OSU

Oregon State University

Hermiston Agricultural Research & Extension Center

2013 Potato Field Day

HAREC Potato Field Day
June 26, 2013

7:45 – 8:15a.m. Registration and Welcome

8:15 – 8:40a.m. Flying UAV's: Using Unmanned Aerial Vehicles to Scan Potatoes – Don Horneck, Extension Agronomist, OSU and Ray Hunt, Research Physical Scientist, USDA-ARS

8:40 – 9:05a.m. Potato breeding and variety development at Oregon State University – Sagar Sathuvalli, Potato Breeding and Genetics, OSU

9:05 – 9:30a.m. Preliminary results on use of *Bacillus mycoides* isolate J (BmJ) induced resistance, stylet oils and insecticides in management of Potato Virus Y - Nina Zidack, Director, Montana Seed Potato Certification, MSU

9:30 – 9:55a.m. Use of Chloropicrin as a Soil Fumigant in Potatoes - Phil Hamm, Plant Pathologist and Station Director, OSU

9:55 – 10:20a.m. Seed, In-furrow and Foliar Applications of Products to Manage Verticillium Wilt in Potato - Lyndon Porter, USDA-ARS

10:20 – 10:55a.m. The Use of Phosphorus and Bio Stimulants to Extend the Growing Season - Don Horneck, Extension Agronomist, OSU

10:55 – 11:20a.m. Irrigated Agriculture Entomology Program: Research Update 2013 and beyond - Erik Echegaray and Alexzandra Murphy, Entomology Postdoctoral Scholars and Silvia I. Rondon, Extension Entomologist Specialist, OSU

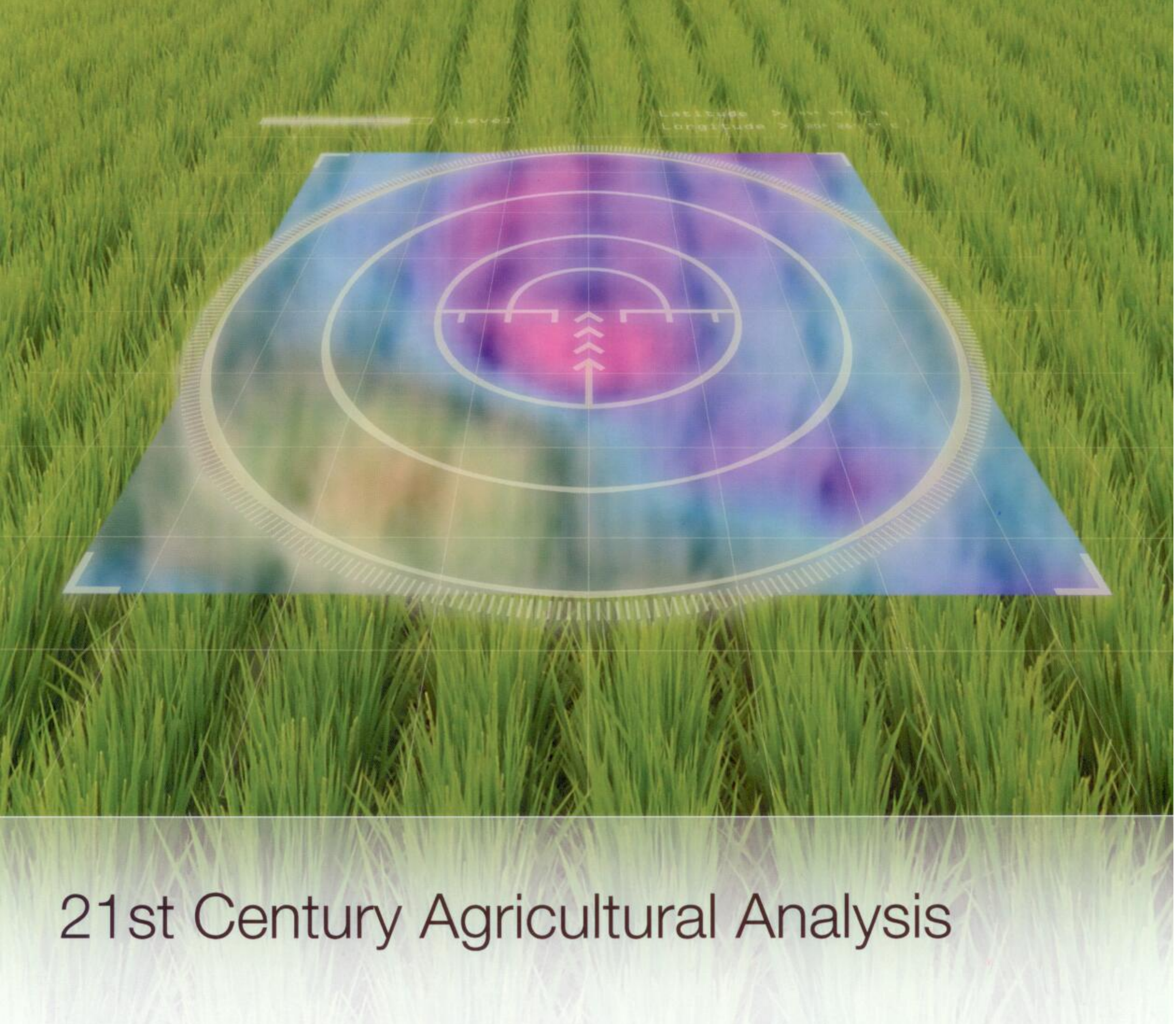
11:20 – 11:55a.m. Potato Pesticide Research at HAREC – Josh Adkins, Research & Development Scientist, Syngenta Crop Protection

11:55 – 12:20a.m. Interpreting UAV (Unmanned Aerial Vehicle) Earlier Flight Data – Ray Hunt, Research Physical Scientist, USDA-ARS and Don Horneck, Extension Agronomist, OSU

12:20p.m. Lunch provided courtesy of Syngenta Crop Protection. Thank you.

Pesticide credits for Oregon, Washington, and CCA credits will be available.

PRECISION AGRICULTURE
Decision Support Systems



21st Century Agricultural Analysis

PARADIGM CHS Oregon State University OSU Hermiston Agricultural Research & Extension Center USDA BOEING

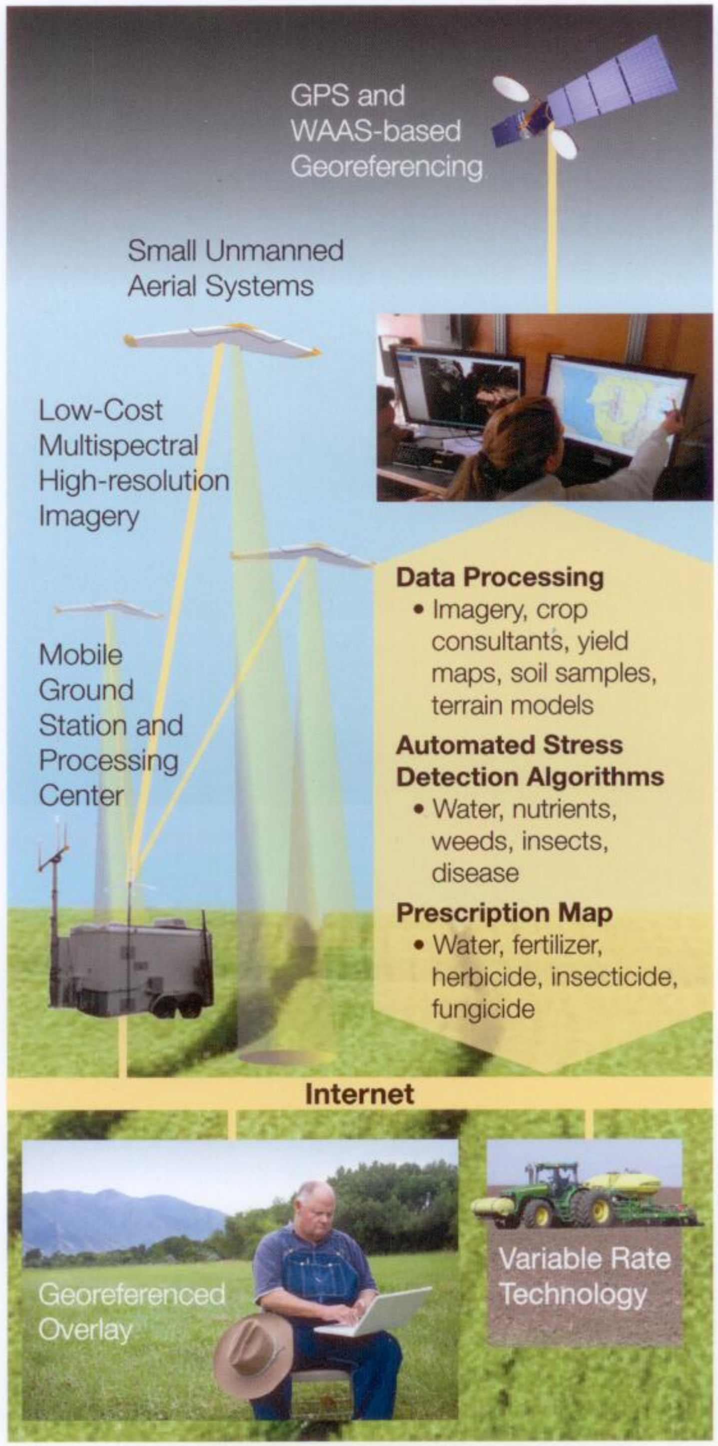
PRECISION AGRICULTURE
Decision Support Systems

