was recommended by 6 of 8 (75%) gardeners while 'Monet's Palette' was recommended by 7 of 8 (88%) gardeners. When asked to state a preference, 4 of 7 (57%) gardeners chose 'Infrared'.

General Comments

- The bunnies loved both varieties, despite my best efforts to thwart them. However, both varieties, especially 'Infrared', were persistent in their growth. The leafless sticks kept growing until I got two blooms on the 'Infrared' (about 3 inches in diameter) on a 2-foot-tall stalk. The 'Monet's Palette' also produced blooms at 6 inches with blossoms about 0.5-inch in diameter.
- Both varieties were spindly and the flowers were too fragile.
- Neither sunflower variety germinated. We had a lot of rain right after planting—did they rot?

Comments on 'Infrared' Sunflower

- Darker foliage—pretty! More buds per plant. I enjoy the dark color of its blooms.
- 'Infrared' had nice flowers, but not as sturdy or as many.
- Had taller plants with many branches and flowers. The plants produced flowers for a longer time, even at the end of September. I liked the color of the flowers better, too.
- I liked the bronze, burgundy and red tones of its flower petals. They were taller and had more flowers in a bunch. They would be good as a background flower with 'Monet's Palette' in the front.
- Healthier leaves. Bloomed one day later.
- Better colors.

Comments on 'Monet's Palette' Sunflower

- Sturdy plants. Produced flowers earlier. These were awesome! We won the Blue Ribbon at the 4-H Fair.
- Produced more flowers and was more attractive overall.
- A beautiful variation in color.
- Its flowers held their beauty longer.
- Shorter plants but more flowers. Nice colors.

Conclusions

Gardeners liked both mixtures of sunflowers. 'Infrared' put on a beautiful display of flowers in rich shades of bronze, burgundy and red. Its stalks were taller, very healthy, and bloomed late into the season. The blooms of 'Monet's Palette' were especially bright and colorful. 'Monet's Palette' bloomed early and prolifically.

Trial 34. Sunflower, Orange

Varieties (information and photos from seed catalogs)



Veseys

'Pro Cut Orange'

Bright orange 3–4-inch flowers with very dark center. This pollenless, single-stemmed variety was bred especially for the cut flower market and makes a great addition to any garden. Very early blooming (only 50–60 days).



Harris

'Sunrich Orange'

Flowers have golden yellow rays with a black disk. Considered the industry standard, 'Sunrich' varieties are ideal for cut flower production because they are pollenless and non-branching. Blooms in 65–70 days.

Data

Data were collected at 7 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Pro Cut Orange' was rated at 7.71 and 'Sunrich Orange' was rated at 7.71. The following are comparisons for specific qualities:

Trait	'Pro Cut Orange'	'Sunrich Orange'	Same
Germinated best	43 %	0 %	57 %
Healthier plants	14	14	71
Bloomed earlier	86	0	14
Produced more flowers	14	14	71
More attractive in garden	14	29	57
Better cut flower	40	20	40

Recommendations and Preferences

'Pro Cut Orange' and 'Sunrich Orange' were each recommended by 6 of 7 (86%) gardeners. When asked to state a preference, 4 of 7 (57%) gardeners chose 'Pro Cut Orange'.

General Comments

- Plants of both varieties were healthy and their flowers were beautiful.

Comments on 'Pro Cut Orange' Sunflower

- Grew 50 inches tall, 5 inches shorter than 'Sunrich Orange'. Stalks were heavier and flower heads were larger. Short petals. Bloomed earlier.
- Bloomed on August 7—'Sunrich Orange' bloomed 15 days later.
- Bloomed sooner and looked better overall.

Comments on 'Pro Cut Orange' (cont.)

- Nice large flowers early, but the heads hung down—not as attractive. Lasted longer as a cut flower.
- Sooner to bloom, but many heads were only two inches across.

Comments on 'Sunrich Orange' Sunflower

- Plants grew 48 inches tall, 10 inches taller than 'Pro Cut Orange'. Blooms were 6–7 inches in diameter, compared to 5 inches with 'Pro Cut Orange'.
- Flowers were more in proportion—petal to center. The stems were more slender, making them easier to use in an arrangement.
- Heads seemed to be very uniform in size and more attractive.
- Plants grew taller and heads were smaller. Heads tilted upwards—more showy.

