

EVALUATION OF INSECTICIDES FOR CONTROL OF APHIDS ON POTATO, 2004

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Location: San Luis Valley Research Center, Center, CO

Cultivar: Russet Norkotah selection 8, cut seed, 2-4 oz.

Objective: To evaluate the efficacy of various insecticides in controlling aphids on potato.

Application: All treatments (including control) were treated with Maxim 4F @ 0.08 fl.oz./cwt as a liquid spray seed treatment prior to planting. In-Furrow and At-hilling treatments were applied using an R & D CO₂ charged backpack sprayer at 35 PSI, with two XR 8002VS nozzles, at 10 gallons/acre as a directed in-furrow application.

Treatments:

1. Control, no treatment
2. Platinum @ 0.52 fl.oz./1000 row ft. (In-furrow)
3. Cruiser @ 0.13 fl.oz./cwt (In-furrow)
4. Platinum @ 0.52 fl.oz./1000 row ft. (At-hilling)

Planted: May 11, 2004

Plot Design: Randomized complete block

Plot Size: 4 - 20 foot rows per treatment per replication

Plant Spacing: 12 inches

Row Spacing: 34 inches

Replications: Four

Irrigation: Solid set sprinkler, rate based on ET

Fertilizer: 80N-60P-40K-25S-2.5Zn, preplant, 20N through sprinkler after tuber set

Herbicide: Sencor, 0.66 lb./A + Dual Magnum, 1.5 pt./A + Spartan, 2.66 oz./A

Fungicide: None

Vine Killer: Mechanically removed on September 2, 2004

Harvested: September 7, 2004

DATA

Disease: Aphid readings were taken from 10 randomly selected plants per treatment per replication. The total number of aphids was recorded from one compound leaf from each of the 10 plants. Aphid readings were taken on the following dates: July 29, August 5, & August 19.

Yield: 4-20 foot rows per treatment per replication, total yield expressed as cwt/A.

Grade: By hand, percent tubers by weight in pounds and tuber no. < 4oz., 4-10oz., >10oz., US #2's, and culls.

Table 2. Effects of products applied at planting and in season on the incidence of aphids in the cultivar Russet Norkotah Selection 8, San Luis Valley, Colorado, 2004.

Treatment/Rate	Percent ^a					
	< 4 oz.	4-10 oz.	> 10 oz.	US #2s	Culls	Cwt/A ^b
1. Control, no treatment	7.6	38.0	50.9	1.0	2.5	380.0
2. Platinum @ 0.52 fl.oz./1000 row ft. (In-furrow)	7.1	38.7	50.0	1.0	3.2	409.1
3. Cruiser @ 0.13 fl.oz./cwt (In-furrow)	8.4	35.4	52.1	1.3	2.8	374.6
4. Platinum @ 0.52 fl.oz./1000 row ft. (At-hilling)	6.4	39.7	51.7	0.7	1.4	418.3
LSD(P=0.05)	NS	NS	NS	NS	NS	NS

^a Based on tuber weight in pounds, mean of four replications.

^b Total yield expressed as hundred weight per acre, 4-20 foot rows per treatment per replication, mean of four replications.

Table 1. Effects of products, applied at planting and in season, on the incidence of aphids in the cultivar Russet Norkotah Selection 8, San Luis Valley, Colorado, 2004.

Treatment/Rate	Avg. # Aphids per Leaf ^a		
	July 29	August 5	August 19
1. Control, no treatment	0.58 a	4.20 a	12.78 a
2. Platinum @ 0.52 fl.oz./1000 row ft. (In-furrow)	0.03 b	0.05 b	0.43 b
3. Cruiser @ 0.13 fl.oz./cwt (In-furrow)	0.00 b	0.08 b	1.60 b
4. Platinum @ 0.52 fl.oz./1000 row ft. (At-hilling)	0.05 b	0.05 b	0.73 b
LSD(P=0.05)	0.43	1.85	3.26

^a Average number of aphids per compound leaf per potato plant, 10 plants/treatment/replication/reading. Means followed by the same letters are not significantly different at P=0.05 for AUDPC.