

## **Effect of Carbon Amendment and Soil Moisture on *Tylenchorhynchus* spp. and *Hoplolaimus galeatus***

M. Browning, C. Dawson, S. R. Alm, C. F. McElderry, and J. A. Amador

### **Abstract**

The effect of amending soil held at 3 different moisture levels with glucose, **unsulfured molasses**, or nutrient broth (0.3, 0.7, 3.2, 7.1 g carbon/100 g) on *Tylenchorhynchus claytoni* and *T. dubius* was investigated. When soil was held under saturated or flooded conditions in the absence of carbon amendments for 7 days, *Tylenchorhynchus* populations were 19% and 16%, respectively, of the controls. Carbon amendments at all levels tested precipitated a further decline in the nematode population to 1% or less of the unamended controls in 7 days. **Two applications of molasses (7.4%, w/w) 3 days apart to nematode-infested soil held in Containers under mist for 7 days reduced *Tylenchorhynchus* spp. and *Hoplolaimus galeatus* densities to 7% and 3%, respectively, of the controls. Nematode densities in turfgrass field plots also declined following irrigation and repeated drenching with a molasses solution.** Based on the observed decline in redox potential and pH in saturated soil, especially following carbon amendment, we propose that the activity of anaerobic fermentative bacteria was responsible for the reduction in nematode densities.

**Keywords:** carbon, *Hoplolaimus galeatus*, moisture, molasses, nematode, pH, redox, *Tylenchorhynchus claytoni*, *Tylenchorhynchus dubius*