

# Antigo Research Station Field Day, 2019

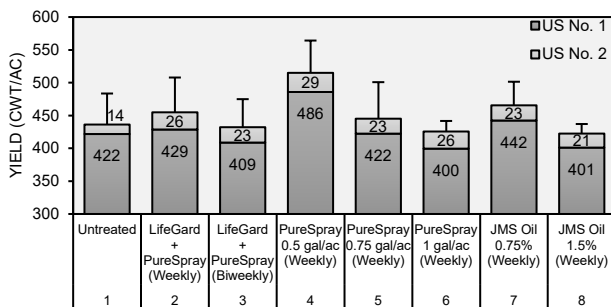
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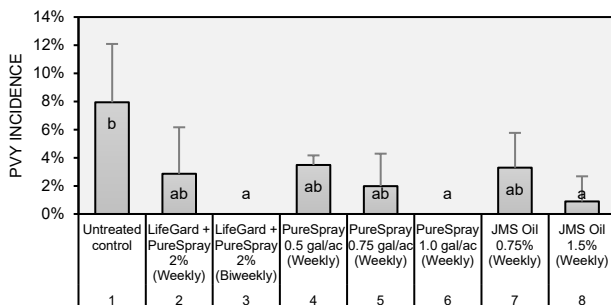
## Evaluation of LifeGard and PureSpray Green for foliar management of PVY in seed potato production (Hancock; results from 2018)

This experiment was conducted at the University of Wisconsin's Hancock Agricultural Research Station (HARS) on field K-9, located 1.1 miles west of Hancock, WI in 2018. Four replicates of 7 treatment plots and one untreated control plot were arranged in a randomized complete block design. Potato, *Solanum tuberosum* cv. 'Russet Burbank' were machine planted on May 7. Treatments include weekly or biweekly foliar application programs of LifeGard, PureSpray Green, and JMS Oil. Oil applications are known to cause yield drag in potato so yield comparisons relative to control plots will be relevant when evaluating treatment programs. A single 20 ft.-long row from the center of each plot was harvested on Sep 11 to determine yield and tuber quality. After harvest, a subsample of tubers were shipped to Oahu, Hawaii for a post-harvest evaluation. These tubers were planted as paired sets of rows and once they emerged and were approximately 14" in height, senior inspectors with the Wisconsin Seed Potato Certification Program visually inspected and evaluated the plants for symptoms of PVY infection. Yield and incidence results shown in the graphs below.

Total yield (A's and B's) by treatment



PVY incidence in grown-out seed



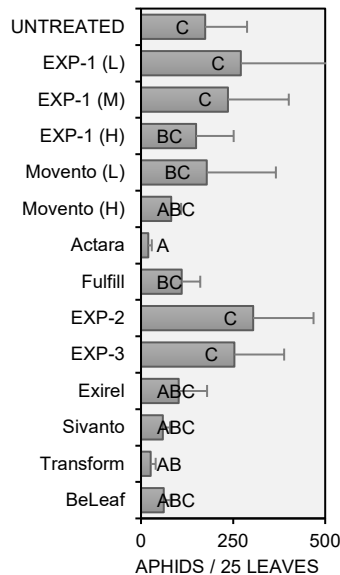
## Evaluation of foliar programs for the control of colonizing aphids in potato (Coloma, 2018)

Aphids feed on plant sap and excrete a sugary honeydew that attracts ants and creates the conditions for sooty mold. In addition to directly weakening the host plant, aphids are capable of vectoring several important viral plant diseases, including mosaic viruses and Potato Virus Y. Aphids that pose the most serious problem to Wisconsin vegetable production include the green peach and potato aphids. We conduct annual trials of novel experimental compounds and established commercial products for the control of aphid populations in potato production. This trial was located at Coloma Farms. Potato, *Solanum tuberosum* cv. 'Atlantic' was machine planted on April 25