Precision Agriculture, using unmanned aerial systems (UAS), is a new concept for collecting high-resolution multispectral imagery for automated crop stress detection and identification. The intent of this concept is to augment digital prescription plans for more precise applications of fertilizers, pesticides, and water using the new Variable Rate Technology and Irrigation equipment.

Precision Agriculture, using imagery from UAS aircraft, may enable a significant leap forward in both the quality and timeliness of information at a reduced cost to the grower. Emerging UAS aircraft technologies leverage the large investments in aerospace to enable the collection of multispectral and thermal imagery over millions of acres of farmland. The UAS-based concept would employ large numbers of simultaneous aircraft managed by only two to three operators on the ground. The collected imagery will be at resolutions capable of imaging individual plants. UAS-based imagery is expected to have resolutions measured in inches compared with 10's of feet from satellites or several feet from fixed wing aircraft. It is also anticipated to be capable of collecting multiple revisits per week throughout the growing season.

An unique feature of the UAS-based Precision Agriculture concept is an open software policy capable of accepting any third-party objectives. This feature enables the creation of custom products for individual growers. One grower may want nutrition information, while another wants information on insects. Initially, the prescription plans would be delivered in person, ultimately accessed through web services either in the office or the field through wireless connections and smart phones.

The concept for UAS-based Precision Agriculture has been designed to provide affordable digital crop stress and prescription plan products of the highest quality.



Points of Contact:

OSU	Prof. Phil Hamm	541-567-8321	CHS	Nathan Kosbau	320-360-3367
USDA	Dr. Ray Hunt	301-504-5278	PARADIGM*isr*	David Blair	541-617-0011
Boeing	Paul Parks	206-766-4142			

MVD13-246741

Western Region IPM- Integrated Management of PVY- Year 1 Report

Barry Jacobsen[1], **Nina Zidack[1]**, Phil Hamm[2] , and Silvia Rondon[2]

1. Montana State University, 2. Oregon State University- Hermiston

In 2012, we initiated a 3-year study on PVY management integrating BmJ induced resistance, stylet oils, rogueing and insecticides that preserve beneficial insects. Certified seed producers limit PVY through the use of virus-free early generation planting materials, isolation, use of non-host border plantings, rogueing, select planting time insecticides and foliar applied insecticides that control aphids from emergence through vine-kill. Recently, stylet oils that limit stylet borne virus transmission are becoming more widely adopted. BmJ (Certis USA) has been evaluated by the project PIs for three years in both greenhouse and field trials at Hermiston with the result that PVY infection has been reduced by 20-70% with best control in systems integrating BmJ, rogueing and and insecticides that preserve beneficial insects. In 2012, an experiment was initiated to evaluate BmJ, Stylet oil, and insecticides alone and in combination for efficacy in reducing PVY in potato. Data from 2012 are given in Table1. and individual treatments are described. PVY levels were very high and may be due to high populations of aphids migrating from an adjacent wheat planting, use of yellow flags that may have attracted aphids and use of 1% PVY infected potatoes in border rows of all plots. Despite this, on August 1 all treatments except the no gap insecticide and BmJ + no gap insecticide reduced PVY infections. In winter tests, reductions were noted only from the stylet oil applications, although the BmJ + no gap insecticide and BmJ + stylet oil did have reduced PVY infections at the 10% level of statistical confidence. The table below shows data from the full experiment (8 replications) as well as data from 4 replicate plots. The 4 replicates eliminated in the final analysis had an overwhelming level of PVY due to an influx of aphids from nearby ripening grain. There were no differences in yield at the 5% level of statistical confidence between treatments. This plot is repeated this year but without PVY infected border rows. In addition, a second experiment is underway examining only treatments 1,3, 5 and 8 in Table 1, with and without roguing. In prior work in 2010 and 2011 we demonstrated the importance of roguing in management of PVY.

Table 1. Effect of stylet oils, BmJ induced resistance, and insecticides on %PVY in summer and winter testing.

#	Hermiston 2012 Treatment	% PVY infection August 1, 2012	8 rep % PVY Winter test	4 rep % PVY Winter test
1	UTC	17.5	57.8 abc	51.5 a
2	BmJ Microbial Fungicide @ 2 oz /A applied @ a 12 day interval from emergence till vine kill (~9/1/12-13)	11.5	66.4 a	53.5 a
3	Stylet oil at 4% applied every 4 days from emergence till vine-kill	4.5	35.4 d	18.7 b
4	BmJ, Stylet oil- rates and timing as above	7	45.0 dc	27.2 ab
5	No- gap insecticide (Movento 5 oz/A@60 days, Fulfill 5.5oz/A @ 72 days, Movento 5 oz/A @84 days and Beleaf 2.8 oz /A@96 days post planting)	22	65.4 a	49.7 a
6	BmJ, No-gap insecticide	15	65.3 a	36.3 ab
7	Stylet oil, No-gap insecticide	7.5	48.9 abcd	40.2 ab
8	BmJ, Stylet oil, No-gap insecticide	8.0	45.7bcd	27.3 ab
	Flsd 0.05	3.8	19.9	26.5

Chloropicrin Fumigation Trial 2013

General Materials and Methods

The trial is located in the SE quadrant of Pivot 3 at the Hermiston Agricultural Research and Extension Center (HAREC) south of Hermiston, Oregon. The area was previously cropped to winter wheat. The fall tillage practices included ripping to a depth of 18 inches, discing twice, and roller-harrowing. This plot was purposely not located in an area where metam sodium had been applied.

Fertility and Irrigation

The fertility program began with a pre-season fertilizer application on 5 March that consisted of 40N- 100P- 100K- 30S- 5Zn- 1B at a rate of 60 lbs/ac. Additional nitrogen has been added weekly, following emergence.

Pest Management

Weeds were controlled with 1.50 pts/acre Matrix (rimsulfuron) and 1.50 pt/acre Dual II Magnum (metolachlor). The herbicides were tank mixed and broadcast ground applied in 20 gallons of water/acre and then immediately incorporated with 0.5" irrigation water on 8 May. Early season Colorado potato beetle and aphid control was achieved with an in-furrow application of Admire Pro (imidacloprid) at 0.56 oz/1000 feet of row.

