

Turfgrass: Poa pratensis L.  
Festuca rubra L.

Hairy chinch bug: Blissus leucopterus hirtus

**Chinch bug control, 1989:** A grid of 4' x 4' plots separated by 1' wide buffer strips was established in a home lawn with a heavy infestation of chinch bugs in Okemos, Michigan. Following precounts, six replications of 3 insecticide treatments were applied on July 31, 1989 between 2:00 and 4:00 PM. Temperature at application was 82°F and conditions were partly sunny with 0-5 mph winds. The yard was not irrigated and no precipitation occurred until the fourth day postspray when 2.37 inches of rain fell. All products were applied with a single nozzle hand-held CO<sub>2</sub> sprayer from R&D Sprayers. The application was made at 50 psi through an 80°LF3 nozzle. Insecticides were mixed with water and applied at a rate of 240 ml/16 ft<sup>2</sup> (175 gal/A). Postcounts were made 7 days later on August 7, 1989. Precounts consisted of three minute counts in each replication. For the postcounts, each plot was divided in two and each half was counted for three minutes. The two counts from each replication were then averaged. This test was on Kentucky bluegrass-fine fescue with a 0-1/8" thatch layer and sandy soil.

Dursban 4E and Triumph 4EC reduced chinch bug populations by 84 and 80%, respectively. Tempo 2C was not effective in this test. These results differ from those obtained in previous years. In 1988, Tempo 2C caused the greatest reduction in chinch bugs, of any treatment. However, this year we had the best differences between treatments and control in five years of testing.

### Chinch Bug Control

1. Dursban and Triumph were highly effective.
2. Tempo 2C was not effective in this test.

However, Tempo has been effective in tests in previous years.

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\* Apply Dursban, Triumph, Turcam, or Diazinon to infested lawns in July.

Treatment	Rate (lbs ai/A)	Mean initial population/plot	Mean post treatment population/plot	Mean percent reduction
Dursban 4E	1.01	28.2	4.6 a	84
Triumph 4EC	1.11	25.2	4.9 a	80
Tempo 2C	0.144	25.7	18.8 ab	27
Control		28.8	53.8 b	0

Turfgrass: Poa pratensis L.

European chafer larvae: Rhizotrogus majalis

**European chafer larvae control, 1989:** A grid of 3' x 3' plots separated by 3' wide buffer strips was established in irrigated rough at Blythefield Country Club in Belmont, Michigan. Six replications of 7 insecticide treatments were applied on August 28, 1989 between 10:00 and 12:00 AM. Temperature at application was 67°F and the weather conditions were sunny with 0-5 mph winds. A trace of rain fell in the late afternoon and the site was irrigated early the next morning. Liquid products were applied with a single nozzle hand-held wand CO<sub>2</sub> sprayer from R&D Sprayers. The application was made at 50 psi through an 80° LF3 nozzle. Insecticides were mixed with water and applied at a rate of 137 ml/9 ft<sup>2</sup> (175 gal/A). Granular insecticides were applied with a salt shaker. Evaluations were made 21 days later on September 18, 1989 by removing 1 ft<sup>2</sup> of turf and soil per plot and counting larvae. This test was on Kentucky bluegrass with a 3/8" thatch layer and sandy loam soil.

Only Oftanol 5G and Triumph 1EC adequately controlled grubs in this test (50% reduction). As in previous tests with European chafer at this golf course, none of the products tested reduced grub populations by more than 70%.

### European Chafer

1. Only Oftanol 5G and Triumph 1 EC adequately controlled grubs in this test.
2. As in previous European chafer tests at Blythefield, none of the insecticide treatments reduced the grub population by more than 70%.

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\* European chafer is more difficult to control than Japanese beetle. Oftanol, Triumph, Diazinon and Mocap applied in late August have consistently reduced populations by 50%. Diazinon and Triumph for use on home lawns.

Treatment	Rate (lbs ai/A)	Mean number of grubs/sq. ft.
Oftanol 5G	8	4.2 a
Triumph 1EC	2.22	4.7 a
Mocap 5G	5	5.8 ab
Sevimol 4L	8	6.5 ab
Dylox 80 SP	7.84	7.2 ab
Control	---	9.8 ab
Sevin 4L	8	10.8 ab
Sevimol 4L	6	12.3 b



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**Turfgrass:** Poa pratensis L.

**Ant:** Prenolepis imparis

**Ant control in turfgrass, 1989:** Five replications of each treatment were established as plots in the fairway of hole #9 at the Ionia Country Club in Ionia, Michigan on 8/21/89. Each plot was 12' x 12' with a 3' buffer row between. Plots were sprayed with an R&D hand-held 4-nozzle CO<sub>2</sub> backpack sprayer at 50 psi through #3 80° nozzles. Granular products were applied with custom-made hand shakers designed to require three or four trips over the entire plot area to apply the amount of pre-weighed product. Counts were made on a weekly basis for all visible, active ant mounds that could be seen while standing upright.

