FIELD EFFICACY OF ACELEPRYN™, PROVAUNT™, AND TALSTAR™ AGAINST FIRST GENERATION ANNUAL BLUEGRASS WEEVIL ON A GOLF COURSE FAIRWAY

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Several insecticides and combinations were tested for field efficacy against ABW on golf course fairway turf in spring 2009. The products included Acelepryn™ (chlorantraniliprole), Provaunt™ (indoxacarb), and Talstar™ (bifenthrin). Plots were treated 17 Apr, 1 May, 18 May, or 26 May. Some treatment regimes involved tank mixes, while others involved single applications or serial applications. Acelepryn™ was applied at the traditional time for preventive applications (between *Forsythia* and dogwood full bloom), 17 April at this site, or on 1 May. Provaunt™ was applied on 1, 18, or 26 May with all applications targeting larvae after they had emerged from within plant stems. Talstar™ (bifenthrin) was included as an industry standard and was applied 17 April (traditional timing) or 1 May. All plots were sampled 9 June 2009 to determine the efficacy of the compounds against larvae of the first generation of annual bluegrass weevil (ABW).

The test was conducted at Tumble Brook Country Club, Bloomfield, CT. Treatment plots were 6 ft by 6 ft, replicated 4 times, and arranged in a CRB design. All applications were made with a watering can (2 qt water per plot), with half the material applied in one direction and the remainder applied in a perpendicular

direction. Plots were irrigated with 0.05 in about 1 hr after application. Product efficacy was evaluated on 9 Jun by removing ten 1.85-in diam cores from near the center of each plot, transporting the cores to our laboratory in Amherst, MA, and using a saline solution to extract all stages except eggs. Each core was recorded separately, and all counts were included in statistical analyses (Waller Duncan MRT, $F = 11.60$, $P<0.0001$). “Larvae” per core actually reflects counts of all larvae and pupae. Adults were not included in the analysis because of their mobility.

There were >175 larvae per sq. ft. in the untreated checks, well above the generally recognized spring threshold of 30 to 80 larvae per sq. ft. This site has a history of heavy reliance on pyrethroids over the past 10 years, and resistance of adults to pyrethroids has been documented. Only one of the Acelepryn™ treatments (applied 1 May) reduced populations significantly compared to the untreated check, but several of the treatments provided at least 70% control. A single application of Provaunt™ in late May reduced populations significantly. Based on other trials conducted in Spring 2009, it appears that Acelepryn™ applied just as small larvae are emerging from stems (early May) or Provaunt™ applied as larvae become more active (mid to late May) may have the potential to provide alternatives to manage ABW populations at sites with documented resistance to pyrethroids. But rate and timing of application of both Acelepryn™ and Provaunt™ appear to be critical to the success of these compounds.

For 2010, we recommend that Acelepryn™ be applied about a week after *Forsythia* half-green / half gold, to allow time for the material to be taken into the plant before third instars begin to chew their way out of the stem. It appears that Provaunt™ (and other larvicides, such as Dylox™ or Conserve™) should be applied when most of the larvae have emerged from the stem but have not reached full size. According to Dr. Rich Cowles (Connecticut Agricultural Experiment Station, Windsor Locks), full bloom of *Rhododendron catawbiense* is a good phonological indicator for application of insecticides targeting annual bluegrass weevil larvae.

Treatment	lbAI/A	Date	Mean larvae per plug	s.e.	Mean larvae per sq. ft.	PERCENT CONTROL
Check	---	---	3.45 a	2.716	175.5	---
Acelepryn 1.67SC	0.157	17 Apr	3.25 ab	3.208	165.4	6
Acelepryn 1.67SC	0.209	17 Apr	1.02 abc	1.761	51.9	70
Acelepryn 1.67SC	0.313	17 Apr	1.88 abc	2.936	95.6	46
Talstar 1.67SC	0.1	17 Apr	0.70 abc	1.136	35.6	80
Acelepryn 1.67SC	0.157	1 May	2.60 abc	2.169	132.3	25
Acelepryn 1.67SC	0.209	1 May	0.60 bc	0.777	30.5	83
Acelepryn 1.67SC	0. 313	1 May	1.42 abc	2.217	72.2	59
Talstar 1.67SC	0.1	1 May	2.15 abc	2.732	109.4	38
Acelepryn 1.67SC	0.157	1 May	0.72 abc	1.176	36.6	79
+ Talstar 1.67SC	0.1		1 May			
Acelepryn 1.67SC	0.209	1 May	2.10 abc	4.186	106.8	39
+ Talstar 1.67SC	0.1		1 May			
Acelepryn 1.67SC	0.313	1 May	2.22 abc	4.041	112.9	36
+ Talstar 1.67SC	0.1	1 May				
Acelepryn 1.67SC	0.157	1 May	0.88 abc	1.620	44.8	75

+ Provaunt 30WG	0.225	18 May				
Acelepryn 1.67SC	0.209	1 May	1.68 abc	2.421	85.5	51
+ Provaunt 30WG	0.225	18 May				
Acelepryn 1.67SC	0.313	1 May	1.48 abc	2.707	75.3	57
+ Provaunt 30WG	0.225	18 May				
Provaunt 30WG	0.225	1 May	1.95 abc	2.763	99.2	44
Provaunt 30WG	0.225	18 May	0.85 abc	1.459	43.2	75
Provaunt 30WG	0.225	26 May	0.25 c	0.493	12.7	93
Provaunt 30WG	0.225	1 May	2.28 abc	3.727	116.0	34
+ Provaunt 30WG	0.225	18 May				

Numbers followed by the same letter are not significantly different, Fisher's Protected LSD, $P < 0.0001$; $F = 11.60$ (significance level = 0.05).