

2000

Potato Disease Management
Trials

SLV Research Center

Richard Zink, Potato Specialist

2000 POTATO - EARLY BLIGHT AND LATE BLIGHT FUNGICIDE TRIALS

- Researchers:** Richard T. Zink, Extension Potato Specialist, and Andrew Houser, Research Associate, Colorado State University, San Luis Valley Research Center, Center, CO
- Location:** San Luis Valley Research Center, Center, CO
- Treatments:** All treatments applied using an R & D CO₂ charged tractor mounted plot sprayer with four 8002VS nozzles spaced seventeen inches apart at 60 psi pressure and applying 40 gallons per acre water. Applications began July 3,2000.
- Spray Dates:** July 3,4,6; July 10,12,13; July 17,18,19; July 24,25; July 31, August 1; August 7,8; August 14,15; August 21,22; August 28,29
- Plot Design:** Randomized complete block
- Planted:** May 8, 1999
- Plot Size:** 4 – 20 foot rows per treatment, treatments applied to center two rows and data taken on two center rows
- Plant Spacing:** 12 inches
- Row Spacing:** 34 inches
- Replications:** Four
- Cultivar:** Russet Nugget
- Irrigation:** Solid set sprinkler, rate based on ET
- Fertilizer:** 90 lb/A N, 100 lb/A P, preplant
- Herbicide:** Matrix and Dual
- Harvested:** September 2000
- DATA:**
- Disease:** Early blight and late blight disease severity based on percent leaves infected, readings taken weekly starting July 24, 2000
- Yield:** 2 – 20 foot rows per treatment per replication expressed as cwt/A
- Grade:** Percent tubers by weight under 4 oz, 4-6 oz, 6-12 oz, over 12 oz, U.S. no. 2, culls and rots

2000 POTATO FUNGICIDE TRIALS
Colorado State University
San Luis Valley Research Center
Center, Colorado

7 day intervals used for all programs starting on July 3, 2000

<u>Program</u>	<u>Products</u>	<u>Rate</u>	<u>Itinerary</u>	<u>Est. total cost/A</u>
1	Control, no treatment			
2	Bravo WS	1.5 pt/A	1,2,3,4,5,6,7,8,9	
3	KQ667 68.8 WG	8.25 ozai/A	1,2,3,4,5,6,7,8,9	
4	KQ667 68.8 WG	11 ozai/A	1,2,3,4,5,6,7,8,9	
5	KQ667 68.8 WG	16.5 ozai/A	1,2,3,4,5,6,7,8,9	
6	KQ667 68.8 WG	22 ozai/A	1,2,3,4,5,6,7,8,9	
7	Manzate 75 DF	24 ozai/A	2,4,6,8	
	KP481 50 WG	4 ozai/A	1,3,5,7,9	
8	KP481 50 WG	5 oz/A	3,4,5,6,7,8,9	
	Manzate 75 DF	24 ozai/A	1,2	
9	Gavel 75DF	2.0 lb/A	1,2,4,6,7	
	Manzate 75 DF	24 ozai/A	3,5,8	
10	Gavel 75DF	2.0 lb/A	1,2,4,6,7,8	
	Quadris 2.08F	6.2 oz/A	3,5	
11	Bravo WS	1.5 pt/A	1,2,4,6,7,8	
	Quadris 2.08F	6.2 oz/A	3,5	
12	Manzate 75DF	2.0 lb/A	1,2,3,4,5,6,7,8,9	
	SuperTin 80W	2.5 oz/A	1,2,3,4,5,6,7,8,9	
13	Equus 720 g/l	1.5 pt/A	1,2,3,4,5,6,7,8,9	
14	Bravo WS	1.0 pt/A	2,4,6,8	
	CGA279202 50WG	0.25 lb/A	1,3,5,7	