Cool weather conditions in September slowed ant activity in all plots by Week 3 of the test. Triumph 4E, Dursban ME, and Dursban 4E provided the best control of ants in this test, suppressing the number of mounds per plot effectively for five weeks. Four weeks after treatment, Amdro leafcutter ant bait, Mocap 5G (3/4 rate), and Sevinol also had significantly less ant mounds than control plots. Five weeks after treatment, only Triumph 4E and Dursban ME 20 were significantly different (at  $p = .05$ ) from the control treatment. However, the Amdro leafcutter ant bait was the next best treatment and was significantly different at  $p = 0.1$ . The leafcutter ant bait was significantly better than the fire ant bait at 1, 2, 3 and 4 weeks after treatment.

### Ant Control

1. Triumph 4E, Dursban ME and Dursban 4E provided good control for 5 weeks.
2. Amdro leaf cutter ant bait was the next best treatment, more effective than the fire ant bait.
3. Additional work is needed to improve ant baits by making granules more attractive to the major pest species.

Treatment	Rate (lb ai/acre)	Precount	Week 1	Week 2	Week 3	Week 4	Week 5
Triumph 4E	2.2	58.4 ab	1.0 a	1.6 a	1.0 a	1.6 a	1.2 a
Durshan ME20	2.0	62.4 ab	2.2 a	5.2 a	6.2 ab	5.8 ab	1.8 a
Amdro .88% leaf cutter ant bait	1.0	54.4 b	14.0 a	12.2 ab	14.6 abc	7.8 ab	4.8 ab
Durshan 4E	2.0	81.4 b	6.2 a	7.6 ab	8.8 ab	6.8 ab	6.8 ab
Sevimol 4E	8.0	54.4 ab	17.4 a	19.2 b	20.8 bcd	15.8 bc	7.8 ab
Mocap 3/4 rate	4.0	45.4 a	11.2 a	12.6 ab	19.2 bcd	11.4 ab	8.8 ab
Neoplectana nematodes	1 x 10 <sup>9</sup> /Acre	66.8 ab	54.4 b	34.4 cd	29.4 cd	23.0 cd	12.6 ab
Control		78.4 ab	51.0 b	46.0 d	44.8 e	28.2 d	14.2 b
Amdro .88% fire ant bait	1.0	76.8 b	37.0 b	31.8 c	32.0 de	23.0 cd	15.8 b

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**Turfgrass:** Poa pratensis L.

**Bluegrass billbug:** Sphenophorus parvulus

**Ants:** Mixed species

**Billbug adult control, 1989:** Treatments were applied on May 23 for adult billbug control at Oakland Hills Country Club - South (Birmingham, MI) on irrigated bluegrass rough. A CO<sub>2</sub> sprayer with four 80° nozzles was calibrated to apply 170 gal H<sub>2</sub>O/acre at 50 PSI. Treatment plots were 6' x 12' with 4' borders between plots. Each treatment was replicated six times. On July 17 and 24, six 0.25 ft<sup>2</sup> samples were dug from each plot to assess billbug larvae and damage. The number of live larvae and damaged crowns with frass were added together for an index of billbug activity. The number of ant colonies found was recorded for replications 2-6.

Dursban DF at 1 and 2 lb ai/A was more effective than Dursban ME20 for adult billbug control. All Dursban treatments had less billbug activity than the control. However, the 0.5 lb ai per acre rates did not provide adequate control.

### Billbug Control

1. Dursban DF more effective than Dursban ME.
  2. Rates of 1.0 or 2.0 lbs a.i. per acre required for adequate control.
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\* Home lawns: Triumph or Dursban in May for adults.  
 Triumph, Diazinon or Oftanol in June for larvae.



Treatment	Rate (lbs ai/A)	Billbug activity index (live larvae & damaged crowns per 1.5 sq ft)
Dursban 50DF	1	1.8 a
Dursban 50DF	2	2.3 ab
Dursban ME20	1	3.7 ab
Dursban ME20	2	4.7 ab
Dursban ME20	0.5	5.2 ab
Dursban 50DF	0.5	5.2 ab
Control		8.0 b

Treatment	Rate (lbs ai/A)	Mean number of ant colonies/1.5 sq ft
Dursban 50DF	2	2.0 a
Dursban 50DF	0.5	3.2 ab
Dursban 50DF	1	3.6 ab
Dursban ME20	2	4.0 ab
Control		4.8 ab
Dursban ME20	1	5.0 ab
Dursban ME20	0.5	7.4 b