Treatment methods and materials

Plot design layout and planting

Treatments were assigned in a randomized complete block design with six replications. Individual plots were 4 potato rows (2.8') wide x (50') long. Each potato row per treatment was fumigated individually according to the treatment list below on 19 October, 2012. Certified potato seed cv. Russet Burbank was used, with seed pieces averaging ~4 ounces. The trial was bulk planted at a 9 inch spacing on 11 April, 2013 using a 2 row John Deere pick planter.

Data collection

All data is being collected from the center two rows of the 4 row plots. Soil was collected from each plot to assess soil fungal and nematode pathogen levels. A pre-fumigation sampling was performed on 18 October 2012, and a pre-plant sampling was performed on 8 April 2013. Soil samples to be collected late August/early September will be used to asses late season levels of soilborne fungi and nematodes.. Soil fungi levels will be reported as colony forming units (CFU) per gram of dry soil and nematodes are reported as total nematodes in 250 grams dry soil.

Mid season assays;

Stem crushes will be performed mid-July to assay *V. dahliae* infection. Petiole will be sampled monthly to assess NPKS levels. Levels of root lesion nematodes will be assessed mid season.

Yield and tuber evaluations

Yield and grade of the different size classes (tubers weighing under 4 ounces, between 4-8 ounces, 8-12 ounces, over 12 ounces, as well as culled tubers) was determined by harvesting potatoes from each center row of each replication. Rhizoctonia and black dot infection on tubers will be assessed.

Table 1. Fungicides treatments and their rates[1]

Treatment #	Fungicide	Formulation	Product Rate	PIC Rate (a.i.)
1	Untreated	-	-	-
2	Metam Sodium-Grower Standard	Vapam	40 g/A	-
3	PIC Plus	85.5% PIC, 14.5% Emulsifier	5.8 g/A	60 lb/A
4	PIC Plus	85.5% PIC, 14.5% Emulsifier	8.8 g/A	90 lb/A
5	PIC Plus	85.5% PIC, 14.5% Emulsifier	11.7 g/A	120 lb/A
6	PIC Plus	85.5% PIC, 14.5% Emulsifier	14.6 g/A	150 lb/A
7	PIC Clor 80	80.0% PIC, 20.0% Telone II	TBD	90 lb/A
8	PIC Clor 80	80.0% PIC, 20.0% Telone II	TBD	120 lb/A

[1]Applications made 19 October, 2012.

Chloropicrin Station Fumigation Trial 2012-2013

Plot layout

8	4	2	1	6	5	7	3
5	6	2	8	1	7	4	7
3	8	5	1	2	8	6	4
5	1	6	2	4	3	7	3
2	5	8	6	3	1	7	4
1	2	3	4	5	6	7	8

North →

2013 Chloropicrin Trial (Soilborne Pathogenic Fungi)

Experiment Station Fumigant Treatment	Formulation	Chloropicrin Rate (a.i., lb/A)	*Pythium* spp.		*Fusarium* spp.		*Verticillium dahliae*	
			Pre-Fum	Post-Fum	Pre-Fum	Post-Fum	Pre-Fum	Post-Fum
Non-Treated Control	n/a	n/a	189 a	90 a	4833 a	2581 a	25 b	13 a
Metam Sodium –	Vapam	40 gallon	152 a	9 d	4786 a	241 d	20 b	4 bc
PIC Plus	85.5% PIC; 14.5% Emulsifier	60	136 a	69 abc	3108 a	2869 a	27 ab	8 abc
PIC Plus	85.5% PIC; 14.5% Emulsifier	90	107 a	45 bcd	5125 a	2145 ab	44 a	3 bc
PIC Plus	85.5% PIC; 14.5% Emulsifier	120	102 a	45 bcd	4633 a	1211 bcd	24 b	2 bc
PIC Plus	85.5% PIC; 14.5% Emulsifier	150	105 a	32 cd	3521 a	884 cd	28 ab	0 c
PIC Clor 80	80.0% PIC; 20.0% Telone II	90	100 a	72 ab	4569 a	2534 a	23 b	10 ab
PIC Clor 80	80.0% PIC; 20.0% Telone II	120	109 a	79 ab	3990 a	2023 abc	24 b	10 ab
		P-value	0.14	0.01	0.44	0.01	0.01	0.05

Pre-fumigation sampling date: 10/18/12, Post fumigation sample 4/8/13, Pic Plus/PIC Clor and MS treatments 10/19/13

Soil fungi values are reported as colony forming units per gram dry soil

AgriNW McNary Treatments	Formulation	Chloropicrin Rate (a.i., lb/A)	*Pythium* spp.		*Fusarium* spp.		*Verticillium dahliae*	
			Pre-Fum	Post-Fum	Pre-Fum	Post-Fum	Pre-Fum	Post-Fum
Metam Sodium		40 gallons	102 a	18 a	4417 a	572 a	35 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	90	122 a	63 b	4885 a	1389 a	32 a	TBC
PIC Plus	85.5% PIC; 14.5% Emulsifier	120	101 a	58 b	4511 a	1210 a	29 a	
		P-value	0.21	0.01	0.33	0.18	0.74	

Pre-fumigation sampling date: 10/18/12, post fumigation sample 3/25/13, PIC Plus Treatment 10/19/12, MS Treatment 10/10/12

Soil fungi values are reported as colony forming units per gram dry soil

RDO Berg Treatments	Formulation	Chloropicrin Rate (a.i., lb/A)	*Pythium* spp.		*Fusarium* spp.		*Verticillium dahliae*	
			Pre-Fum	Post-Fum	Pre-Fum	Post-Fum	Pre-Fum	Post-Fum
Metam Sodium		40 gallons	147 a	71 a	9872 a	2675 a	48 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	90	146 a	6 a	7352 a	1219 b	61 a	TBC
PIC Plus	85.5% PIC; 14.5% Emulsifier	120	169 a	20 a	8126 a	813 b	49 a	
		P-value	0.87	0.41	0.6	0.03	0.13	

Pre-fumigation sampling date: 10/18/12, Post fumigation sample 4/15/13, PIC Plus Treatment 3/23/13, MS treatment 10/19/2012

Soil fungi values are reported as colony forming units per gram dry soil

TBC: to be completed

2013 Chloropicrin Trial (Soilborne Nematodes)

Experiment Station Fumigant Treatment	Formulation	Chloropicrin Rate (a.i., lb/A)	Lesion Nematodes Pre-Fum	Lesion Nematodes Post-Fum	Free-living Nematodes Pre-Fum	Free-living Nematodes Post-Fum
Non-Treated Control		n/a	286 a		1190 a	
Metam Sodium	Vapam	-	232 a		1180 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	60	299 a		1351 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	90	384 a	TBC	1254 a	TBC
PIC Plus	85.5% PIC; 14.5% Emulsifier	120	336 a		1336 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	150	331 a		1356 a	
PIC Clor 80	80.0% PIC; 20.0% Telone II	90	264 a		1891 a	
PIC Clor 80	80.0% PIC; 20.0% Telone II	120	292 a		1410 a	
		P-value				

Pre-fumigation sampling date: 10/18/12, Post fumigation sample 4/8/13, Pic Plus/PIC Clor and MS treatments 10/19/13

Nematode values reported as total nematodes per 250 grams dry soil

AgriNW McNary Treatments			Lesion Nematodes Pre-Fum	Lesion Nematodes Post-Fum	Free-living Nematodes Pre-Fum	Free-living Nematodes Post-Fum
Metam Sodium		40 gallons	110 a		941 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	90	221 a	TBC	1426 a	TBC
PIC Plus	85.5% PIC; 14.5% Emulsifier	120	171 a		1057 a	

Pre-fumigation sampling date: 10/18/12, post fumigation sample 3/25/13, PIC Plus Treatment 10/19/12, MS Treatment 10/10/12

Nematode values reported as total nematodes per 250 grams dry soil

RDO Berg Treatments			Lesion Nematodes Pre-Fum	Lesion Nematodes Post-Fum	Free-living Nematodes Pre-Fum	Free-living Nematodes Post-Fum
Metam Sodium		40 gallons	43 a		1184 a	
PIC Plus	85.5% PIC; 14.5% Emulsifier	90	24 a	TBC	1362 a	TBC
PIC Plus	85.5% PIC; 14.5% Emulsifier	120	47 a		1651 a	