<u>Program</u>	<u>Products</u>	<u>Rate</u>	<u>Itinerary</u>	<u>Est. total cost/A</u>
15	Bravo WS	1.0 pt/A	2,4,6,8,9	
	CGA279202 50WG	0.125 lb/A	1,3,5,7	
16	Bravo WS	1.0 pt/A	2,4,6,8,9	
	CGA279202 50WG	0.125 lb/A	1,3,5,7	
	Manzate 75 DF	1.07 lb/A	1,3,5,7	
17	Bravo WS	1.0 pt/A	2,4,6,8,9	
	CGA279202 50WG	0.25 lb/A	1,3,5,7	
	Manzate 75 DF	2.14 lb/A	1,3,5,7	
18	Bravo WS	1.5 pt/A	1,2,3,5,6,8,9	
	Acrobat 50 WP	5 oz/A	4,7	
	Manzate 75 DF	1.5 lbai/A	4,7	
19	Bravo WS	1.5 pt/A	1,2,3,5,6,8,9	
	Acrobat 50 WP	6.4 oz/A	4,7	
	Manzate 75 DF	1.5 lbai/A	4,7	
20	Bravo WS	1.5 pt/A	1,2,3,5,6,8,9	
	Acrobat 50 WP	4 oz/A	4,7	
	Manzate 75 DF	1.5 lbai/A	4,7	
21	Bravo WS	1.5 pt/A	1,3,5,7,8,9	
	Quadris 2.08F	6.2 oz/A	2,4,6	
22	Polyram 80DF	2 lb/A	1,3,5,7,8,9	
	Quadris 2.08F	6.2 oz/A	2,4,6	
23	Polyram 80DF	2 lb/A	1,3,5,6,7,8,9	
	SuperTin 80W	2.5 oz/A	1,3,5,6,7,8,9	
	Quadris 2.08F	6.2 oz/A	2,4	
24	Bravo WS	0.75 pt/A	1,2,3,4,5,6,7,8,9	
	Tatoo C 6.25F	1.3 pt/A	1,2,3,4,5,6,7,8,9	
25	Tatoo C 6.25 F	1.3 pt/A	1,2,4,5	
	Quadris 2.08 F	6.2 oz/A	3,6	
	Tatoo C 6.25 F	2.3 pt/A	7,8	

<u>Program</u>	<u>Products</u>	<u>Rate</u>	<u>Schedule</u>	<u>Est. total cost/A</u>
26	Bravo WS Reason 4.17 EC Bond 8.33 EC	0.75 pt/A 0.35 pt/A 4.0 fl oz/A	1,2,3 4,5,6,7,8,9 4,5,6,7,8,9	
27	Bravo WS	0.75 pt/A	1,2,3	
	Reason 4.17 EC	0.53 pt/A	4,5,6,7,8,9	
	Bond 8.33 EC	4.0 fl oz/A	4,5,6,7,8,9	
28	Walabi 150L	1.7 pt/A	1,2,3,4,5,6,7,8,9	

2000 POTATO SEED PIECE TREATMENT TRIALS

- Researchers:** Richard T. Zink, Extension Potato Specialist, and Andrew Houser, Research Associate, Colorado State University, San Luis Valley Research Center
- Location:** San Luis Valley Research Center, Center, CO
- Objective:** To evaluate the efficacy of various seed piece treatments in preventing disease and seed piece decay.
- Treatments:** All treatments applied directly to fresh cut seed and planted within twenty four hours
1. Control, no treatment
 2. Kocide 2000 at 2000 ppm
 3. Kocide 2000 at 2000 ppm + 6% mancozeb at 1.0#/cwt
 4. Kocide 2000 at 2000 ppm + liquid maxim at 0.08 floz/cwt
 5. PCC553-2 at 0.5#/cwt
 6. PCC553 at 1.0#/cwt
 7. PCC555-2 at 0.5#/cwt
 8. PCC555 at 1.0#/cwt
 9. PCC555-3 at 1.0#/cwt
 10. Liquid Maxim at 0.08 floz/cwt
 11. 6% MZ at 1.0#/cwt
 12. Liquid Maxim at 0.08 fl oz/cwt + streptomycin
 13. 6% MZ +

- Plot Design:** Randomized complete block
- Planted:** May 10, 2000
- Plot Size:** 1 - 35 foot row per treatment per replication
- Plant Spacing:** 12 inches
- Row Spacing:** 34 inches
- Replications:** Four
- Cultivar:** Sangre cut seed
- Irrigation:** Solid set sprinkler, rate based on ET
- Fertilizer:** 90 lb/A N, 100 lb/A P, preplant
- Herbicide:** Matrix and Dual
- Harvested:**
- Vine killer:** Sulfuric acid