Conclusions

Both varieties were outstanding, especially for cut flower production. 'Pro Cut Orange' blooms very early and reliably. The flowers of 'Sunrich Orange' bloom later, but are larger, more uniform, and especially attractive. The slender stems of 'Sunrich Orange' make this variety easier to use in flower bouquets, too. These varieties complement one another for cut flower production with 'Pro Cut Orange' serving the role as an early maturing variety that expands the harvest season. The single-headed trait of these varieties limits their use in gardens since their season of bloom is short. Multibranching varieties, in contrast, produce many more blooms and have a longer display of color.

Trial 34. Sunflower, Red

Varieties (information and photos from seed catalogs)

Johnny's



'Moulin Rouge'

One of the darkest red sunflowers, this hybrid produces pollenless blooms on 6-foot plants. Plants will branch with attractive dark stems. Used in borders and flower arrangements. Blooms in 65–70 days.

'Velvet Queen'

Stunning blooms with velvety mahogany-red petals and dark centers. The 6-foot stalks are sturdy, well branched, and full of flowers. Attractive to birds.



Johnny's

Data

Data were collected at 19 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Moulin Rouge' was rated at 7.94 and 'Velvet Queen' was rated at 6.47. The following are comparisons for specific qualities:

Trait	'Moulin Rouge'	'Velvet Queen'	Same
Germinated best	47 %	16 %	37 %
Healthier plants	56	25	19
Bloomed earlier	50	31	19
Produced more flowers	50	31	19
More attractive in garden	44	13	44
Better cut flower	40	20	40

Recommendations and Preferences

'Moulin Rouge' was recommended by 14 of 17 (82%) gardeners while 'Velvet Queen' was recommended by 9 of 17 (53%) gardeners. When asked to state a preference, 13 of 17 (76%) gardeners chose 'Moulin Rouge'.

General Comments

- Plants of both varieties were healthy and looked great in the garden.
- Both had large, showy flowers for a long time.
- Both bloomed the week of August 11. The blooms were very colorful—'Velvet Queen' had less red. The stalks of both varieties blew over and had to be staked during a two-day wind storm that struck when plants were 5+ feet tall.
- Neither variety met my expectations. I would not plant either again.
- The rabbits liked both varieties very much.

Comments on 'Moulin Rouge' Sunflower

- Deep red flowers and attractive, purple stalks.
- Grew vigorously. Its stalks were sturdy. The flowers were large and very colorful.
- Flowers were beautiful—so dark—almost black. Stalks were more tolerant to drought and each stalk produced up to seven flowers.
- Plants were bigger and healthier. I loved the color of its blooms! They were very attractive.
- Grew faster. Had a strong, thick stalk. Produced more flowers per stalk (five flowers per stalk). Flowers had better petals and lasted longer.
- Branches were weak and plants leaned while blooming. Produced flowers for a long time, but the petals of individual flowers dropped off early.

Comments on 'Velvet Queen' Sunflower

- I liked its variety of colors.
- Thicker, sturdier stalks. Colors of the blooms varied—some looked almost like a regular yellow sunflower.
- Blooms were at best dark orange (not red); half were regular yellow.
- Bloomed longer into fall.

Conclusions

Most gardeners were extremely impressed with the deep maroon blooms and purple stems of 'Moulin Rouge'. Its sturdy, drought-tolerant stalks bloomed early and abundantly, making for an eye-catching display of rich color. 'Velvet Queen' bloomed longer into the fall and showed a wider variety of colors, from yellow to orange and red, all with a velvety texture. It was attractive, but could not match the special beauty of 'Moulin Rouge'.

Trial 36. Sunflower, Soft Shades

Varieties (information and photos from seed catalogs)



Harris

'Peach Passion'

Small, peach-colored blooms on long stems suitable for cut flower arrangements. Pollenless. Multiple branching leads to high yields. Height is 48 inches. Blooms in only 55 days. New in 2007.

'Starburst Lemon Aura'

Pale yellow, double flowers add a special touch to pastel bouquets. Long, sturdy branches and pollenless blooms are well suited for cut flowers. Height is 48–60 inches. Blooms in 60–70 days.