Pre-fumigation sampling date: 10/18/12, Post fumigation sample 4/15/13, PIC Plus Treatment 3/23/13, MS treatment 10/19/2012

Nematode values reported as total nematodes per 250 grams dry soil

TBC: to be completed

TITLE: Seed treatments, foliar and In-furrow Applications of Nutrients to manage Verticillium Wilt in Potato

Researchers: Lyndon Porter, Ph. (509) 786-9237, Fax (509)786-9277), Email lyndon.porter@ars.usda.gov, 24106 N. Bunn Rd., Prosser, WA, 99350; Don Horneck, Ph. (541) 567-8321, Email Don.Horneck@oregonstate.edu; and Phil Hamm, Ph. (541) 561-4724, Email philip.b.hamm@oregonstate.edu; Address and fax for Horneck and Hamm: 2121 S. First Street, Hermiston, OR 97838, Fax (541) 567-2240

HYPOTHESIS AND OBJECTIVES:

Disease severity of Verticillium wilt in potato fields can be significantly reduced through the use of in-furrow nutrient applications, seed treatments and foliar applications of different forms of phosphorus.

1. Identify the impact of Ca, Mn and P when applied in-furrow at planting on the severity of Verticillium wilt in field and greenhouse trials and collect data regarding plant emergence, tuber yield, tuber quality and specific gravity.

2. Assess the impact of fungicides/insecticides and nutrients when applied as seed treatments on the severity of Verticillium wilt in field and greenhouse trials.

3. Determine the impact of early foliar applications of different forms of phosphorus on the severity of Verticillium wilt, tuber yield, quality and specific gravity.

Treatments

1. Non-treated seed
2. Standard Commercial seed treatment (SCST) (Not tumbled)
3. SCST (Tumbled in cement mixer)
4. SCST + Quadris (Seed Treatment)
5. SCST + Ridomil (Seed Treatment)
6. SCST + Benlate (Seed Treatment)
7. SCST + Movento (Seed Treatment)
8. SCST + Manganese sulfate (Seed treatment)
9. SCST + Banrot 40 WP (Seed Treatment)
10. SCST + Phosphorus 1034 @ 200 lb of P/Acre (In-furrow)
11. SCST + Phosphorus 1152 @ 200 lb of P/A (in-furrow)
12. SCST + Calcium chloride @ 100 lb of Ca/Acre (in-furrow)
13. SCST + Manganese sulfate @ 10 lb of Mn/Acre (In-furrow)
14. SCST + O-Phos @ 6 gallons per acre (In-furrow)
15. SCST + O-Phos @ 8 gallons per acre (In-furrow)
16. SCST + O-Phos @ 8 gallons per acre + 1 lb. Axilo Ca + 1 lb. Axilo Mn (In-furrow)
17. SCST + Banrot (In-Furrow)
18. SCST + Ridomil (In-Furrow)
19. SCST + Benomyl (In-Furrow)
20. SCST + Quadris (In-furrow)

21. SCST + Phosphoric acid (Two foliar applications, one at 100% emergence and two weeks later)

22. SCST + Phosphorous acid at 4 pints/Acre (Two foliar applications, one at 100% emergence and two weeks later)

2013 Trials
P related

- Mosaic
- Transit
- Agrinos
- Siapton
- Crystal Green
- Ignite
- Agri-Northwest

Transit treatments 2013

Treatments

1. **Control no transit or P applied**
2. **Control Transit applied**
3. **100 lb. P/a with transit**
4. **100 lb. P/a w/o transit**

E

n

1	2	3	4
4	3	2	1
2	1	4	3
3	4	1	2
4	2	3	1

w

Mosaic/ Crystal green 2012

- Methods
  - Planted at HAREC, soil test P was 15ppm
  - Left rows open for band
  - Covered after at planting and P applied
  - Monitored
    - Petioles
    - PRS probes
  - Harvested

