

# **Are Black Turfgrass *Ataenius* (Coleoptera) Populations on Golf Courses Determined by Organic Matter Content in Fertilizers?**

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## **INTRODUCTION**

Black turfgrass *ataenius* (*Ataenius spretulus* Haldeman) are small black beetles whose immature stages known as “white grubs” destroy the root system of many cool-season grasses. The grub stage of this beetle is much smaller in comparison to the other white grub species, and can occur in larger densities. The grubs often occur sporadically, but large numbers can cause extensive damage on golf course putting greens, tees, approaches, and fairways. Damage by these insects typically occurs in the northern half of the United States.

Black turfgrass *ataenius* (BTA) adults usually overwinter in woody areas under leaves, piles of grass clippings, or other debris and are usually found in the upper 2 inches of soil. Adults lay their eggs, and subsequent grub damage is usually evident from late May to early July. The objective of this project is to determine if organic matter content plays a role in black turfgrass *ataenius* populations.

## **MATERIALS AND METHODS**

Design: 3RCB, each with 3 replications

Fertilizers used: Chicken Manure, Milorganite (two rates, X and 2X), Urea, and Pro-gro  
Fertilizer application dates: 12 May, 13 May, 15 May and 13 July, 14 July 2000

Application method: Gandy drop spreader

Data collection method: Applied a soap solution to flush out the adults in a two-foot area.

Data collection dates: 12 September, 18 September, and 21 September 2000

## **RESULTS AND DISCUSSION**

Upon sampling all three greens, there was no significant difference between the fertilizers and the control plots. However, there are trends showing an increase of BTA adults in the plots that had fertilizer treatments compared to the untreated control (Figure 1). There does not appear to be much of a difference between organic waste components and fertilizers without waste materials. There is a trend that Milorganite 1X has greater adult populations than the Milorganite 2X rate.

## **CONCLUSIONS**

This experiment will be repeated again next year and the adults will be sampled in the spring and in the fall. Core samples will also be taken to examine the white grub

populations in comparison to the adult populations. Fertilizers will be applied in the spring, summer and fall and in accordance to the fertilizer regime of the golf course.

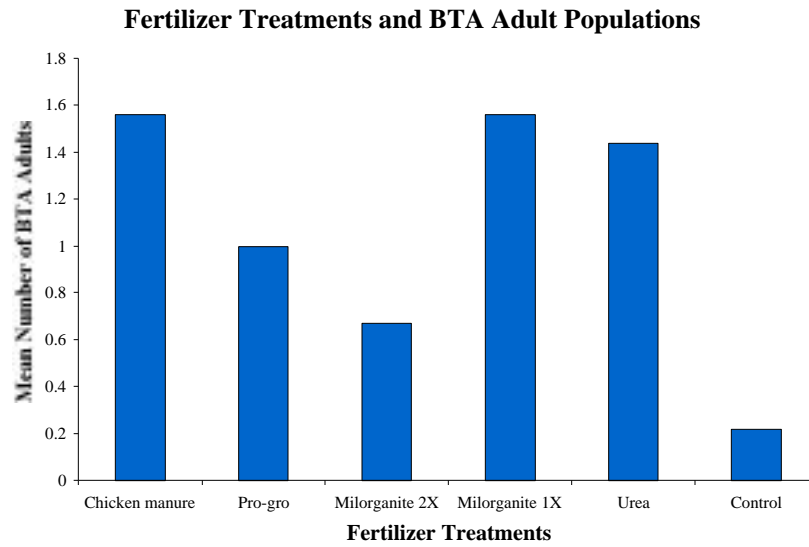


Figure 1. Average number of adults for all three greens compared to the fertilizer treatments.