

# THE EFFECT OF ACTIGARD® 50WG FIELD SPRAYS FOR MANAGEMENT OF SPOTTED WILT IN TOBACCO

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## ABSTRACT:

The effect of Actigard 50WG field sprays was evaluated as a spotted wilt management tool from 2010 to 2013. Weekly Actigard treatments @ 0.5 oz./acre applied from transplant to layby (6-8 applications) reduced spotted wilt in tobacco grown from untreated seedlings in two of four years. This program did not reduce spotted wilt in tobacco grown from seedlings given a pre-transplant treatment of Actigard + Admire Pro in any year. A reduced number of weekly Actigard treatments based on triggering events (2-3 apps.) did not reduce spotted wilt in these trials.

## METHODS:

Trials consisted of 4-5 reps of plant house treated seedlings set in a randomized complete block. Each rep was two rows of untreated and two rows of Actigard + Admire pro treated seedlings X 120-130 plants. The four Actigard spray programs were overlaid in a latin square. Each spray trial rep was four rows (two rows of treated and two rows of untreated seedlings) X 30-34 plants. All Actigard 50WG field sprays were applied at 0.5 oz./acre. The four Actigard spray programs were: 1. Actigard applied each week from transplant to layby (6-8 apps.); 2. Actigard applied each week beginning at first symptom of spotted wilt (2-3 apps.); 3. Actigard applied each week beginning at 1300 base 51° F degree days from 01 November the proceeding year (2-3 apps.). This treatment was scheduled in anticipation of a major peak in thrips flight activity.; 4. Actigard not applied. Spotted wilt was evaluated visually on all test plants every 5 days until the first diseased plant was seen, then every 14 days (based on transplant date) until 12 weeks post transplant.

## RESULTS:

Seedlings treated with Actigard in the plant house grew off more slowly than untreated seedlings in all four trials (Figure 1.). This effect was no longer apparent by layby (Figure 2.). Weekly Actigard applications beginning at transplant reduced spotted wilt in tobacco grown from untreated seedlings in 2010 and 2013 but not in 2011 or 2012. This program did not reduce spotted wilt in tobacco grown from seedlings treated with Actigard + Admire Pro in any year. Neither of the triggered programs reduced spotted wilt in any trial. It is generally assumed Actigard treatments require 5-7 days to become fully effective. With this in mind, triggering Actigard treatment by these field events would generally mean the applications are too late for best effect. There was no visible effect of Actigard field treatments on plant color or growth in these trials (Figures 3,4). These results are in agreement with 48 farm trials conducted between 2001 and 2006.



FIGURE 1. Typical slow early growth associated with Actigard treatment (right) compared to untreated (left).



FIGURE 2. No lingering sign of Actigard seedling treatment at layby.



FIGURE 3. Plants not receiving weekly field applications of Actigard 50WG in 2013.



FIGURE 4. Plants received eight weekly field applications of Actigard 50WG beginning at week 0 i.e. transplant plus one day in 2013.

## ACTIGARD FIELD SPRAY RESULTS IN 2010

FIELD TRT.	BEGIN <sup>1</sup>	FINAL % TSWV		
		APPS. <sup>2</sup>	CK <sup>3</sup>	A+A <sup>4</sup>
CK <sup>5</sup>	-----	0	6.5	3.5
1300 <sup>0</sup> DAYS <sup>6</sup>	WK 3	2	6.4	1.2
1 <sup>ST</sup> TSWV <sup>7</sup>	WK 2	2	5.9	2.0
WEEKLY	WK 0 (TP)	6	3.1	0.8
LSD(0.05)	-----	---	2.0	ns

- Weeks from transplant (TP) until Actigard field sprays begin.
- Number of weekly Actigard applications at 0.5 oz./acre.
- Seedlings received no plant house treatment for spotted wilt.
- Seedling received Actigard 50WG @ 1.0 oz./100,000 seedlings + Admire Pro @ 0.9 oz./1,000 tray cells in the plant house.
- No Actigard in the field.
- Begin spray program at 1300 base 51°F degree days from previous 01Nov. to estimate time of a peak thrips flight.
- Begin spray program the week of first visual sign of spotted wilt in the test plot.