PRS probes

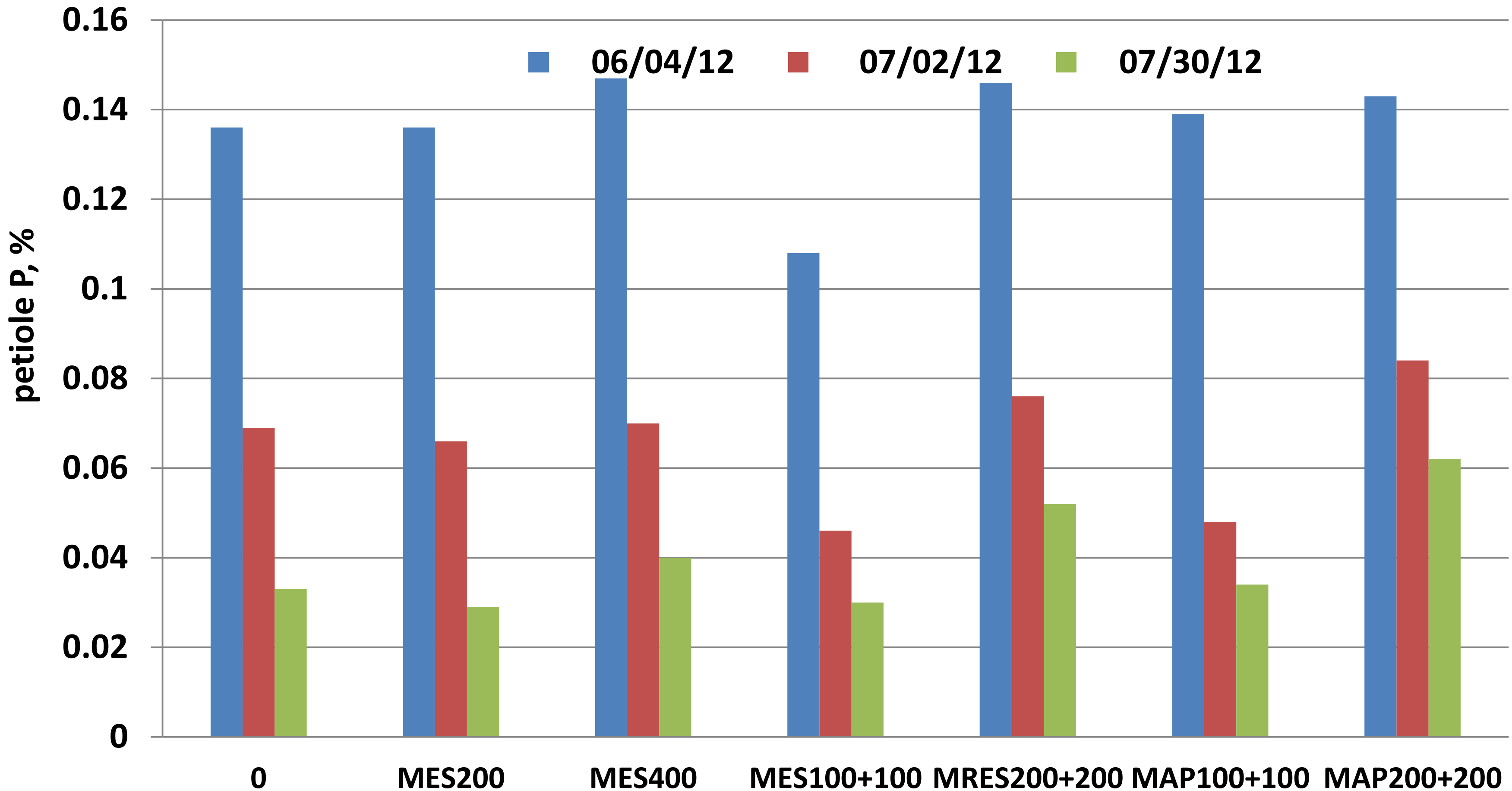
One is anion and one is cation

2012 Mosaic Treatments

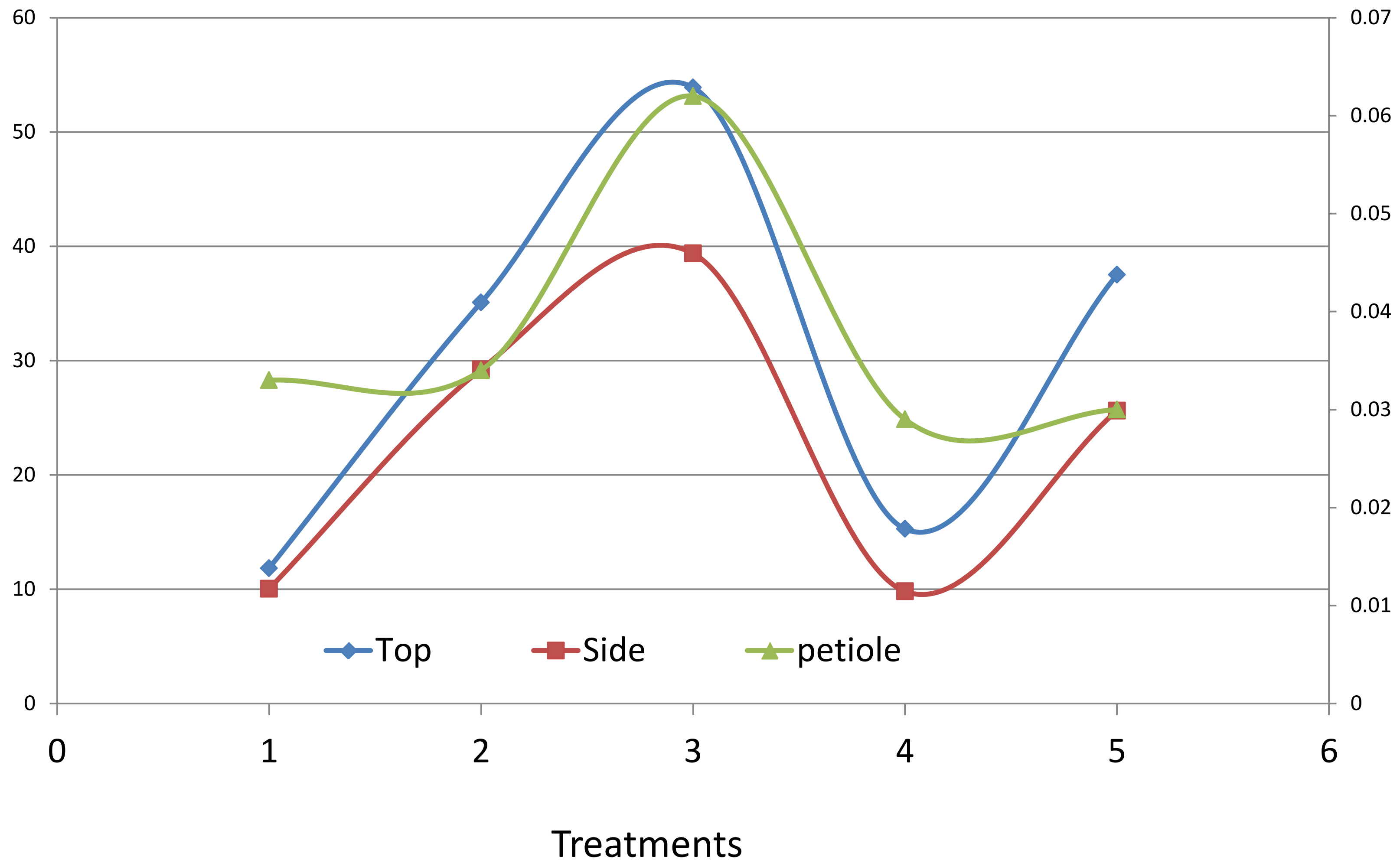
1) **Check 0**
2) **MESZ (12-40-0-10S-1Zn) 200**
3) MESZ 400
4) **MESZ + 10-34 100+100**
5) MESZ + 10-34 200+200
6) **11-52 + 10-34 100+100**
7) **11-52 + 10-34 200+200**
8) ACT102E (11-38-0-10S-1Zn-.6B) 400
9) ACT102E + 10-34 200+200

