Development of Single-Spore Isolates of *Pasteuria* spp., A Bacterial Parasite of Plant Parasitic Nematodes.

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Single-spore isolates of *Pasteuria penetrans* were developed from field isolates infecting root-knot nematodes. The nematode-parasitic endospore-forming bacterium, prevents root-knot nematode reproduction. In turn this results in reduced crop damage. The recent association of *P. penetrans* with reduction of root-knot nematode population densities to non-detectable levels under field conditions suggests that *P. penetrans* can play a significant role in future nematode control strategies. However, the inability to mass produce *P. penetrans* and limited host range of *P. penetrans* isolates impair its wide spread use. However, it does not limit the identification of field sites that are naturally suppressive because of heavy infestations of *Pasteuria*.

Several attempts have been made to culture *Pasteuria* but no effort has been successful. Success is dependent upon characterization of the bacterium's genetic and biological variation. To this end, we have established single-spore isolates of *Pasteuria* using video-enhanced microscopy on tomato seedlings under controlled laboratory conditions.

The extent of the biological variation (host range, influence on nematode development, etc.) for each of the isolates requires characterization. This information will be used to determine if strains are present in field populations that will improve the likelihood of culturing *P. penetrans* strains with expanded host range *in vitro*. Future studies should include estimation of variation in morphology, host range, and spore attachment. Genetic differences related to expressed traits should be useful in genetically engineering isolates of *Pasteuria* with enhanced host range and ability to be cultured *in vitro*.