Johnny's

Data

Data were collected at 11 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Peach Passion' was rated at 3.33 and 'Starburst Lemon Aura' was rated at 8.00. The following are comparisons for qualities:

Trait	'Peach Passion'	'Starburst Lemon Aura'	Same
Germinated best	0 %	91 %	9 %
Healthier plants	0	100	0
Bloomed earlier	60	20	20
Produced more flowers	17	83	0
More attractive in garden	0	83	17
Better cut flower	0	67	33

Recommendations and Preferences

'Peach Passion' was recommended by 1 of 7 (14%) gardeners while 'Starburst Lemon Aura' was recommended by 6 of 7 (86%) gardeners. When asked to state a preference, 7 of 7 (100%) gardeners chose 'Starburst Lemon Aura'.

General Comments

- No germination.

Comments on 'Peach Passion' Sunflower

- Poor germination.
- Smaller plants. Early blooming with many small flowers. Petals looked limp. Produced many flowers, but they did not last long. The heads were small and hung downward.

Comments on 'Starburst Lemon Aura'

- Better germination. Much larger plants. Flowers were brighter, larger, and much more abundant.
- I like the solid yellow heads. They were pretty and more upright.
- Larger plants and heads. Flowers lasted a lot longer.
- More flowers.
- Brighter color.

Conclusions

'Starburst Lemon Aura' clearly outperformed 'Peach Passion'. It was much more vigorous and its blooms were more abundant. All gardeners liked its starlike, light yellow blooms, both in the garden and as a cut flower. The performance of 'Peach Passion' was greatly disappointing. Several gardeners noted poor germination and weak growth. Its blooms have a distinctive color, but were few in number and lacked vibrancy.

Trial 37. Sunflower, Yellow

Varieties (information and photos from seed catalogs)



Johnny's

'Ikarus'

Abundant 4–6-inch flowers adorn 30-inch basal branching stems. Petals are slightly darker than 'Valentine'. High yields, strong stems. Height is 48 inches. Winner of American and European awards. Blooms in 90 days.

'Valentine'

This lovely sunflower is most noted for its pale, lemon-yellow flowers with a distinctive dark disk in the center. Loads of 5–6-inch flowers. Height is 60 inches. Winner of American and European awards. Blooms in 95 days.



Harris

Data

Data were collected at 4 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Ikarus' was rated at 5.25 and 'Valentine' was rated at 8.25. The following are comparisons for qualities:

Trait	'Ikarus'	'Valentine'	Same
Germinated best	50 %	0 %	50 %
Healthier plants	0	25	75
Bloomed earlier	0	100	0
Produced more flowers	0	100	0
More attractive in garden	0	100	0
Better cut flower	100	0	0

Recommendations and Preferences

'Ikarus' was recommended by 2 of 3 (67%) gardeners while 'Valentine' was recommended by 3 of 3 (100%) gardeners. When asked to state a preference, 3 of 3 (100%) gardeners chose 'Valentine'.

General Comments

- None

Comments on 'Ikarus' Sunflower

- Heads were held upright. Bloomed until September 1. Better for cutting.
- 'Ikarus' bloomed later and some of the heads dried up without opening.

Comments on 'Valentine' Sunflower

- Had more flowers and was more attractive in the garden.
- Bloomed earlier and most plants had nice, uniform heads.
- Bloomed earlier and produced more flowers. Nice small flowers are useful for a small arrangement. I like the pretty lemon color, but the heads hung down.
- Hail hit our garden on July 19, but a few stalks survived. 'Valentine' definitely did better.

Conclusions

Surprisingly few gardeners were interested in evaluating these award-winning sunflower varieties. These few gardeners unanimously preferred 'Valentine'. It bloomed earlier, produced more flowers, and was prettier in the garden. Gardeners loved the color and uniformity of its pale lemon flowers. Most gardeners recommended 'Ikarus' as well; its upright blooms were favored for use as a cut flower.

Trial 38. Zinnia, Bicolor

Varieties (information and photos from seed catalogs)



Burpee

'Candy Cane Mix'

A bright mix of double-flowered pinks, reds and golds, streaked with white and bronze. Eye-catching 4-inch blooms on 18-inch plants. Suitable for cut flowers.

'Peppermint Stick Mix'

Gold, yellow, cream and pink flowers, all splashed and striped with red, purple, rose or scarlet for a unique appearance. Double blooms with a small percentage of solids. Plants grow 24–28 inches. Suitable for cutting.