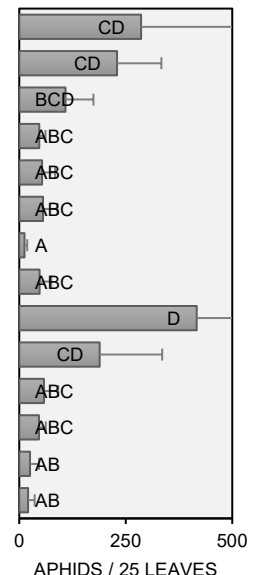
with a 1 ft. seed spacing and 3 ft. row spacing. In early August, a portion of this field was divided into four replicates of 13 total experimental treatment plots and one untreated control plot arranged in a randomized complete block design. The field received standard commercial fungicide and insecticide programs prior to plot initiation.

Trt	Product	Rate
1	Control	
2	EXP 1	Low
3	EXP 1	Med
4	EXP 1	High
5	Movento 240 SC	3.99 fl oz/a
6	Movento 240 SC	3.99 fl oz/a
7	Actara 25 WG	3 oz wt/a
8	Fulfill 50 SC	2.74 oz wt/a
9	EXP 2	Single
10	EXP 3	Single
11	Exirel 100 OD	20 fl oz/a
12	Sivanto 200 SL	10.5 fl oz/a
13	Transform 240 SC	1.5 fl oz/a
	FulFill 50 WG	2.8 oz wt/a
14	BeLeaf 50 SG	2.8 oz wt/a

Aug 10 (4 DAT)



Aug 13 (7 DAT)



## Pollinator protection guidelines for safe foliar insecticide appl.

As part of the US EPA's efforts to protect wild and managed pollinators from pesticide applications, a new 'Use Directions' section is now included on certain pesticide labels that is more precise in its directions for pesticide application. Older labels include specific limits such as "Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen."

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

See individual crops for specific pollinator protection application restrictions. If none exist under the specific crop, for foliar applications, follow these application directions for crops that are contracted to have pollinator services or for food/feed crops & commercially grown ornamentals that are attractive to pollinators.



#### FOR CROPS UNDER CONTRACTED POLLINATION SERVICES

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following condition has been met:

If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.



#### FOR FOOD/FEED CROPS AND COMMERCIAL GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS

Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55°F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apary registry program where beekeepers are notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

Growers should also refer to the USDA's publication "Attractiveness of Agricultural Crops to Pollinating Bees for the Collection of Nectar and/or Pollen" to know what kind of pollinators to look for when scouting their flowering crops to determine if any pollinators are present. Crops that are attractive (+) or very attractive (++) to pollinators are assumed to have pollinators present during flowering.

Crop	Taxa	Honeybee (Pollen)	Honeybee (Nectar)	Bumblebees	Solitary bees
alfalfa	<i>Medicago sativa</i>	+	++	+	++
bean	<i>Phaseolus</i> spp.	+	+	+	-
carrot	<i>Daucus carota</i>	+	+	+	+
corn	<i>Zea mays</i>	+	-	+	+
cranberry	<i>Vaccinium</i> spp.	+	+	++	++
onion	<i>Allium cepa</i>	+	+	-	+
peppermint	<i>Mentha</i> spp.	+	++	++	+
potato	<i>Solanum tuberosum</i>	-	-	+	+ <sup>1</sup>

<sup>1</sup>Andrena spp

## Full-season reduced-risk CPB control: Large plot demo (Hancock)

It is critically important to frequently rotate chemical insecticides used in the control of Colorado Potato Beetle, as this insect has the ability to rapidly develop resistance after repeated exposures to insecticides with common modes of action. This trial is a demonstration of several different insecticide rotations which will ensure season-long control of Colorado Potato Beetle while reducing the risk of resistance development. Potato cv. 'Russet Burbank' machine planted May 4, with at-plant insecticides administered at planting.

