

Pome Fruits—Chemical Control

Control of Codling Moth with Horticultural Spray Oils

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Three different horticultural spray oils were compared with Guthion to determine their efficacy in a low-impact spray program to control codling moth in apple. The trial was conducted in a 25 year old Newtown Pippin block. The trial was a randomized complete block design with four blocks. Spray application were made to each of four single tree replicates per block. Trees were sprayed to runoff with a hydraulic handgun operating at 200 psi at a rate of 400 gal/acre. Three timings for spray were used: 1) Standard, 250 degree-days (°D) following biofix for each generation and three weeks later; 2) Early, 175°D following biofix for each generation and three weeks later; 3) Early, two-week, 175°D following biofix for each generation and two and four weeks later. Apples were inspected following each CM generation and at harvest. Fifty fruit per tree were inspected for damage from CM, leafrollers (LR), San Jose Scale (SJS) and observed for increases in russet.

All horticultural spray oils gave better control of CM than the untreated control. However, the amount of damage and increase in fruit russet was much greater than that of the Guthion check. Volck Supreme appeared to have given the best control of the oils with Sun Spray the least. Different spray timings of Orchex 796 made little difference in control of CM. All oils gave good control of SJS compared with the standard check or untreated control. No significance was noted for control of LR.

Table 1.

Treatment	Rate form/ 100 gal	Percent damaged fruit									
		6 Jul 1 st gen CM	28 Aug 2 nd gen CM	28 September					San Jose scale	Leafroller	
				Codling moth			Early	Late			
Sting	Entry	Total	Sting	Entry	Total						
Orchex 796 ¹	1 gal	2.5bc	13.0b	4.5	16.5	21.0bc	1.0ab	0.0NS	1.0NS		
Orchex 796 ²	1 gal	3.0bc	14.5b	4.0	18.5	22.5bc	0.5ab	0.5	0.5		
Orchex 796 ³	1 gal	2.0b	10.0b	5.5	11.5	17.0bc	1.5ab	1.0	0.0		
Volck Supreme ¹	1 gal	1.5b	12.5b	1.0	15.0	16.0ab	1.5ab	0.5	0.5		
Sun Spray ¹	1 gal	2.5bc	14.5b	5.5	21.5	27.0cd	0.0ab	0.5	0.5		
Guthion 35WP ¹	7.0 oz	0.0ab	0.0a	0.5	4.0	4.5a	6.0bc	0.5	0.0		
Control	--	10.5cd	35.5c	2.5	40.5	42.5d	21.0cd	3.0	2.0		

Data transformed to log (x+1) for analysis; untransformed means in each column followed by the same letter are not significantly different (P=0.05, Fisher's LSD); NS, not significant.

¹Standard timing: 13 May (246°D); 3 June; 15 July (1257°D); 6 August; 31 August (2150°D); 21 September.

²Early timing: 8 May (175°D); 29 May; 12 July (1175°D); 2 August; 27 August (2075°D); 17 September.

³Early, two-week timing: 8 May; 22 May; 10 June; 12 July; 25 July; 10 August; 27 August; 10 September.