

BIOLOGY AND MANAGEMENT OF THRIPS ON POTATOES

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Historically thrips were not thought of as a pest of potatoes. However, now there are thousands of acres of potatoes are treated in Washington each year. Between 10 and 25% of potato acres are treated depending on the year. The pest is most commonly a problem in longer season potatoes because the thrips have more time to build up to damaging levels. The actual damage or yield loss that occurs on a per acre basis is unknown. Thrips are only a pest in the Columbia Basin of Washington and Oregon.

The distribution of fields treated for thrips ranged from the southern Basin to north of Moses Lake. However, some areas of the state seem to perennially not have problems with thrips. The leading theory of why thrips have become a problem known as a pest in potatoes is due to a shift in insecticides used on potatoes. Formerly most potatoes in Washington were treated with carbamate (Temik, Furadan) and organophosphate (Monitor, dimethoate, Di-Syston, etc) insecticides. These products have efficacy against thrips. In the last ten years, product removals (e.g. Di-Syston), production use restrictions (e.g. Furadan) and new product introductions has significantly reduced the amount of these products used on potatoes. The widespread use of neonicotinoid insecticides, such as Admire, Platinum and Belay and highly selective insecticides such as Beleaf and Fulfill has allowed thrips populations to surge that formerly had been controlled by broad spectrum insecticides.

Due to its cryptic nature, lifecycle characteristics and recent appearance as a pest means that virtually no research has been conducted on this species. [The species is western flower thrips.] The publication “*Integrated Pest Management Guidelines for Insects and Mites in Idaho, Oregon and Washington Potatoes*” by Schreiber, Jensen, Pike, Alvarez and Rondon contains the official recommendations for management tactics for potato insects in Washington, Oregon and Idaho. There exist no control recommendations for thrips due to the lack of information on the pest. The one product that is commonly used for thrips control is Monitor has been removed from the market place in 2009/2010. There exists very little information on what products are effective against thrips now that Monitor is exiting the market place. Schreiber conducted a single successful efficacy trial in 2007. There are no nonchemical control methods recommended for use on potatoes.

Objectives: 1) Generate information on thrips biology
2) Collect data on efficacy of insecticides against thrips.

Efficacy of 15 Insecticidal Programs for Control of Thrips on Potatoes.

Trt No.	Treatment Name	12-Aug -1		16-Aug 3		20-Aug 7		27-Aug 14		3-Sep 21		10-Sep 28		10-Sep Cumulative over 28 days	
		1		2		3		4		5		6		7	
1	CHECK	1.3	a	3.5	a	7.3	a	7.0	a	7.3	a	2.8	ab	29.0	a
12	PROVADO	0.3	a	2.8	ab	4.3	b	4.5	bcd	5.0	bc	3.5	a	20.3	b
12	WARRIOR														
5	VYDATE	0.5	a	2.3	abc	3.3	bc	4.8	bc	6.0	ab	2.8	ab	19.5	b
6	WARRIOR	0.8	a	2.0	a-d	4.0	b	5.3	b	5.0	bc	2.5	ab	19.5	b
13	ASSAIL	0.0	a	2.3	abc	4.5	b	3.8	cd	3.8	cd	2.0	b	16.3	b
14	BELAY	1.0	a	1.8	bcd	3.0	bcd	3.5	d	4.8	bc	2.5	ab	16.5	b
8	MUSTANG MAX	1.0	a	2.0	a-d	1.8	cde	2.0	e	2.0	de	0.3	c	9.0	c
4	RADIANT	1.3	a	1.3	bcd	1.8	cde	2.3	e	2.0	de	0.3	c	8.8	c
2	LANNATE	2.0	a	1.0	cd	1.3	cde	1.5	ef	2.3	de	0.5	c	8.5	c
11	RADIANT	1.0	a	2.3	abc	1.3	cde	1.5	ef	2.0	de	0.5	c	8.5	c
11	LANNATE														
3	HERO	0.5	a	1.3	bcd	1.8	cde	2.0	e	1.8	ef	0.8	c	8.0	c
10	LANNATE	0.5	a	2.0	a-d	1.0	de	1.8	ef	2.0	de	0.3	c	7.5	c
10	MUSTANG MAX														
7	ABAMECTIN	0.0	a	0.5	d	1.5	cde	2.0	e	1.5	ef	0.0	c	5.5	cd
7	NIS														
9	ABAMECTIN	0.0	a	1.3	bcd	1.3	cde	1.5	ef	1.0	ef	0.3	c	5.3	cd
9	NIS														
9	RADIANT														
15	MONITOR	0.0	a	0.8	cd	0.8	e	0.8	f	0.0	f	0.3	c	2.5	d

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)