Trt	Target	Appl.	Date	Product	Form	Rate	Registrant	Active ingredient(s)	Group	Class
1	1st gen	Foliar	Jun 12	Blackhawk	36 WG	3.3 oz wt/a	Dow	Spinosad	5	Spinosyns
		Foliar	Jun 19	Blackhawk	36 WG	3 oz wt/a	Dow	Spinosad	5	Spinosyns
	2nd gen	Rescue	Jul 09	Brigade	2 EC	3 fl oz/a	FMC	Bifenthrin	3A	Pyrethroids
		Foliar	Jul 26	Besiege	1.25 SC	9 fl oz/a	Syngenta	Chlorantraniliprole Lambda-cyhalothrin	28 3	Diamides Pyrethroids
	Foliar	TBD	Besiege	1.25 SC	7 fl oz/a	Syngenta	Chlorantraniliprole Lambda-cyhalothrin	28 3	Diamides Pyrethroids	
2	1st gen	In-furrow	May 01	Cruiser	5 SC	0.6 fl oz/cwt	Syngenta	Thiamethoxam	4A	Neonicotinoids
		Foliar	Jun 12	Torac	1.29 EC	21 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides
	2nd gen	Foliar	Jul 26	Minecto Pro	1.37 SC	10 fl oz/a	Syngenta	Cyantraniliprole Abamectin	28 6	Diamides Avermectins
		Foliar	TBD	Minecto Pro	1.37 SC	8.5 fl oz/a	Syngenta	Cyantraniliprole Abamectin	28 6	Diamides Avermectins
3	1st gen	Foliar	Jun 12	Torac	1.29 EC	21 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides
		Foliar	Jun 19	Torac	1.29 EC	17 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides
	2nd gen	Rescue	Jul 17	Blackhawk	36 WG	3.3 oz wt/a	Dow	Spinosad	5	Spinosyns
		Foliar	Jul 26	Coragen	1.67 SC	7.5 fl oz/a	DuPont	Chlorantraniliprole	28	Diamides
		Foliar	TBD	Coragen	1.67 SC	5 fl oz/a	DuPont	Chlorantraniliprole	28	Diamides
4	1st gen	In-furrow	May 01	Cruiser	5 SC	0.6 fl oz/cwt	Syngenta	Thiamethoxam	4A	Neonicotinoids
		Foliar	Jun 12	Agri-Mek	0.7 SC	3.5 fl oz/a	Syngenta	Abamectin	6	Avermectins
	2nd gen	Foliar	Jul 26	Torac	1.29 EC	21 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides
Foliar		TBD	Torac	1.29 EC	17 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides	
5	1st gen	Foliar	Jun 12	Torac	1.29 EC	21 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides
		Foliar	Jun 19	Torac	1.29 EC	17 fl oz/a	Nichino	Tolfenpyrad	21A	METI insecticides
	2nd gen	Rescue	Jul 17	Blackhawk	36 WG	3.3 oz wt/a	Dow	Spinosad	5	Spinosyns
		Foliar	Jul 26	Actara	25 WDG	3 oz wt/a	Syngenta	Thiamethoxam	4A	Neonicotinoids
	Foliar	TBD	Actara	25 WDG	2.5 oz wt/a	Syngenta	Thiamethoxam	4A	Neonicotinoids	
6	1st gen	Foliar	Jun 12	Blackhawk	36 WG	3.3 oz wt/a	Dow	Spinosad	5	Spinosyns
		Foliar	Jun 19	Blackhawk	36 WG	3 oz wt/a	Dow	Spinosad	5	Spinosyns
		Rescue	Jul 09	Brigade	2 EC	3 fl oz/a	FMC	Bifenthrin	3A	Pyrethroids
	2nd gen	Foliar	Jul 26	Minecto Pro	1.37 SC	9 fl oz/a	Syngenta	Cyantraniliprole Abamectin	28 6	Diamides Avermectins
		Foliar	TBD	Minecto Pro	1.37 SC	7 fl oz/a	Syngenta	Cyantraniliprole Abamectin	28 6	Diamides Avermectins