Harris

Data

Data were collected at 14 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Candy Cane Mix' was rated at 7.14 and 'Peppermint Stick Mix' was rated at 8.00. The following are comparisons for qualities:

Trait	'Candy Cane Mix'	'Peppermint Stick Mix'	Same
Germinated best	29 %	36 %	36 %
Healthier plants	14	21	64
Bloomed earlier	36	21	43
Produced more flowers	29	36	36
More attractive in garden	7	36	57
Better cut flower	9	27	64

Recommendations and Preferences

'Candy Cane Mix' was recommended by 12 of 14 (86%) gardeners while 'Peppermint Stick Mix' was recommended by 14 of 14 (100%) gardeners. When asked to state a preference, 9 of 13 (69%) gardeners chose 'Peppermint Stick Mix'.

General Comments

- The seeds of both varieties germinated well in spite of the cool weather. Plants were healthy and full of blooms with very unique, splotchy colors. Their blooms lasted long as cut flowers.
- Both are fun flowers!
- I loved these two-toned flowers.
- Both produced lots of flowers.
- Both remained healthy through the season. Both began blooming on July 24.

Comments on 'Candy Cane Mix' Zinnia

- Tall, hardy stalks. Began flowering by August 15 and still flowering when I pulled them out on October 18. Thick heads on the flowers. Good variety of colors.
- Flowers were bigger and multicolors were more evident.
- A lighter pastel palette of golds, whites, cream, and pink. Produced slightly more flowers.
- Fuller plants. Its flowers were mostly white and yellow with a little pink at times. Its blooms last a few days longer as a cut flower compared to those of 'Peppermint Stick Mix'.

Comments on 'Peppermint Stick Mix'

- The 'Peppermint Stick Mix' blossoms were slightly fuller and the color seemed brighter.
- I am simply delighted with the colors of 'Peppermint Stick Mix'! I loved the pink striped ones, those with cream flecks, and those with mainly gold petals and red flecks.
- More variation in flowers (red and yellow, white and red, and yellow and red).
- Much better germination. Its flowers are cute little puffs. Earlier blooms and more of them, too. Nice flowers. Taller and fuller plants.

Conclusions

Gardeners fell in love with the splashy colors of both varieties. Most preferred 'Peppermint Stick Mix' for the greater intensity and broader range of colors in its blooms. It was more beautiful in the garden and as a cut flower. Plants of both varieties were healthy and prolific in blooming.

Trial 39. Zinnia, Green

Varieties (information and photos from seed catalogs)

Johnny's



'Benary's Giant Lime'

Popular lemon-lime shade of the 'Benary's Giant' series, which is outstanding for cut flowers. Plants tolerate diseases and have longer vase life compared to other varieties. Long, straight stems. Height is 24–26 inches.

'Envy'

Your neighbors will be jealous of your special chartreuse-green zinnias. Blooms are semi-double with attractive flat petals. A longtime favorite. Height is 24 inches.



Harris

Data

Data were collected at 6 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Benary's Giant Lime' was rated at 7.83 and 'Envy' was rated at 6.50. The following are comparisons for qualities:

Trait	'Benary's Giant		Same
	Lime'	Envy'	
Germinated best	67 %	17 %	17 %
Healthier plants	50	17	33
Bloomed earlier	67	17	17
Produced more flowers	33	17	50
More attractive in garden	50	0	50
Better cut flower	83	0	17

Recommendations and Preferences

'Benary's Giant Lime' and 'Envy' were each recommended by 4 of 5 (80%) gardeners. When asked to state a preference, 5 of 6 (83%) chose 'Benary's Giant Lime'.

General Comments

- Both varieties really add to an arrangement.
- Neither had very brilliant color.
- Both were very long lasting as a cut flower.

Comments on 'Benary's Giant Lime'

- Flowers were much fuller, almost globular in shape.
- Earlier to bloom and a better cut flower. The blooms were fuller and compact.
- These were pretty flowers and lasted longer in the house.
- Better germination; thus, more flowers. Flowers were larger and lasted very long into September.
- Germinated slightly earlier and bloomed slightly earlier. After three days, 'Envy' is going downhill while 'Benary's Giant Lime' still looks good. Flower color is a little greener.
- The flowers were more attractive.
- 'Benary's Giant Lime' is a misnomer—its flowers were not large.

Comments on 'Envy' Zinnia

- None.

Conclusions

Gardeners liked both varieties, but 'Benary's Giant Lime' was superior. It germinated better, had healthier plants, and bloomed earlier. Its blooms were fuller and more attractive in the garden. 'Envy' was outstanding as a cut flower, but 'Benary's Giant Lime' was even more attractive and longer lasting in a vase.

