

MANAGEMENT OF SPOTTED WILT VIRUS WITH IMIDACLOPRID IN LOWNDES COUNTY FROM 2012-2015



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ABSTRACT:

Tomato Spotted Wilt Virus (TSWV) is a major pathogen of tobacco plants that is spread by the feeding activity of thrips. There are various symptoms of this disease. Some of the more common symptoms seen are: necrotic banding along and around the main veins, young leaves turning yellow then reddish brown, distortion of buds, concentric ringspots on leaves that merge to form larger areas of dead tissue, and death to the entire plant after a couple of days. Since TSWV is vectored by thrips, it is important to control thrips populations among the tobacco plants. Imidacloprid (Admire Pro) seedling drenches have been found to be an effective way to control thrips populations. From 1998-2014, 180 research trials conducted in Georgia found the average reduction of spotted wilt was 32 percent. The purpose of this research is to confirm that Admire Pro is controlling the occurrence of spotted wilt throughout tobacco fields in Lowndes County. Over the past years test plots have been conducted on four different tobacco farm locations in Lowndes County for a total of 16 research trials. The results showed that 9 out of the 16 trails had control equal to or better than 32% control.

METHODS:

Test plots were transplanted on two different dates with two growers each year for four years. This resulted in 16 test locations (four per year). Each trial consisted of the entire contents of a tray of untreated seedlings (240-275 plants) planted at the beginning of four randomly selected rows. An adjacent row of imidacloprid treated seedling was used for comparison (Figure 1.) Spotted wilt was evaluated visually in the untreated and adjacent treated tobacco every two weeks beginning two weeks after transplanting and continuing to 12 weeks after transplanting.

RESULTS:

The results are shown in Table 1 and Table 2. Data from 171 trails conducted from 2000-2012 generated a mean value of 32 percent spotted wilt control with imidacloprid. These trials showed an expected farm to farm variation in percent control each year. There was also a year to year variation in percent control that remain unexplained. Our trials showed the same farm to farm (date to date) variation within any year. We also found some year to year variation with 2012 showing exceptional control and 2013 showing a low level of control. Control for 2014 was slightly greater than the 32 percent average and slightly below the 32 percent average in 2015.



Table 1: PERCENT CONTROL OF SPOTTED WILT WITH IMDACLOPRID AT WETHERINGTON FARMS (2012-2015)¹

	2012		2013		2014		2015	
TP Date ²	4/09	4/19	4/15	4/25	4/11	4/22	4/02	4/12
Percent Control ³	33	64	34	7	49	6	43	21

¹Seedlings produced in float bed, and tobacco grown by Herring Farms.

²Calendar day of April when transplanting was done.

³Percent of spotted wilt with imidacloprid. When value is < 20 percent the difference in spotted wilt between treated and untreated plants is not significant(p=.05)

Table 2: PERCENT CONTROL OF SPOTTED WILT WITH IMDACLOPRID AT HERRING FARMS (2012-2015)¹

	2012		2013		2014		2015	
TP Date ²	4/10	4/20	4/01	4/16	4/01	4/25	4/09	4/24
Percent Control ³	82	73	13	0	40	35	23	29

¹Seedlings produced in T-rail, and tobacco grown by Herring Farms.

²Calendar day of April when transplanting was done.

³Percent of spotted wilt with imidacloprid. When value is < 20 percent the difference in spotted wilt between treated and untreated plants is not significant(p=.05)