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Evaluation of insecticides for masked chafer grub control in turfgrass. Kai Umeda and Gabriel Towers. (University of Arizona Cooperative Extension, Maricopa County, Phoenix, AZ 85040.) Two experiments were conducted at the Sun City Grand, Desert Springs Golf Course in Sun City, AZ. A small plot experiment was conducted on the driving range to compare several insecticides applied as a single or sequential treatment. Treatment plots measured 6.7 ft by 25 ft and were replicated three times in a randomized complete block design. The initial applications were made on 07 July 2006 using a backpack CO₂ sprayer. The sprays were applied in 30 gpa water pressurized to 25 psi using a hand-held boom with four TX-10 hollow-cone nozzles spaced 20-in apart. All treatments included the wetting agent, Dispatch at a rate of 24 oz/100 gal. The initial timing of application was approximately one month after the peak flight of adult beetles was observed using blacklight traps. The soil temperature was 74°F at 2-in depth, while the air temperature was 80°F, cloudy with light sprinkles, and wind gusts at 5 to 10 mph. Overhead irrigation was applied immediately after the applications. Sequential applications were not made in this experiment.

A second large-scale experiment was conducted to compare imidacloprid (Merit 2F) and clothianidin (Arena 50 WDG) at 0.31 lb a.i./A applied with a commercial sprayer equipped with flood-jet nozzles. Three areas on the golf course, two rough areas adjacent to fairways and the perimeter area of the driving range with each treatment plot measuring 75 ft long by 20 ft wide and each treatment duplicated at each area. Treatments were applied on 10 July 2006.

Sampling for grubs was done by using a sod cutter making a single pass measuring 18-in wide and 2-in deep across all plots in the small plot experiment. Sampling was done on 26 July at 19 days after treatment (DAT) and on 30 August at 54 DAT. In the large-scale experiment, sampling was done on 30 August by using a sod cutter making a single pass 25 ft long through the length of each treated plot. No masked chafer white grubs were detected in any of the small plots on either rating date. No masked chafer white grubs were detected in any of the Merit or Arena treated large-scale plots. Both experiments were inconclusive due to the lack of presence of any white grub population in the soil.

Table. Evaluation of insecticides in a small plot experiment at Sun City Grand

Treatment	Rate (lb a.i./A)	Number of grubs*
Untreated check		0
Merit 2F (imidacloprid)	0.3	0
Allectus (imidacloprid + bifenthrin)	0.25 (imidacloprid)	0
Arena 50 WDG (clothianidin)	0.3	0
Meridian 25 WG (thiamethoxam)	0.26	0
Mach 2 (halofenozide)	2.0	0
DPX - E2Y45 1.67 SC Dupont	0.2	0

* sample area per treatment-replicate = 4.5 ft² at rating date at 19 and 54 DAT, treated on 07 July 2006

