

# CONTROL OF HUNTING BILLBUGS<sup>1</sup>

S. H. KERR

Florida Agricultural Experiment Station, Gainesville

The hunting billbug, *Sphenophorus venatus vestita* (Chttn.) is widespread in the eastern United States. It will feed on many kinds of grasses, although in Florida it has been of importance almost exclusively on zoysiagrass. Occasionally, damaging numbers have occurred in Bermudagrass. This billbug is not a major turf pest in Florida, but it is a continuing serious problem in zoysiagrass nurseries. Kelsheimer (1956) first reported the hunting billbug as a pest in Florida nurseries, and described the injury it causes. Kerr (1959), reporting on test work in a turf nursery, stated that the organic phosphorous insecticides were superior to chlorinated hydrocarbons, and that phorate appeared to give the best control. Nematicide and carbophenothion have also been used for control, but growers have commented that none of these three materials has given the high degree of control they would like to achieve. Accordingly, further test work was set up in the winter of 1963-64.

## METHODS AND MATERIALS

The test was conducted on Emerald zoysiagrass growing on muckland in a south Florida turf nursery. Plot size was 100 square feet. There were three replicates in a completely randomized design. Spray formulations were applied with a sprinkling can, with approximately 5 gallons of drench put on each plot. Granulated insecticides were shaken on to the grass with large "salt shaker" jars, followed by 2½-3 gallons of water (applied by sprinkling can) to wash the granules off the grass foliage. The date of application was 25 November 1963. Table 1 shows the materials and dosages used. Chemical names of the proprietary compounds mentioned are: SD 7438—toluene-*a,a*-dithiol bis(O,O-dimethyl phosphorodithioate); Nematicide®—O-(2,4-dichlorophenyl)O,O-dimethyl phosphorothioate; Methyl-Ethyl Guthion—1:1 mixture of O,O-dimethyl S-4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl phosphorodithioate and O,O-diethyl S-4-oxo-1,2,3-benzotriazin-3(4H)-ylmethyl phosphorodithioate; N 2790—O-ethyl-S-phenyl-ethylphosphonodithioate; Baygon®—O-isopropoxyphenyl methylcarbamate; Di-Syston®—O,O-diethyl S-2-(ethylthio)ethyl phosphorodithioate; Bayer 25141—O,O-diethyl O-p-(methylsulfinyl) phenyl phosphorothioate.

On 6 February and again on 2 March 1964, counts were taken of hunting billbugs by cutting 1-foot-wide strips through each plot with a sod cutter. These strips, 1½-2 inches thick, were turned over, and both the underside of the cut piece of turf and the furrow left by the turf's removal were examined. Larvae, pupae, and adults were counted. On 6 February, 10 square feet of strip were examined in each plot; on 2 March, 18 square feet were examined in each plot. An analysis of variance was made of the data, and significant differences between means were ascertained by Duncan's New Multiple Range Test.

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## RESULTS AND DISCUSSION

Table 1 shows the average number of billbugs per plot for each treatment on each date. B 25141 (at a suggested nematicidal dosage), Di-Syston, and Baygon were consistently the most effective, although not significantly better than N-2790 and phorate. Phorate was used at only one-half the dosage of Di-Syston, Baygon, and N 2790, and one-fourth the dosage of B 25141. Indications are that, pound for pound, phorate is as effective as these other materials.

TABLE 1. HUNTING BILLBUG CONTROL TREATMENTS AND RESULTS  
(AVERAGES OF THREE REPLICATES)

Treatment	Lbs. active ingredient per acre	Average number billbugs per 10 square feet 6 Feb. 1964*	Average number billbugs per 18 square feet 2 Mar. 1964*
Check		17.7 ab	25.0 a
Dieldrin 1.5E	5	22.0 a	22.0 a
Carbophenothion 2E	10	16.7 abc	15.7 ab
Carbaryl 80% sprayable	10	14.7 abc	21.0 a
SD 7438 2E	10	14.3 abc	22.0 a
Nemacide 8E	20	12.3 bcd	17.7 ab
Methyl-Ethyl Guthion 2E	5	11.7 bcd	14.0 abc
Phorate 10% granules	5	8.0 cde	7.7 bcd
N 2790 5% granules	10	6.7 de	6.3 cd
Baygon 1.5E	10	4.7 de	5.0 cd
Di-Syston 6E	10	2.0 e	4.0 cd
B 25141 4E	20	1.3 e	0.7 d

\* Averages not followed by the same letter are significantly different at the 5% level by Duncan's New Multiple Range Test.

## LITERATURE CITED

- Kelsheimer, E. G.* 1956. The hunting billbug, a serious pest of Zoysia. Proc. Fla. State Hort. Soc. 69: 415-418.
- Kerr, S. H.* 1959. Progress in insect research on lawns—1959. Proc. Univ. Fla. Turf-Grass Management Confer. 7: 92-97.