

Chemical Control/New Products

Control of Leafrollers Using Spinosad

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Spinosad treatments controlled OBLR larvae at least as well as the industry standard, Lorsban 4E, in spring trials. Control was equal, applied as either dilute or concentrate (4x) sprays, and petal fall treatments provided better control than pink (Table 1). In summer trials, Spinosad did not provide the level of control expected. There was again no difference between dilute or concentrate applications; however, two applications provided better control than one.

**Table 1.** Spring control of OBLR larvae.

Treatment	Rate/100	Concentration	Timing	Live OBLR larvae per		
				10 buds	60s	
				26 Mar	6 May	20 May
Spinosad 4 SC	78.8 ml	Conc. (4X)	Pink	1.0a	2.0a	4.7abc
Spinosad 4 SC	78.8 ml	Conc. (4X)	Petal Fall	2.7a	11.7b	1.7ab
Spinosad 4 SC	157.2 ml	Conc. (4X)	Pink	3.0a	2.3a	5.5bc
Spinosad 4 SC	157.2 ml	Conc. (4X)	Petal Fall	3.3a	14.8b	0.7a
Lorsban 4E	16 fl oz	Dilute (1X)	HIG	3.7a	8.7ab	7.3c
Untreated	--	None	None	2.0a	13.7b	11.8d

Means in the same column followed by the same letter not significantly different ( $P=0.05$ , Fisher's Protected LSD).

Spinosad has a high level of activity against PLR and OBLR larvae. A dose-mortality study provided  $LC_{50}$  estimates of 0.1 ppm for both leafroller species and an  $LC_{90}$  of about 0.4 to 0.5 ppm (Table 2). Tests to examine the field-aged residue life of Spinosad showed that the product was active against neonate OBLR larvae for up to 28 days and that more highly concentrated spray applications had a longer residual activity.

**Table 2.** Dose-mortality results for Spinosad against leafroller larvae.

Treatment	Concentration (ppm)		Slope
	$LC_{50}$ (limits)	$LC_{90}$ (limits)	
PLR 7 DAT	0.11a (0.02-0.22)	0.52a (0.27-1.43)	1.93a
OBLR 7 DAT	0.13a (0.08-0.19)	0.45a (0.32-.72)	2.43a

Means in the same column followed by the same letter not significantly different; for  $LC_{50}$  and  $LC_{90}$   $P=0.05$ . Lethal Ratio Significance Test, Robertson and Priesler, 1991; for 'slope,'  $P=0.05$ , Probit analysis by POLO-PC. Significance index (g): PLR—0.35, OBLR—0.11; Confidence interval (CI): PLR=0.90, OBLR=0.95. CI limits not shown if 'g' index exceeded 0.50.