## ACTIGARD FIELD SPRAY RESULTS IN 2011

FIELD TRT.	BEGIN <sup>1</sup>	FINAL % TSWV		
		APPS. <sup>2</sup>	CK <sup>3</sup>	A+A <sup>4</sup>
CK <sup>5</sup>	-----	0	11.1	7.5
1300 <sup>0</sup> DAYS <sup>6</sup>	WK 3	2	7.1	5.8
1 <sup>ST</sup> TSWV <sup>7</sup>	WK 2	2	8.1	5.8
WEEKLY	WK 0 (TP)	6	11.6	7.1
LSD(0.05)	-----	---	ns	ns

- Weeks from transplant (TP) until Actigard field sprays begin.
- Number of weekly Actigard applications at 0.5 oz./acre.
- Seedlings received no plant house treatment for spotted wilt.
- Seedling received Actigard 50WG @ 1.0 oz./100,000 seedlings + Admire Pro @ 0.9 oz./1,000 tray cells in the plant house.
- No Actigard in the field.
- Begin spray program at 1300 base 51°F degree days from previous 01Nov. to estimate time of a peak thrips flight.
- Begin spray program the Week of first visual sign of spotted wilt in the test plot.

## ACTIGARD FIELD SPRAY RESULTS IN 2012

FIELD TRT.	BEGIN <sup>1</sup>	FINAL % TSWV		
		APPS. <sup>2</sup>	CK <sup>3</sup>	A+A <sup>4</sup>
CK <sup>5</sup>	-----	0	11.5	2.2
1700 <sup>0</sup> DAYS <sup>6</sup>	WK 2	2	11.8	2.4
1 <sup>ST</sup> TSWV <sup>7</sup>	WK 2	3	9.7	2.2
WEEKLY	WK 0 (TP)	6	8.1	1.6
LSD(0.05)	-----	---	ns	ns

- Weeks from transplant (TP) until Actigard field sprays begin.
- Number of weekly Actigard applications at 0.5 oz./acre.
- Seedlings received no plant house treatment for spotted wilt.
- Seedling received Actigard 50WG @ 1.0 oz./100,000 seedlings + Admire Pro @ 0.9 oz./1,000 tray cells in the plant house.
- No Actigard in the field.
- Begin spray program at 1700 base 51°F degree days from previous 01Nov. to estimate time of a peak thrips flight.
- Begin spray program the week of first visual sign of spotted wilt in the test plot (3 apps. to separate from treatment above).

## ACTIGARD FIELD SPRAY RESULTS IN 2013

FIELD TRT.	BEGIN <sup>1</sup>	FINAL % TSWV		
		APPS. <sup>2</sup>	CK <sup>3</sup>	A+A <sup>4</sup>
CK <sup>5</sup>	-----	0	7.1	4.0
1300 <sup>0</sup> DAYS <sup>6</sup>	WK 5	3	4.0	2.0
1 <sup>ST</sup> TSWV <sup>7</sup>	WK 3	3	5.4	2.7
WEEKLY	WK 0 (TP)	8	3.2	3.2
LSD(0.05)	-----	---	3.2	ns

- Weeks from transplant (TP) until Actigard field sprays begin.
- Number of Actigard applications at 0.5 oz./acre.
- Seedlings received no plant house treatment for spotted wilt.
- Seedlings received Actigard 50WG @ 1.0 oz./100,000 seedlings + Admire Pro @ 0.9 oz./1,000 tray cells in the plant house.
- No Actigard in the field.
- Begin spray program at 1300 base 51°F degree days from previous 01Nov. to estimate time of a peak thrips flight.
- Begin spray program the week of first visual sign of spotted wilt in the test plot.