

Mating Disruption/SIR

Disrupt® CM Codling Moth Mating Disruptant Results of Field Aging Studies, 1996, in Washington, Oregon and California

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Field-aging studies for Hercon Disrupt® CM were conducted in several areas of Washington, Oregon, California, South Africa and Argentina during the 1995-1996 growing season to determine the rate of emission of the dispensers under a variety of conditions. Dispensers using the Hercon controlled release technology were hung in the field under conditions similar to a pheromone application. The exposed dispensers were then sent to Hercon on a weekly schedule for residual analysis by gas chromatography (GC). The results from these analyses provided release rate information on the dispensers under different climatic conditions. In general, Disrupt® CM dispensers provided an average release (mg/day/dispenser) profile ranging from 0.85 to 0.90 over the first application period in Washington, 1.1 to 1.7 over both the first and second applications in Medford, OR, and 0.85 to 1.24 for both applications in Walnut Grove, CA. The second application in Washington showed an unexpected flat release in one or two of the study plots. Even though temperatures were warmer in the second application than in the first, the emission rate of some dispensers was unexpectedly slower. The reason for this result is being investigated. The results from the 1995-96 field-aging studies conducted in locations both in the US and overseas (Table 1) indicate Disrupt® CM dispenser emits a daily average ranging between 0.85 to 1.25 mg AI/day/dispenser over time periods from 84 days to 126 days for first applications and 0.5 to 1.24 mg AI/day/dispenser over 62 to 117 days for second applications.

The results indicate the Hercon Disrupt® CM dispenser has sufficient pheromone release for effective codling moth mating disruption for 90 days in most conditions. While efficacy of the Hercon Disrupt® CM was not evaluated in this test, nearby orchards were treated with this product and found to have little or no codling moth damage despite reports of low to moderate populations in the area.

Table 1. Field-aging results on Hercon Disrupt® CM for several locations in 1995-96 growing season. Numbers in parentheses are second application period values.

Location	Average release (mg/day/dispenser)	Range of release (mg/day/dispenser)	AI remaining in dispenser	No. days exposed
Finley, WA	0.9 (1.2)	0.2-1.9 (0.6-2.1)	31 (83)	134 (64)
Toppenish, WA	0.93 (0.6)	0.2-1.8 (0.2-2)	36 (115)	126 (78)
Chelan, WA	0.9 (0.7)	0.2-1.25 (0.4-1.25)	80 (67)	84 (117)
Brewster, WA	0.92 (0.5)	0.3-1.28 (0.2-1.7)	76 (132)	84 (62)
Leavenworth, WA	0.85 (N/A)	0.2-2.75	59	111
Walnut Grove, CA	0.86 (1.24)	0.3-2.2 (0.5-2.7)	80 (49)	85 (85)
Medford, OR	1.1 (1.7)	0.5-2.16 (0.1-5.7)	60 (34)	88 (76)
South Africa	0.89	0.3-3.4	36	147
Argentina	1.25	0.5-2.4	71	84