CIVITAS TURF DEFENSE
Delivers Annual Bluegrass Weevil Suppression

Applications

- Apply CIVITAS TURF DEFENSE Pre-M1xed at 8.5-17 oz/1000 sq ft or CIVITAS TURF DEFENSE Ready-2-Mix + CIVITAS HARMONIZER at 8-16 oz + 0.5-1 oz/1000 sq ft at 7-21 day intervals.
- CIVITAS TURF DEFENSE acts as a contact insecticide. Make applications when ABW adults are most active on top of the turf canopy.
- There are no known cases of ABW resistance to the active ingredient in CIVITAS TURF DEFENSE; therefore, CIVITAS TURF DEFENSE can be an effective tool for managing pyrethroid resistant populations of ABW.

Study Conducted and Images Provided by
Dr. Ben McGraw at Pennsylvania State University

Water applied directly to ABW adults in laboratory assay. Note extensive feeding and frass indicating active ABW.
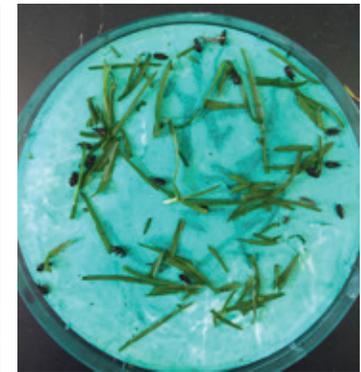
CIVITAS TURF DEFENSE Pre-M1xed applied directly to ABW adults in laboratory assay. Note lack of feeding and frass indicating mortality of ABW.

2015 Penn State University laboratory study assessing the effect of direct sprays of CIVITAS TURF DEFENSE Pre-M1xed, bifenthrin or water on mortality of non-resistant annual bluegrass weevils.

Treatment	Rate (per 1000 sq ft)	Assessment 72 Hours Post Treatment	
		# ABW Alive	% Mortality
CIVITAS Pre-M1xed	8.5 oz	0	100%
bifenthrin	0.5 oz[a]	0	100%
Water (control)	-	20	0%

[a]Rate equivalent to 0.113 lb of a.i./acre.

2016 Rutgers University field study assessing the effect of CIVITAS TURF DEFENSE Pre-M1xed, bifenthrin or CIVITAS Pre-M1xed + bifenthrin against an annual bluegrass weevil population resistant to bifenthrin (70x).

Treatment	Rate (per 1000 sq ft)	Application dates	No. of stages per ft^2 ± SE (% control) 8 June, 2016[b]
Non-treated	---	---	45.0 ± 4.9 a
CIVITAS Pre-M1xed	17 oz	20 April	20.3 ± 6.0 bc (55)
Bifenthrin (granular)	1.15 lbs[a]	20 April	25.9 ± 6.5 bc (43)
CIVITAS Pre-M1xed + bifen-thrin	17 oz 1.15 lbs[a]	20 April	11.3 ± 6.0 c (75)

[a] Rate equivalent to 0.100 lb of a.i./acre.
[b] Means within column followed by a letter in common are not significantly different.

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