Trial 40. Zinnia, Mexican

Varieties (information and photos from seed catalogs)



'Aztec Sunset'

New in 2008. Compact, 6–10 inch plants are covered with blooms of sunny shades of yellow, gold, orange and brown. Lots of bicolors, too. Winner of Fleuroselect Award



'Persian Carpet'

A charming addition to gardens and useful for cutting. Double and semi-double, 2-inch bicolor flowers in red, mahogany, gold, purple, chocolate, and cream. 1952 All-America Selections winner. Height is 24–28 inches.

Park

Johnny's

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Aztec Sunset' was rated at 6.22 and 'Persian Carpet' was rated at 6.33. The following are comparisons for qualities:

Trait	'Aztec Sunset'	'Persian Carpet'	Same
Germinated best	22 %	22 %	56 %
Healthier plants	25	25	50
Bloomed earlier	13	50	38
Produced more flowers	38	25	38
More attractive in garden	14	29	57
Better cut flower	0	0	100

Recommendations and Preferences

'Aztec Sunset' was recommended by 7 of 9 (78%) gardeners while 'Persian Carpet' was recommended by 6 of 9 (67%) gardeners. When asked to state a preference, 5 of 8 (63%) gardeners chose 'Persian Carpet'.

General Comments

- I liked both varieties in the garden. As a cut flower, they both lasted well over a week and looked as nice as the first day. I am still enjoying cut flowers from both of these varieties as of October 10.
- Plants were healthy—no disease problems for either variety. Both varieties were beautiful in the garden and held up quite well as cut flowers.
- Neither variety germinated evenly, but the late ones eventually came and caught up with those that came up early. Both varieties responded well after the hail. No insect or mildew problems.

General Comments (continued)

- From a distance 'Aztec Sunset' was more visible, but guests seemed to o-oh and ah over the 'Persian Carpet' once they had a closer look.
- Both varieties were bushy and produced lots of flowers.

Comments on 'Aztec Sunset' Zinnia

- I loved the variation of color in 'Aztec Sunset'. It had more blooms and darker green foliage, too.
- Bloomed 10 days later, but it had many more blooms/plant. I like its colors a bit better.
- Plants were taller/bushier.

Comments on 'Persian Carpet' Zinnia

- Color was more vivid. Bushier/healthier plants.
- Its flower stems remained more upright during bloom; while those of 'Aztec Sunset' had shoots that spread in all directions. The intricate coloring of 'Persian Carpet' is awesome—so unique.
- 'Persian Carpet' finally had its first flowers late in August, while 'Aztec Sunset' did not bloom until September.

Conclusions

These varieties are small-seeded and several gardeners noted uneven germination. Once established, the plants grew well and bloomed profusely. Some gardeners noted 'Aztec Sunset' had more blooms and deeper green foliage. Other gardeners were awestruck over the intricate patterns on the flowers of 'Persian Carpet'. 'Persian Carpet' bloomed earlier at many sites, too. Both varieties were very long lasting as a cut flower.

Trial 41. Zinnia, Semidwarf

Varieties (information and photos from seed catalogs)

Harris



'Cut and Come Again'

A showy mix of double, 2.5-inch blooms on 24–26-inch upright plants. Colors include orange, soft yellow, pink, salmon and scarlet. Long stems are well suited for cut flower production.

'Oklahoma Mix'

Recommended by the Association of Specialty Cut Flower Growers. Prolific, 2-inch, double and semidouble blooms. Bright colors, excellent vase life, and low susceptibility to powdery mildew. Height is 30–40 inches.



Johnny's

Data

Data were collected at 14 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Cut and Come Again' was rated at 8.58 and 'Oklahoma Mix' was rated at 8.00. The following are comparisons for qualities:

Trait	'Cut and Come Again'	'Oklahoma Mix'	Same
Germinated best	29 %	14 %	57 %
Healthier plants	31	15	54
Bloomed earlier	42	25	33
Produced more flowers	38	23	38
More attractive in garden	25	25	50
Better cut flower	18	9	73

Recommendations and Preferences

'Cut and Come Again' and 'Oklahoma Mix' were each recommended by 10 of 12 (83%) gardeners. When asked to state a preference, 7 of 12 (58%) chose 'Cut and Come Again'.

General Comments

- These were both beautiful in the garden and lasted a long time as cut flowers.
- Both varieties showed no disease problems, were very attractive in the garden, and held up very well as cut flowers.
- Long lasting blooms.
- Tons of flowers on both varieties—even with minimal deadheading. No powdery mildew on either variety. Both cut well and made nice bouquets.
- Plants were very healthy and grew vigorously.
- These zinnias were very nice in my garden. I would purchase either variety.

