

Evaluation of Pesticide Compounds to Manage Bacterial Leaf Blight of Field Peas

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A research trial was conducted at the Langdon Research Extension Center with an objective to evaluate the performance of pesticide compounds to manage bacterial blight (BB) on field peas. The trial was planted on May 10, 2024, with the field pea variety ‘Salamanca’ in a randomized complete block design replicated four times. The trial adhered to state-recommended practices for land preparation, fertilization, seeding rate, and weed control. The plot size was 5 ft. wide x 16 ft. long with a field pea border on either side of each plot. Pesticide compounds were applied at the Vn stage (nth true leaf unfolded at nth node with tendril present) using a CO₂-pressurized backpack-style sprayer with a three-nozzle boom (XR-8002) at 20 GPA. Prevailing weather conditions were wet during the crop growth period, hence repeated treatment sprays at R-stage. The amount of BB infection obtained in the research plots was based on natural infections. A rigorous rating scale of 0 - 100 was adopted from Chaudhary 1996, where the severity of BB in a plot was recorded as the percentage of tissue area infected out of the total leaf area examined. This method ensured precision and accuracy. Fifty leaves from each plot were sampled and measured for the average percentage of lesion area.

Results: Significant differences were observed in bacterial blight control when sprayed with pesticide compounds compared to the non-treated check. There were no differences among the pesticide compounds evaluated, indicating that all options are equally viable. The bacterial blight incidence on various treatments on the field peas ranged from 3 to 20%, with a mean disease incidence of 8%. The severity of bacterial blight infections ranged from 2 to 14%, with a mean severity of 4%. The highest incidence and severity of bacterial blight were recorded in the non-treated check (Table 1). No significant differences were found in the yield (at 13.5% moisture) and test weight (Table 1) among the pesticide compounds tested and the non-treated check (P-value non-significant).

Table 1: Efficacy of pesticide compounds in managing bacterial blight of field pea and their influence on yield and test weight.

Treatments	Rate	Bacterial Blight		Phytotoxicity (0-10)	Yield (bu/A)	Test Wt. (lbs/bu)
		% Incidence	% Severity			
Kocide (Copper Hydroxide)	6 lbs/a	12	5	0.0	78	62.5
Copper Sulfate	6 lbs/a	9	4	0.0	74	62.5
Guarda	3.3 lts/a	8	4	0.3	70	63.0
Non-treated	CHK	20	14	0.0	68	62.5
Zinx Oxide	800mg/a	12	6	0.5	68	62.8
Kaolin Clay WP	½ lb/gallon of water	3	2	0.0	71	62.8
Resozurin Sodium Salt	10 mg/a	4	2	0.1	70	62.8
Neomycin	50 µg/ml	4	2	0.3	69	62.5
Streptomycin sulfate (Agrimycin)	3 lbs/a	3	2	0.0	71	62.8
Oxidate 5	1% V/V	4	3	1.8	71	62.7
	Mean	8	4	0.6	70	63
	CV%	64	86	151.0	10	1.1
	LSD	7	5	1.4	NS	NS
	P-Value (0.05)	0.0007*	0.0022*	0.0047*	NS	NS

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