

STOP 7: SPRING 2000 EVALUATION OF EUROPEAN CRANE FLY CONTROL MEASURES

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This European Crane Fly experiment was set up in the rough at Glendale Golf & C.C., Bellevue, WA, on March 3, 2000. The study area had a mixture of bentgrass, annual bluegrass, and perennial ryegrass which remains wet during much of the year. The soil type was a silt loam. This area of the rough had moderate bird feeding activity and damage from the feeding was apparent before any treatments were applied.

The experiment was set up as a randomized complete block design (RCBD) with 5 replications. Plots were 7 ft. by 10 ft., and there were a total of 10 treatments. Six 4-inch diameter cores were pulled from each plot prior to treatment on March 3rd. Crane fly larval numbers were counted by tearing apart each individual core. The number per core was then multiplied by 11.5 to arrive at the number of larvae per square foot. Treatments were applied in early afternoon and a gentle rain began immediately following the application. This was ideal, as the 1/8 inch rainfall moved the treatments off of the surface and into the thatch and soil surface where the crane fly larvae usually reside during the day.

One month later, April 3, 2000, six more 4-inch cores were pulled from the center of each treatment area. Crane fly larval numbers were counted from each of these cores in the same manner as pretreatment. A comparison was made between the pre and post treatment larval numbers. The results are seen in Table 1. The fifth replication at the south end of the study had far fewer crane fly larvae, which increased the variability of the experiment and made it necessary to drop the 5th replication from the study to analyze the results.

There was a difference in larval numbers before treatment across the replications, but with studies this large, that is to be expected. The post treatment larval numbers and percent larval reduction, showed only the 2 formulations (granular and EC) of Dursban and Scimitar 10 WP, had significantly lower larval numbers and percent reduction than the untreated plots. From this year's results, Scimitar 10 WP would be the most effective alternative product for crane fly control when Dursban is ultimately lost for homeowner use.

Chlorpyrifos, Dursban, has been the most effective product for control of crane fly larvae and has been used as the standard for control in experiments conducted over the past 7 years because of its high efficacy. Now, with Dursban being removed from the public use arena, we are continuing to search for products that can effectively reduce population levels low enough to minimize damage. Untreated plots generally show a larval population reduction of 20-30% without any application. This reduction is probably due to the feeding of birds and other natural causes. Many of the products investigated for their efficacy in previous

studies, have shown about 50% control, which is only 30% greater than applying nothing at all. With 50% of the population remaining, the feeding of the birds on the remaining larvae still causes more damage. This will be far more evident on unthrifty lawns. The homeowner will still be able to use Dursban for home use until December of 2001. We are currently reevaluating previous treatments and other control measures for limiting crane fly larvae this fall and in spring of 2001.

Table 1. Crane fly mean larval number comparisons for spring 2000 at Glendale Golf and Country Club
March 3, 2000 through April 3, 2000.

Treatments	Pretreatment Avg. larvae/ft ²	Post treatment Avg. larvae/ft ²	Avg. Percent larval reduction
1. Untreated	55.1 abc*	38.8 abc [†]	26.9 cd [†]
2. Tempo (32 oz/M)	59.0 abc	26.4 bc	54.1 bc
3. Tempo (48 oz/M)	44.6 c	24.0 c	47.0 bc
4. Dylox 6.2 GR (32 oz/M)	65.2 a	33.6 bc	50.0 bc
5. Dylox 6.2 GR (48 oz/M)	60.9 ab	44.1 ab	26.9 cd
6. Merit 0.2 GR (45.9 oz/M)	52.7 abc	26.4 bc	54.5 bc
7. Merit 0.2 GR (60.8 oz/M)	53.2 abc	52.3 a	13.0 d
8. Dursban 1.0 GR (5 lb/M)	48.4 abc	0.0 d	100.0 a
9. Scimitar 10 WP (.12 lb ai/A)	64.2 a	21.1 c	65.4 b
10. Dursban DTI (1 lb ai/A)	47.0 bc	0.0 d	100.0 a
11. Distance 0.86 EC (12.14 fl oz/A)	28.8 d	31.2 bc	2.4 d
	LSD = 15.4	LSD = 18.5	LSD = 29.6

* Numbers followed by the same letter are not significantly different according to LSD, P > .002.

[†] Numbers followed by the same letter are not significantly different according to LSD, P > .0001.