

PREVALENCE OF *PASTEURIA* SP. ON RENIFORM NEMATODE IN A GEORGIA COTTON FIELD**Patricia Timper****Richard Davis****USDA ARS****Tifton, GA****Sudarshan Aryal****University of Georgia****Tifton, GA****Abstract**

Pasteuria species are bacterial parasites of nematodes and have been associated with suppression of root-knot, sting, and cyst nematode populations. Little is known about the *Pasteuria* sp. infecting the reniform nematode. While sampling a cotton field study near Cochran, GA, we found *Pasteuria* spores adhering to vermiform stages of the reniform nematode. Soil samples were collected in November 2009, June 2010, and November 2010 to determine the prevalence of *Pasteuria* sp. in locations differing in elevation, soil texture, and nematicide application. The average number of spores per nematode was used to estimate abundance of *Pasteuria*. Fewer *Pasteuria* spores were observed in the sandiest areas of the field and in locations treated with Telone than in the other locations. Similar numbers of spores were observed in the Temik treatment and the control, and there was no effect of elevation on spore abundance. It is likely that there was greater leaching of spores below the sampling zone in the sandier areas. Telone reduced populations of the reniform nematode, thereby reducing the number of available hosts for reproduction of *Pasteuria* sp. Mature spores of *Pasteuria* were observed within the body of juveniles and pre-infective females indicating that the bacterium can complete its lifecycle before plant infection occurs. There was a negative correlation between numbers of reniform nematodes and *Pasteuria* sp. ($P < 0.0001$; $r = -0.618$). As the proportion of nematodes with attached *Pasteuria* spores increased, the numbers of reniform per volume of soil decreased, indicating that the bacterium may be suppressing populations of the nematode.