Comments on 'Cut and Come Again'

- Taller and bushier plants. Produced a few more flowers, bigger heads in diameter, and bright colors—pinks and reds mostly.
- Produced flowers early and often—into the fall.
- It seemed to show more flower regrowth after cutting. Earlier blooms, too.
- Very good germination. We suffered hail on July 7. On August 8, 'Cut and Come Again' had 11 blooms (compared to 3 for 'Oklahoma Mix') and bushier plants. The plants of 'Cut and Come Again' bloomed earlier and were very healthy through the season.
- Recuperated better after our hailstorm on July 19.
- I liked its variety of colors better.

Comments on 'Oklahoma Mix' Zinnia

- Plants were healthy and much fuller. Definitely a much more prolific plant. I will plant 'Oklahoma Mix' again.
- I especially liked the red flowers of this variety.
- A wider variety of colors.
- Its plants were sturdier against the wind.

Conclusions

Both varieties were impressive. They grew vigorously, resisted powdery mildew, and produced lots of gorgeous flowers. Their blooms were outstanding both in the garden and in the vase. Several gardeners noted the vigor of 'Cut and Come Again', whether it was recuperating from a hailstorm or a harvesting of flowers. Gardeners who liked 'Oklahoma Mix' were especially impressed with the wide array of colors in the mix.

Trial 42. Zinnia, Tall

Varieties (information and photos from seed catalogs)



Johnny's

'Benary's Giant Mix'

Large, 3–4-inch blooms come in an array of bright colors, including dark red, pink, rose, gold, orange, white, coral, and lavender. Strong, thick stems on 30-inch plants. Great for garden displays and for cutting.

'State Fair Mix'

The classic old-fashioned zinnia. Huge, 4-inch, single and double blooms in scarlet, rose, salmon, orange, yellow, white, and more. Long stems. Height is 36 inches.



Johnny's

Data

Data were collected at 9 sites. Using a scale of 1 to 10, with 1 = poor and 10 = excellent, 'Benary's Giant Mix' was rated at 8.13 and 'State Fair Mix' was rated at 8.50. The following are comparisons for qualities:

Trait	'Benary's Giant Mix'	'State Fair Mix'	Same
Germinated best	0 %	33 %	67 %
Healthier plants	0	38	63
Bloomed earlier	25	50	25
Produced more flowers	25	25	50
More attractive in garden	13	25	63
Better cut flower	43	14	43

Recommendations and Preferences

'Benary's Giant Mix' was recommended by 6 of 8 (75%) gardeners while 'State Fair Mix' was recommended by 8 of 8 (100%) gardeners. When asked to state a preference, each variety was chosen by 4 of 8 (50%) gardeners.

General Comments

- It was hard to pick which variety was best. Both varieties had healthy plants and produced large, nice flowers.
- The plants of both varieties were very healthy.
- Both varieties are good.

Comments on 'Benary's Giant Mix' Zinnia

- Bloomed earlier—by a week. Flowers were larger with more petals (made them look fuller)—colors were vibrant.
- Showed a greater variety of colors.
- More blooms and their blooms hold their color better.
- I especially liked the brightness of the color of its blooms.

Comments on 'State Fair Mix' Zinnia

- Healthy plants and bloomed early.
- Bigger flowers, but fewer of them.
- Bigger blossoms.
- Fuller plants. Bloomed much earlier. Its plants were more vigorous and its blooms had great color.
- Taller plants and attractive blooms.
- Bloomed earlier. Taller plants.

Conclusions

Both varieties grew well and produced lots of large flowers. 'State Fair Mix' was recommended by all gardeners. Several gardeners reported that this mix bloomed a few days earlier and everyone was impressed with the large size of the flowers. 'Benary's Giant Mix' also rated highly. Its blooms were slightly smaller, but had more petals, making them look fuller. The blooms of 'Benary's Giant Mix' were vibrant and maintained their brightness when used as a cut flower.