PRS probe treatments

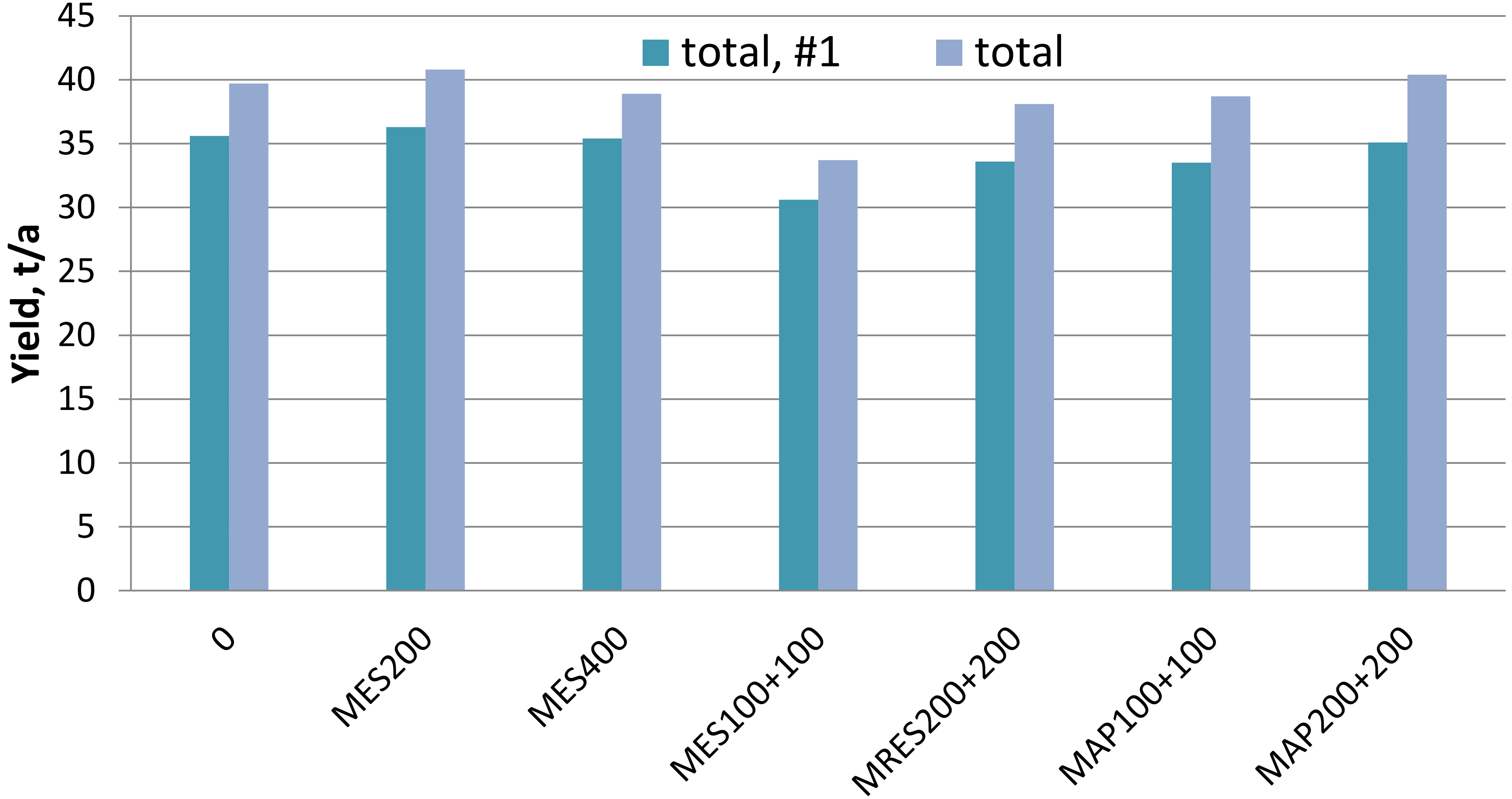
2012 petiole P, Mosiac



PRS vs. petioles, Mosaic



Yield Russet Burbank
MESZ, 2012



Crystal green

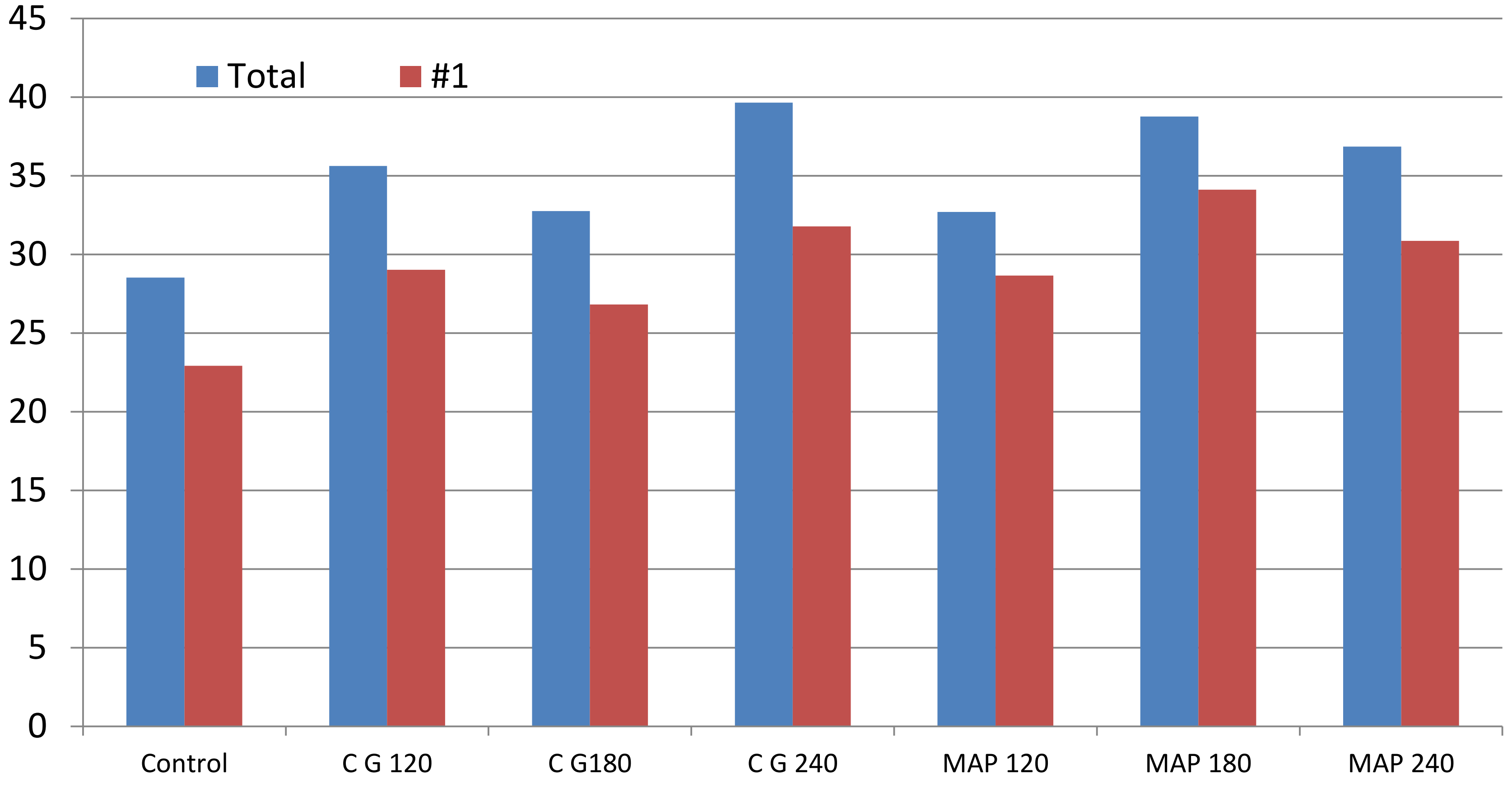
- New product
- Slow release P
- Recycled P

- With the prospect of P running out we need to be much better at recycling

Crystal green, 2012 RB potatoes

Treatment	Yield in tons/acre													
	Total Yield		US#1 Yield		Over 12 oz.		8-12 oz.		4-8 OZ.		Under 4 oz.		Culls	
Control	28.52	C	22.92	C	0.88	C	6.20	B	15.84	AB	2.52	A	3.12	AB
Crystal Green 120 lbs./acre P	35.62	AB	29.02	ABC	2.44	BC	11.62	A	15.02	AB	3.00	A	3.62	AB
Crystal Green 180 lbs./acre P	32.76	BC	26.82	BC	6.14	A	9.72	AB	10.96	B	2.34	A	3.64	AB
Crystal Green 240 lbs./acre	39.64	A	31.78	AB	2.54	BC	11.70	A	17.56	A	2.46	A	5.38	A
MAP 120 lbs./acre P	32.70	BC	28.66	ABC	2.64	BC	10.58	A	15.42	AB	2.12	A	1.92	B
MAP 180 lbs./acre P	38.76	A	34.12	A	2.74	BC	10.94	A	20.42	A	2.42	A	2.22	B
MAP 240 lbs./acre P	36.86	AB	30.86	AB	4.38	AB	11.10	A	15.38	AB	2.62	A	3.36	AB

Yields for crystal green, 2012



Overview of potato psyllid research 2013

Erik R. Echegaray and Silvia I. Rondon
Oregon State University, Hermiston Agricultural Research and Extension Center, Irrigated Agricultural Entomology Program

- Potato psyllid monitoring in six commercial potato fields in Washington and Oregon and two experimental fields on station (HAREC). Adults are monitored by using five yellow sticky cards (ALphaScent®) per potato field. Sticky cards are placed at equal distance from each other along a transect from the center to the edge of the circle (figure 1). In addition, adults are collected by taking a 5-min DVAC (inverted leafblower)sample. Eggs and nymphs are monitored by collecting five leaves from around each sticky card and 10 leaves from around the circle border. Samples are collected in bags and then taken to the lab. Adults are sorted under the microscope, identified, counted and then placed into micro-tubes in order to test them for the pathogen *Candidatus* Liberibacter solanacearum via PCR analysis.
- After harvest, tubers are rated for Zebra Chip disease using the Texas ZC 0-3 rating scale.
- Two sentinel plots on station for early detection of the potato psyllid. No chemical applications against potato psyllid. Samples collected weekly.
- Pesticide efficacy trials are conducted under field and greenhouse conditions. Two types of trials: one-time application and season long application program. Efficacy is assessed by collecting leaves samples (10 per plot) and one DVAC sample every week. Pesticide applications start as soon as psyllids are detected.
- Psyllid overwintering study. The potato psyllid has been reported overwintering on a solanaceous weed, the bittersweet nightshade, *Solanum dulcamara*. Leaves and DVAC samples are collected every two weeks from *S. dulcamara* plants on seven different locations in the lower Columbia Basin, close to the border between Washington and Oregon. Adults have been collected throughout the winter 2012-2013 and are still collected from the selected sites.
- No Zebra Chip infected psyllids or plants have been detected in potato fields in Oregon and Washington up to date in 2013.

