

2004 EVALUATION OF FUNGICIDES APPLIED AT PLANTING FOR CONTROL OF POWDERY SCAB ON POTATO

- Researchers:** Richard Zink, Robert Davidson, and Andrew Houser, Colorado State University
- Location:** Off-station trial, San Luis Valley, CO
- Cultivar:** Cherry Red, cut seed, 2-4 oz.
- Objective:** To evaluate the efficacy of various fungicide treatments in controlling powdery scab on potato.
- Application:** In-furrow treatments were applied using an R & D CO₂ charged backpack sprayer at 35 PSI, with one XR 8002VS nozzle, at 10 gallons/acre. On-seed treatments were applied directly to whole seed and planted within twenty-four hours.
- Treatments:**
1. Control, no treatment
 2. Omega 1.5 pt./A, In-furrow
 3. Omega 3.0 pt./A, In-furrow
 4. Endura @ 20.5 oz./A, In-furrow
 5. Ranman @ 3.0 fl.oz./A, In-furrow
Silwett @ 2.0 fl.oz./A, In-furrow
 6. Ranman @ 6.0 fl.oz./A, In-furrow
Silwett @ 2.0 fl.oz./A, In-furrow
 7. Ranman @ 12.0 fl.oz./A, In-furrow
Silwett @ 2.0 fl.oz./A, In-furrow
 8. Topsin @ 1.5 lb./A, In-furrow
Topsin @ 1.5 lb./A, Foliar (July 28)
Topsin @ 1.0 lb./A, Foliar (August 18)
- Planted:** May 12, 2004 (Treatment #4 was planted on May 21)
- Plot Design:** Randomized
- Plot Size:** 2 - 20 foot rows per treatment per replication
- Plant Spacing:** 12 inches
- Row Spacing:** 34 inches
- Replications:** Four
- Irrigation:** Center pivot sprinkler, rate based on ET
- Fertilizer:** 40N-160P-0K-33S-2Zn preplant, 84N-18S topdress
- Herbicide:** Prowl @ 1.8 pt./A + Sencor @ 1/3 lb./A
- Insecticide:** Permethrin @ 6.4 oz./A
- Fungicide:** Dithane DF @ 1.5 lb./A + Amistar @ 2.0 oz./A + Agri Tin @ 2.5 oz./A
- Vine Killer:** Reglone @ 2.0 pt./A on August 25, 2004
- Harvested:** September 8, 2004

DATA

- Disease:** Mean percent of the number of tubers showing >10 powdery scab lesions at harvest.
- Yield:** 2-20 foot rows per treatment per replication, total yield expressed as cwt/A.
- Grade:** By hand, percent tubers by weight in pounds and tuber number unmarketable(< 4oz.) and marketable (>10oz.).

Table 1. Effect of fungicides, applied at planting and in season, on the incidence of powdery scab on tubers in the cultivar Cherry Red, San Luis Valley, Colorado, 2004.

Cultivar	Percent Yield		Cwt/A ^c	% Unmarketable ^d
	Unmarketable ^a	Marketable ^b		
1. Control, no treatment	21.1	78.9	475.2 bc	7.9
2. Omega 1.5 pt./A, In-furrow	22.7	77.3	552.2 a	9.0
3. Omega 3.0 pt./A, In-furrow	21.3	78.8	526.2 ab	5.7
4. Endura @ 20.5 oz./A, In-furrow	22.8	77.2	441.6 c	6.1
5. Ranman @ 3.0 fl.oz./A, In-furrow Silwett @ 2.0 fl.oz./A, In-furrow	23.0	77.0	480.0 bc	11.4
6. Ranman @ 6.0 fl.oz./A, In-furrow Silwett @ 2.0 fl.oz./A, In-furrow	21.9	78.1	489.7 bc	9.1
7. Ranman @ 12.0 fl.oz./A, In-furrow Silwett @ 2.0 fl.oz./A, In-furrow	22.0	78.0	474.3 bc	9.2
8. Topsin @ 1.5 lb./A, In-furrow Topsin @ 1.5 lb./A, Foliar (July 28) Topsin @ 1.0 lb./A, Foliar (August 18)	20.9	79.1	501.2 ab	8.1
LSD(P=0.05)	NS	NS	53.61	NS

^a Percent of tubers sized under four ounces, 2-20 foot rows per treatment per replication, mean of four replications.

^b Percent of tubers sized from four to 10 ounces, 2-20 foot rows per treatment per replication, mean of four replications.

^c Total yield expressed as hundred weight per acre, 2-20 foot rows per treatment per replication, mean of four replications.

^d Percent of unmarketable tubers due to the presence of Powdery Scab, tubers with 10 or more lesions were considered unmarketable, 2-20 foot rows per treatment per replication, mean of four replications.

Richard T. Zink, Associate Professor, Colorado State University

**Percent of Unmarketable tubers caused by Powdery Scab
San Luis Valley, Colorado, 2004**