Appendixes

Appendix 1. Welcome Letter

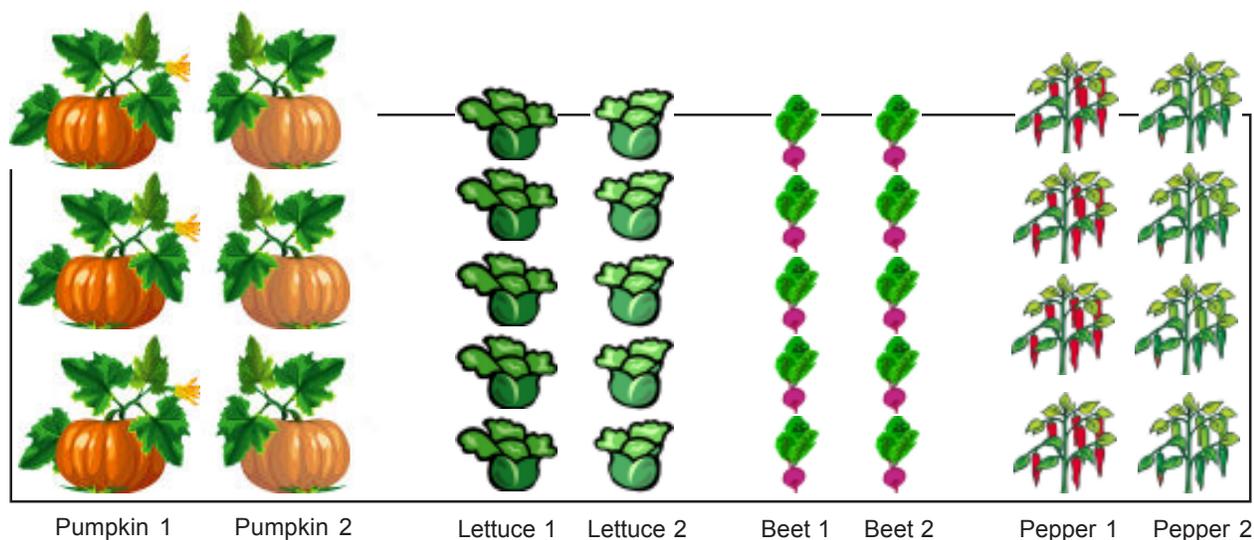
Spring/Summer 2008

Hi

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.

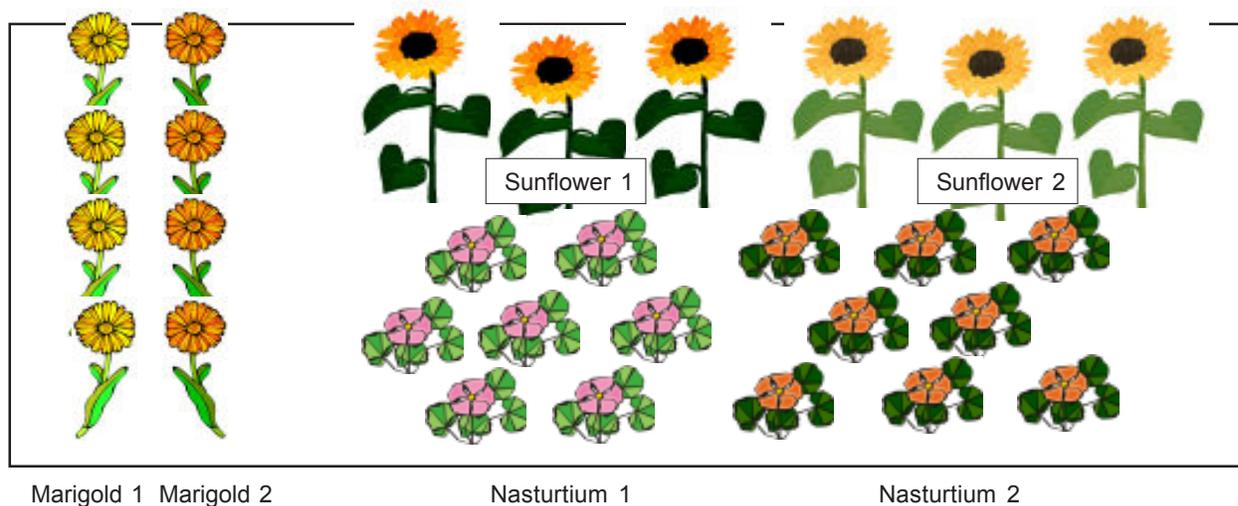
Now let's go over some key points:

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 a similar amount of sunlight and general care (watering, fertilizing and staking, if applicable).
3. We want to see how these varieties perform under real-life home garden situations under the management of home gardeners. The seed packets have some basic guidelines on how to sow your seeds, but **use your own gardening practices**. I'm not going to tell you how to grow the seeds (although I'll be happy to give you some advice, if needed).
4. When possible, **grow the vegetables 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 row marker with string. There is a 10-foot space between the two blue/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.