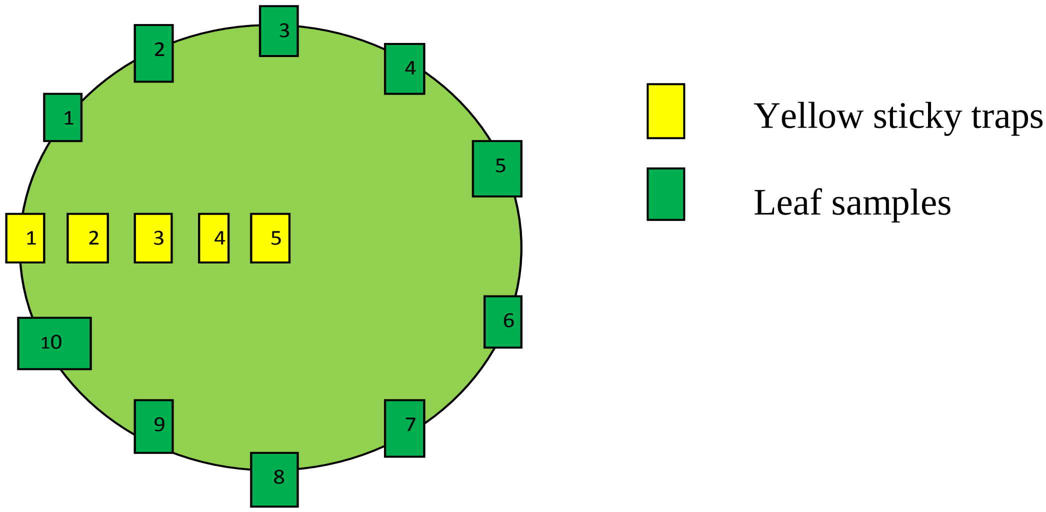


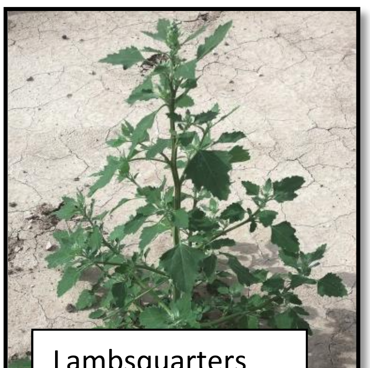
Figure 1. Sticky traps (yellow) and leaf samples (green) in the field.

Surveying Alternative Hosts of Potato Virus Y and its Aphid Vectors

Alexzandra F. Murphy and Silvia I. Rondon
Oregon State University, Hermiston Agricultural Research and Extension Center, Irrigated Agricultural Entomology Program

Aphid Tile Trap

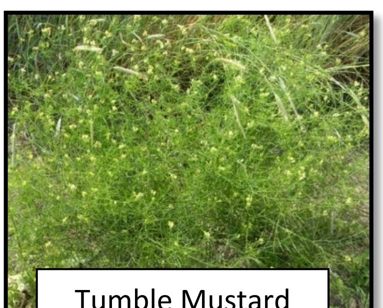
- Eight potato fields are being monitored for aphids using green tile traps
- Five wheat fields are also being sampled for aphids
- Survey includes approximately five sites for each weed in the Columbia Basin of Oregon and Washington
- Additional samples are being collected in the Klamath Basin
- All weed samples will be tested for PVY
- Weed species include:



Lambsquarters

Bittersweet Nightshade

Prickly Lettuce



Tumble Mustard

Redstem Filaree

Help us!!! Please contact us if you have any of these weeds that you would like sampled: 541-567-6337 ask for Alex Murphy.

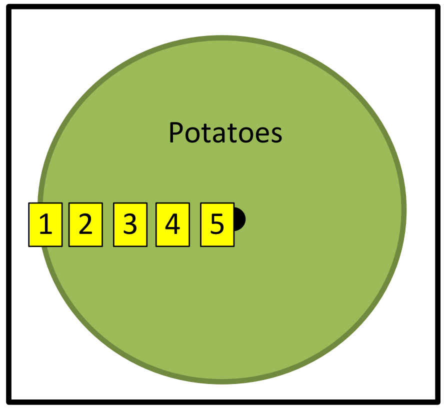
Monitoring Potato Psyllids in 2012

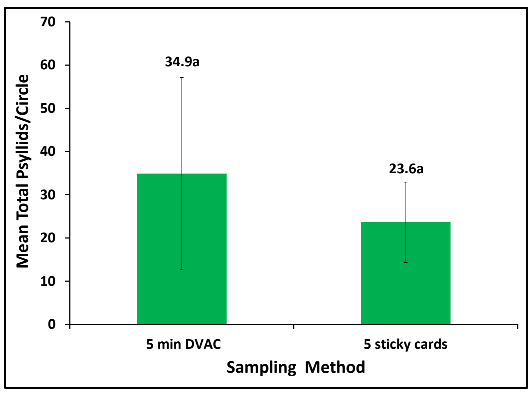
Alexzandra F. Murphy and Silvia I. Rondon

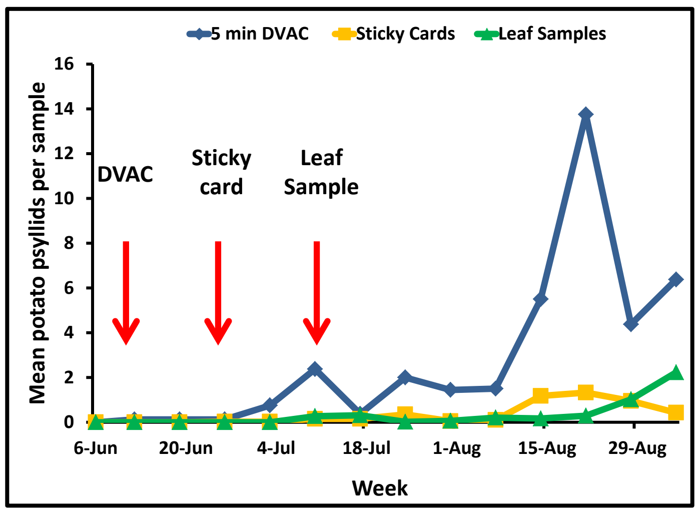
Oregon State University, Hermiston Agricultural Research and Extension Center, Irrigated Agricultural Entomology Program

2012 Commercial Monitoring

- Comparison of sampling tactics
- Assessment of the locality of a sticky card in the field.
- **Results:**
  1. **DVAC samples detected psyllids earlier than sticky cards**
  2. **Location of the sticky cards did not influence mean psyllid numbers**

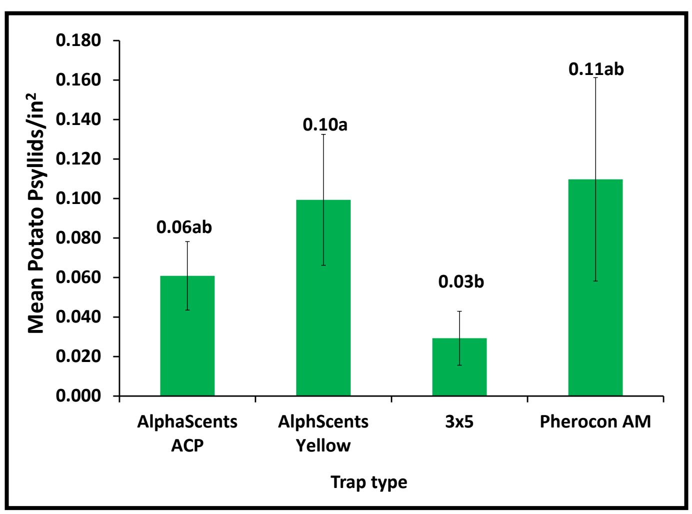






2012 Sticky Card Comparison

- Assessment of the efficacy of different sticky cards.
- Compared four cards: AlphaScents Yellow, AlphaScents ACP, Pherocon AM, and a 3X5 card.
- **Results:**
  1. **AlphaScents Yellow cards and Pherocon AM cards caught the most psyllids/square inch**



