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CHANGES IN NEMATODE COMMUNITY STRUCTURE AND COTTON PRODUCTIVITY AS AFFECTED BY POULTRY-LITTER AMENDMENTS. S. R. Koenning,[1] K. R. Barker,[1] and K. L. Edmisten,[2] Plant Pathology Department[1] and Crop Science Department, North Carolina State University, Raleigh, North Carolina 27695, U.S.A.[2]—Experiments conducted at 2 locations focused on the impact of poultry-litter amendments on cotton yield and the population densities of plant-parasitic, fungivorous, bacterivorous, omnivorous, and predacious nematodes in cotton fields infested with the Columbia lance nematode, *Hoplolaimus columbus*. Plots were aranged in a split-plot design with 4 levels of poultry litter (0, 6.7, 13.4, and 20.1 metric tons/ha) as whole plots and growth-regulator treatments (PIX®) as subplots. Poultry litter was added to the soil surface and incorporated 2-4 weeks before cotton was planted in May. Soil samples for nematode assays were taken prior to the addition of poultry litter, at midseason, and at cotton harvest. Growth-regulator treatments generally did not affect nematode numbers in this study. Midseason population densities of Columbia lance nematodes decreased linearly with increasing levels of poultry litter ($P=0.10$) at 1 location. Numbers of bacterivorous nematodes at midseason were positively related ($P=0.10$) to the amount of poultry litter applied in the spring at both locations, but numbers of fungivorous, omnivorous or predaceous nematodes were not. *Helicotylenchus dihystera* population densities generally were not affected by pre-season litter applications. Only fungivorous nematodes were significantly greater ($P=0.10$) in plots amended with poultry litter at cotton harvest. Application of poultry litter effected significant cotton-yield increases at both locations.

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CHANGES IN POPULATION DENSITIES OF PLANT-PARASITIC NEMATODES IN COTTON FIELDS AMENDED WITH POULTRY LITTER. **Koenning, S. R., and K. R. Barker.** Plant Pathology Department, Box 7616, North Carolina State University, Raleigh, NC 27695-7616.

The impact of fall or spring application of poultry litter at rates of 4 to 26 t/ha on population densities of plant-parasitic nematodes was evaluated in several North Carolina cotton fields. Midseason (August) population densities of *Hoplolaimus columbus* were negatively related to the amount of poultry litter applied, but end-of-season numbers of this nematode generally were not. Similarly, numbers of *Meloidogyne incognita* at midseason were inversely related to the amount of poultry litter applied, whereas J2 numbers at cotton harvest were positively related to the rate of litter application. Numbers of *Paratrichodorus minor, Helicotylenchus dihystera,* and *Tylenchorhynchus claytoni* varied widely within these experiments, but were only suppressed at relatively high rates of litter application. The suppression of *H. columbus, P. minor,* and *M. incognita* at midseason was accompanied by a significant increase in cotton lint yield. Fall applications of litter were more efficacious than spring applications in affecting suppression of numbers of *H. columbus* one year, but not in the subsequent year.