Most people don't like growing flowers in rows. That is understandable. So **flowers can be planted in rows or in groups**. See the diagram below. In this diagram, the marigolds are planted in rows, while the nasturtium and sunflower varieties are planted in groups. Either way is acceptable.

Note that the color differences below are exaggerated to show the difference between varieties. In most cases, we are planting flower varieties with a mixture of colors. We are most interested in which variety *series* has the best form, vigor, disease resistance, and qualities of colors. Once we identify the best variety *series* (for example, 'Moonlight Mix' marigold might be better than 'Sunlight Mix'), gardeners can later choose the *color* of the best series (for example, 'Yellow Moonlight', 'Orange Moonlight', or 'Fire Moonlight') they prefer.



5. Notice that **some of the vegetable seeds are treated with chemicals**. If so, this is indicated with a green "Mr. Yuck" sticker on the back of the packet. It's a standard practice in agriculture to treat vegetable seeds with chemicals to protect them from diseases in the soil. In nearly all cases, either thiram or captan is used. These seeds are safe to use if you use your common sense when handling the seeds. **Don't eat the seeds. Wash your hands after sowing.** You can choose to wear plastic gloves to minimize exposure to the chemicals. The vegetables produced from these seeds are completely safe.

Untreated seeds have a "happy face" sticker on the back of the packet.

6. **Use the plot labels** that are enclosed. This will help you remember which variety is which. Labels can fade. I strongly recommend that you **make a plot diagram after you are done planting** for your future reference.

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 also be interested in joining us, please share the enclosed brochure. The more gardeners, the stronger our research will be.

Sincerely,

Thomas Kalb, Ph.D.
Extension Horticulturist
tom.kalb@ndsu.edu

Appendix 2. Example of Evaluation Form

Muskmelon Variety Trial

2008 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: <i>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.</i>	

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

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

Judith Adamec	Junior Master Gardeners of	Laura Schumacker
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John Baldwin	Dorothy M. Keyes	Woody Selzler
Brice and Noa Barnick	Jamie L. Kinne	Corey Silvernagel
Trisha Beckman	Glenda Klein	Jordan Spitzer
Amy Benz	Kelly Krein	Rosie Sprynczynatyk
Lisa Berg	MaKayla Janssen	Tegtmeier Family
Calvin Bevny	Michelle R. Keller	Sarah Thiel
Kathy Blohm	Mike Kiernan	Bruce and Linda Vadnais
Mark G. Blonigen	Leah and Callie King	Doug Vannurden
Viola V. Bohrer	Lake Country Leaders 4-H Club	Stephanie Whitehead
Royann Bold	Sharon Lalum	Rick Willoughby
Marie Bonebrake	Greg A. Lindemann	Richard and Yvette Zimdars
Linda Bowers	Gwen Marsh	Neil Zimmerman
Denise Brown	Mike Matteson	
Caroline J. Derry	Rich Matteson	
Bonnie Dockter	Nancy McCormick	
Virginia Dockter	Agnes McIntyre	
Kristi L. Entzi	Tim McIntyre	
Marcia Fahn	Kayla J. Miller	
Pat Faul	Minot State University-Bottineau	
Arlene Ferrell	Student Organic Farm	
Sandra Fettig	Zack and Alicia Monson	
Jeri and Morgan Fischer	Kent M. Morrow	
Dan Folske	Rita A. Mulkern	
gardendwellers FARM	Tim Murphy	
Kaitlyn Gaulrapp and Mom	Kathryn Neumiller	
Verna Gowin	Forrest Nielsen	
Robyn Grant	John and Carolyn Oster	
Diane Gronfur	P & M Gardeners	
Anita Haakenson	Judy Pepple	
Kory Schauer Hagler	Cybil Perkins	
Sylvia Hansen	Patty Reeves	
Hattel Family Gardeners	Elvira Rogstad	
Muriel Hedrick and Erika Bauer	Janet Rostad	
Katie A. Hutchens	Carmen L. Ruud	
Britt Jacobson and Nathan	David Leon Sayer	
Kjelland	Matthew J. Schaeftbauer	
Denice Johnson	Gail Scherweit	

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