EVALUATION OF LIFEGARD FOR TOMATO SPOTTED WILT MANAGEMENT IN GEORGIA'S TOBACCO PRODUCTION

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ABSTRACT:

Spotted wilt, caused by *Tomato Spotted Wilt Virus* has been the major cause of disease loss in Georgia tobacco for the past 30 years. Losses have been particularly high in and around Atkinson and Coffee Counties, in some cases exceeding 80 percent. There are only a few good options available and they do not always provide adequate control. Lifegard has been proposed as an alternative to Actigard 50WG as a management tool for spotted wilt in tobacco. Lifegard was tested in 2018. Lifegard is supposed to activate plant resistance to various pathogens including viruses without the often seen negative effects such as slow growth and leaf burning associated with applications of Actigard 50WG. In 2018 trials, a Lifegard + Admire Pro treatment applied in the greenhouse showed some promise for spotted wilt management. In 2019 the trials were repeated. The objective was to compare Lifegard + Admire Pro to Actigard + Admire Pro and Admire Pro alone for management of spotted wilt in flue-cured tobacco.

METHODS AND MATERIALS:

In 2019, field trials were conducted at five locations; four were on-farm trials in Atkinson and Coffee Counties, and one was at the Bowen Farm of the University of Georgia Tifton Campus

Treatments were the same for all five trials in 2019:

1. **Untreated check**
2. **Admire Pro @ 0.8 oz/1,000 tray cells**
3. **Lifegard @4.5 oz/100 gallons + Admire Pro as above**
4. **Actigard @ 1.0 oz/100,000 tray cells + Admire Pro as above**

COFFEE AND ATKINSON COUNTY TRIALS

- **The plants for the Coffee and Atkinson Counties trials were grown and treated in a commercial greenhouse in Coffee County.**
- **These plants received Lifegard and Actigard treatments as foliar sprays on April 3.**
- **The plants received Admire Pro treatments as a spray-on/rinse-off drench on April 8.**
- **The treated tobacco plants were transplanted April 10-18.**
- **Tobacco plots were a randomized complete block with three replications of 180-205 plants per replication.**

BOWEN FARM TRIAL

- **The plants for the Bowen Farm trial were grown and treated in a greenhouse on the University of Georgia Tifton campus.**
- **Lifegard or Actigard treatments were applied on March 22.**
- **The Admire Pro was applied on March 26.**
- **The plants were transplanted March 28.**
- **This plot was a randomized complete block with four replications of 78-83 plants per replication.**
- **Spotted wilt evaluations at all locations were made on every plant in each replication every two weeks beginning two weeks after transplanting and continuing until the twelfth week after transplanting.**

Figure 1. Early symptoms of tobacco plant infected with spotted wilt post transplant.

Figure 2. Spotted wilt symptoms on an older plant are usually most severe on one side.

RESULTS:

Table 1. 2019 Results of Lifegard Trials at Five Locations in Georgia

	Final % Spotted Wilt					
Treatment / Location	WM#1	JA#1	RS#1	MT#2	BF	Combined Data
Check	18.5	26.0	14.9	16.0	14.0	17.9
Admire Pro	19.1	21.5	11.1	11.3	7.9	14.2
Lifegard + Admire Pro	18.4	17.7	10.3	10.2	8.3	13.0
Actigard + Admire Pro	16.3	19.6	5.8	8.2	6.3	11.2
LSD (0.05)	*ns*	*7.2*	*6.7*	*5.5*	*3.4*	*2.3*

CONCLUSIONS:

- **Final plant stand ranged from 96.5-100% and was not affected by treatment.**
- **Chemical treatment did affect final spotted wilt incidence. At location WM#1 there was no effect of treatment. This is often seen from place to place in any given year. The sources of this variation have not been fully explained.**
- **When data from all locations was combined, all chemical treatments were better than the check. The Actigard + Admire Pro was better than Admire Pro alone. Lifegard + Admire Pro did not differ from either of the other two chemical treatments.**