State-wide Potato Pest Monitoring in 2013

Alexzandra F. Murphy and Silvia I. Rondon

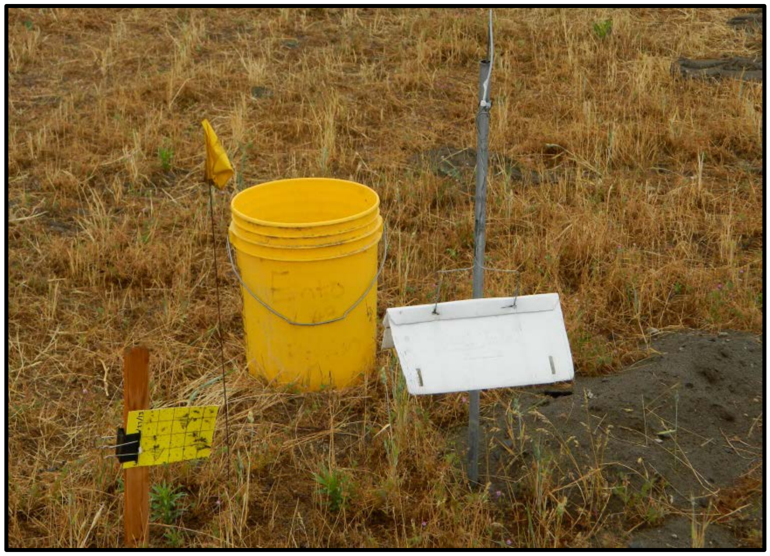
Oregon State University, Hermiston Agricultural Research and Extension Center, Irrigated Agricultural Entomology Program

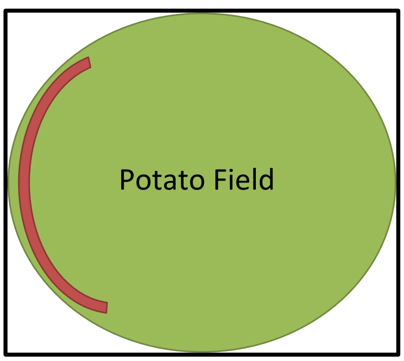
Monitoring the following:

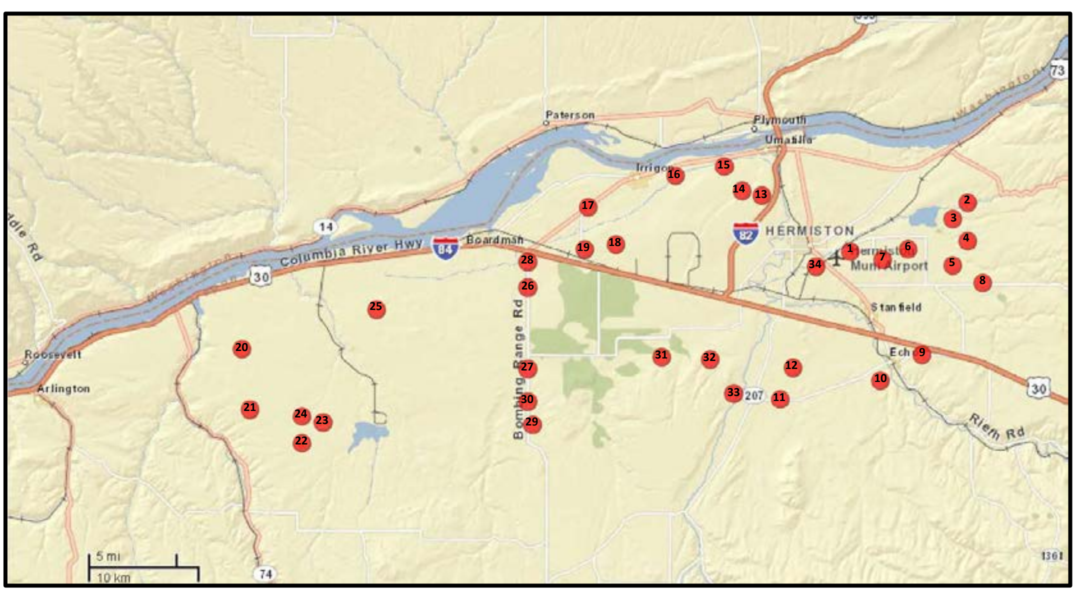
- Beet Leafhoppers
- Potato Tubermoth
- Potato Psyllids
- Aphids

Collaborators in:

- Washington
- Idaho
- Union/Baker Counties (OR)
- Klamath Basin (OR)





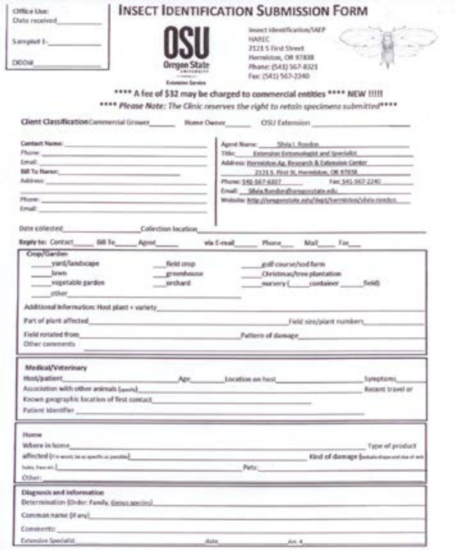


HAREC Insect ID Service

Who are we?

Silvia I. Rondon
Extension Entomologist
Carol Mills
Bio Science Research Worker

How we do it?



INSECT IDENTIFICATION SUBMISSION FORM

Office Use:
Date received______
Sampled I-______
DDOW______

OSU Oregon State University Extension Service

Insect Identification/IAEP
HAREC
2121 S First Street
Hermiston, OR 97838
Phone: (541) 567-8321
Fax: (541) 567-2240

**** A fee of $32 may be charged to commercial entities **** NEW !!!!!
**** *Please Note: The Clinic reserves the right to retain specimens submitted* ****

Client Classification Commercial Grower______ Home Owner______ OSU Extension ______

Contact Name: ______
Phone: ______
Email: ______
Bill To Name: ______
Address: ______
Phone: ______
Email: ______

Agent Name: Silvia I. Rondon
Title: Extension Entomologist and Specialist
Address: Hermiston Ag. Research & Extension Center
2121 S. First St, Hermiston, OR 97838
Phone: 541-567-6337 Fax: 541-567-2240
Email: Silvia.Rondon@oregonstate.edu
Website: http://oregonstate.edu/dept/hermiston/silvia-rondon

Date collected______ Collection location______
Reply to: Contact____ Bill To____ Agent____ via E-mail____ Phone___ Mail___ Fax___

Crop/Garden
____yard/landscape ___field crop ____golf course/sod farm
____lawn ___greenhouse ____Christmas/tree plantation
____vegetable garden ___orchard ____nursery (____container ____field)
____other______
Additional Information: Host plant + variety______
Part of plant affected______ Field size/plant numbers______
Field rotated from______ Pattern of damage______
Other comments ______

Medical/Veterinary
Host/patient______ Age______ Location on host______ Symptoms______
Association with other animals (specify)______ Recent travel or
Known geographic location of first contact______
Patient Identifier ______

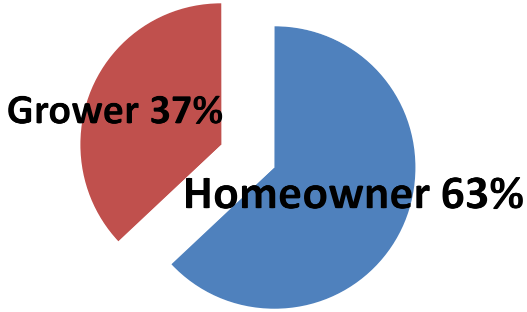
Home
Where in home______ Type of product
affected (if in wood, be as specific as possible)______ Kind of damage
______ Pets:______
Other:______

Diagnosis and Information
Determination (Order: Family, Genus species)______
Common name (if any)______
Comments: ______
Extension Specialist______ date______ Acc. #______

What do we do?

- Identify insect specimens
- Response to client requests
- Control recommendations
- Conduit to OSU Insect ID Clinic

Who uses the service?



How we can help?