DATA

- Stand:** 1 - 35 foot row/treatment/replication, counts taken about 30 days after planting
- Seed Piece Decay:** soft-rot and dry-rot combined rated 1-100, 0 = no decay and 100 = complete decay; 5 seed pieces/treatment/replication
- Rhizoctonia stem canker:** percent stems infected; 5 plants/treatment/replication
- Blackleg:** percent stems infected; 5 plants/treatment/replication
- Plant vigor:** Rated 1-4; 1 = poor and 4 = good; 5 plants/treatment/replication
- Stems:** Average number of stems per plant; 5 plants/treatment/replication
- Yield:** 1 - 30 foot row per/treatment/replication, total yield expressed in cwt/A

**2000 PROTOCOL FOR EVALUATION OF FUNGICIDES APPLIED AT PLANTING
FOR CONTROL OF SOIL-BORNE DISEASES OF POTATOS**

Researcher: Richard T. Zink
Extension Potato Specialist
Colorado State University
San Luis Valley Research Center
Center, CO 81125

Location: San Luis Valley Research Center, Center, CO

Cultivar: Sangre cut seed

Treatments:

1. Control, no treatment
2. Ridomil Gold EC, at 0.42 oz/1000 feet of row
3. Ultra-Flourish, 0.42 oz/1000 feet of row
4. Ultra-Flourish, 0.84 oz/1000 feet of row
5. Platinum
6. A12425
7. Quadris, 0.15 oz/A
8. Quadris, 0.15 oz/A + Blocker 4F, 5 pt/A
9. Blocker 4F, 7 pt/A
10. Blocker 4F, 10 pt/A

Planted: May 11, 2000

Plot Design: Randomized complete block

Plot Size: 1 - 30 foot row /treatment/replication

Plant Spacing: 12 inches

Row Spacing: 34 inches

Replications: Four

Irrigation: Solid set sprinkler, rate based on ET

Fertilizer: 90 lb/A N, 100 lb/A P, preplant

Herbicide: Matrix and Dual

Fungicide: Bravo alternated with Quadris for blight control

Vine killer: Sulfuric acid

Harvested: By hand, September 2000

DATA:

Disease: Percent stems and stolons and at harvest tubers by weight showing disease symptoms

Yield: 1-25 foot row per treatment per replication expressed as cwt/A

Grade: By hand, percent tubers by weight under 4 oz, 4-10 oz, over 10oz, misshapen and pink rot

In-Furrow Fungicide Trial for Control of Powdery Scab Warsh/Myers Farm, Center

Treatments

1. Control
2. Fluazinam 4 Kg A/ha at planting over seed in-furrow
3. Fluazinam 4 Kg A/ha 1/3 preplant in-furrow, 1/3 over seed, 1/3 at closing of furrow
4. Fluazinam 4 Kg A/ha on top of closed row
5. Quadris 0.15 oz A/1000 row ft over seed in-furrow
6. Quadris 0.30 oz A/1000 row ft over seed in-furrow
7. Blocker 10G 25 lbs/A over seed in-furrow
8. Blocker 4F 7 pt/A over seed in-furrow
9. Blocker 4F 10 pt/A over seed in-furrow
10. Fluazinam 2 Kg A/ha + Blocker 4F 10pt/A over seed in-furrow
11. Dimethomorph 50WP 6.4 oz A/A over seed in-furrow
12. Biological at 250 ml per 50 row ft. over seed in-furrow

**2000 PROTOCOL FOR EVALUATION OF ASCEND PA IN FALL-FUMIGATED POTATO
PRODUCTION SYSTEMS IN THE SAN LUIS VALLEY OF COLOARDO**

Researcher: Richard T. Zink
Extension Potato Specialist
Colorado State University
San Luis Valley Research Center

Location: Four fall-fumigated fields
Cultivars: Centennial, Russet Nugget, Viking and Molli
Seed: A typical combination of cut and uncut seed tubers
Treatment application: All treatments applied according to Tessengerlo Kerley recommendations
Treatments:

1. Control, untreated
2. Ascend PA, 5 gallons per acre just after planting in hill

Plot Design: Randomized
Plot Size: 2 – 15-foot row/treatment/replication/field
Plant Spacing: 12 inches
Row Spacing: 34 inches
Replications: Four
Irrigation: Center pivot
Fertilizer: To be determined by grower/field
Herbicide: To be determined by grower/field
Insecticide: To be determined by grower/field
Fungicide: To be determined by grower/field
Vine Killer: To be determined by grower/field
Plant: To be determined by grower/field
Harvest: To be determined by grower/field

DATA

Stand: 2 – 15-foot row/treatment/replication/field, counts taken about 20, 25, and 30 days after planting
Seed Piece Decay: Soft-rot and dry-rot combined rated 1-100, 0 = no decay and 100 = complete decay; 5 seed pieces, treatment/replication/field 30 days and 60 days after planting
Rhizoctonia stem canker: Percent stems infected; 5 plants/treatment/replication/field 30 days and 60 days after planting
Blackleg: Percent stems infected; 5 plants/treatment/replication/field 30 days and 60 days after planting
Plant vigor: Rated 1-4, 1 = poor and 4 = good; 5 plants/treatment/replication/field 30 days and 60 days after planting
Stems: Average number of stems per plant; 5 plants/treatment/replication/field 30 days and 60 days after planting
Stolons: Average number of stolons per stem per plant; 5 plants/treatment/replication/field 30 days and 60 days after planting
Tubers: Average number of developing tubers per plant; 5 plants/treatment/replication/field 60 days after planting
Root Development: Rated 1-4, 1=poor and 4=good and extensive; 5 plants/treatment/replication/field 30 days and 60 days after planting, ratings will be documented by photograph
Yield: By hand, 2 – 15-foot row/treatment/replication/field expressed as cwt/A
Grade: By hand, percent tubers by weight under 4 oz., 4-10 oz., over 10 oz. and misshapen

**2000 POTATO – PROTOCOL FOR USING AUXIGRO TO DETERMINE OPTIMAL
RATE AND TIMING ON POTATO VARIETIES**

Researchers: Richard T. Zink, Extension Potato Specialist, and Andrew Houser, Research Associate, Colorado State University, San Luis Valley Research Center, Center, CO

Location: San Luis Valley Research Center, Center, CO

Treatments: All treatments applied using an R & D CO₂ charged tractor mounted plot sprayer with four 8002VS nozzles spaced seventeen inches apart at 60 psi pressure and applying 40 gallons per acre water. Applications began July 7, 2000.

Spray Dates: July 7 and July 17

Plot Design: Randomized complete block
Planted: May 10, 2000
Plot Size: 4 – 20 foot rows per treatment, treatments applied to center two rows and data taken on two center rows
Plant Spacing: 12 inches
Row Spacing: 34 inches
Replications: Four
Cultivar: Chipeta
Irrigation: Center Pivot sprinkler, rate based on ET
Fertilizer: 90 lb/A N, 100 lb/A P, preplant
Herbicide: Dual and Sencor
Harvested: September 2000

DATA:

Yield: 2 – 20 foot rows per treatment per replication expressed as cwt/A
Grade: Percent tubers by weight under 4 oz, 4-6 oz, 6-12 oz, over 12 oz, U.S. no. 2, culls and rots

2000 Auxigro Trials
Colorado State University
San Luis Valley Research Center
Center, Colorado

Application dates are July 7 and July 17, 2000

Program	Company/Product	Rate	Itinerary
01	UAP		
	AUXIGRO WP	5.0 oz/A	01
	AUXIGRO WP	5.0 oz/A	02
02	UAP		
	AUXIGRO WP	5.0 oz/A	01
	AUXIGRO WP	5.0 oz/A	02
03	UAP		
	AUXIGRO WP	4.0 oz/A	01
	AUXIGRO WP	4.0 oz/A	02
04	UAP		
	AUXIGRO WP	3.0 oz/A	01
	AUXIGRO WP	3.0 oz/A	02
05	UAP		
	AUXIGRO WP	4.0 oz/A	01
06	UAP		
	AUXIGRO WP	4.0 oz/A	02