CONTROL OF *MELOIDOGYNE* SPP. IN VEGETABLES USING *IN VITRO* PRODUCED *PASTEURIA* SP.

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Innovations within the last decade have allowed for practical and economical *in-vitro* production of *Pasteuria* spp. spores for biological control of plant parasitic nematodes. A product for turfgrasses utilizing *Pasteuria* spp. known to parasitize *Belonolaimus longicaudatus* has received USA EPA registration and has been commercially available in the USA since January 2010. Furthermore, EPA has allowed an exemption from the requirement of a tolerance for residues when applied pre-harvest, supporting the use and safety of *Pasteuria*-based products in food production. Root-knot nematodes, *Meloidogyne* spp., continue to be a major pest in food production globally. Greenhouse and field studies evaluating *Pasteuria* applied to cucumber and tomato crops for the control of *Meloidogyne* spp. are under evaluation. *Pasteuria* isolates have been applied to the cucumber seeds as seed treatments and tomato transplants have been dipped in solutions containing various rates of *Pasteuria* spore-suspensions. Preliminary data shows a reduction in *Meloidogyne* spp. extracted from soil and from roots as well as an increase in foliar and root mass in plots receiving *Pasteuria* treatments (Figures 1 – 5). A dose-response trend was also noted as the rates of *Pasteuria* were increased. Further development and registration of *Pasteuria*-based products will offer novel biological products for the control of *Meloidogyne* spp.

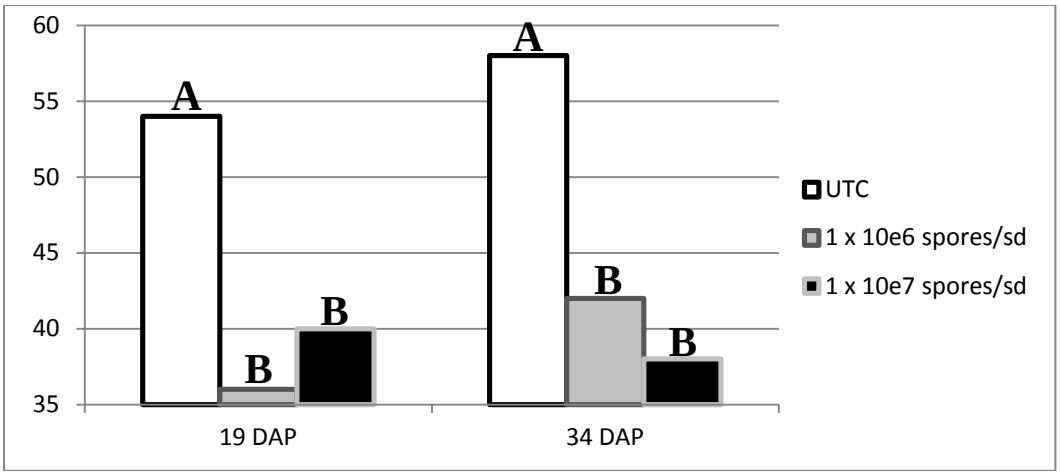

Figure 1: Number of root galls on cucumber roots [P=0.05] – Cucumber seed treatment field trial – Seed treated with *Pasteuria* spp.

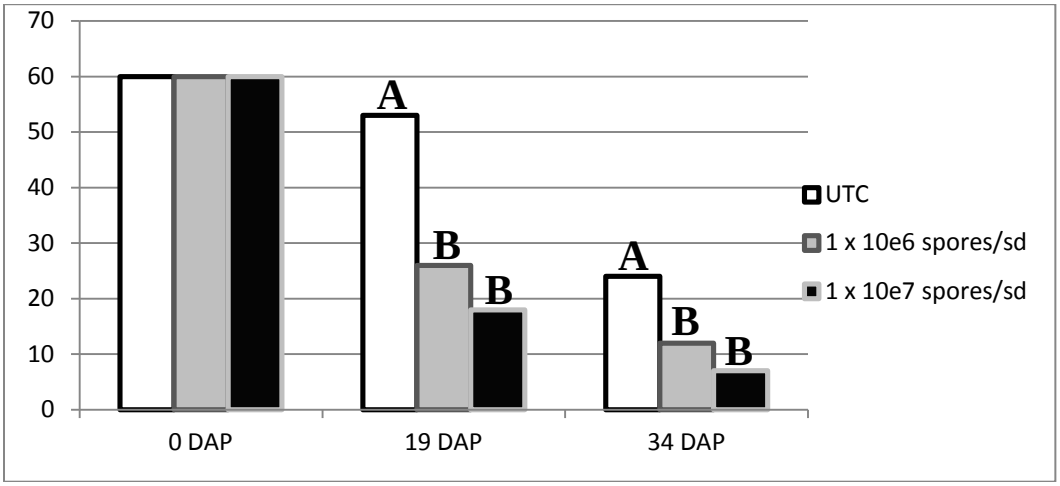

Figure 2: Number of *Meloidogyne* spp. juveniles from soil (cucumber test) [P=0.01] – Cucumber seed treatment field trial – Seed treated with *Pasteuria* spp.

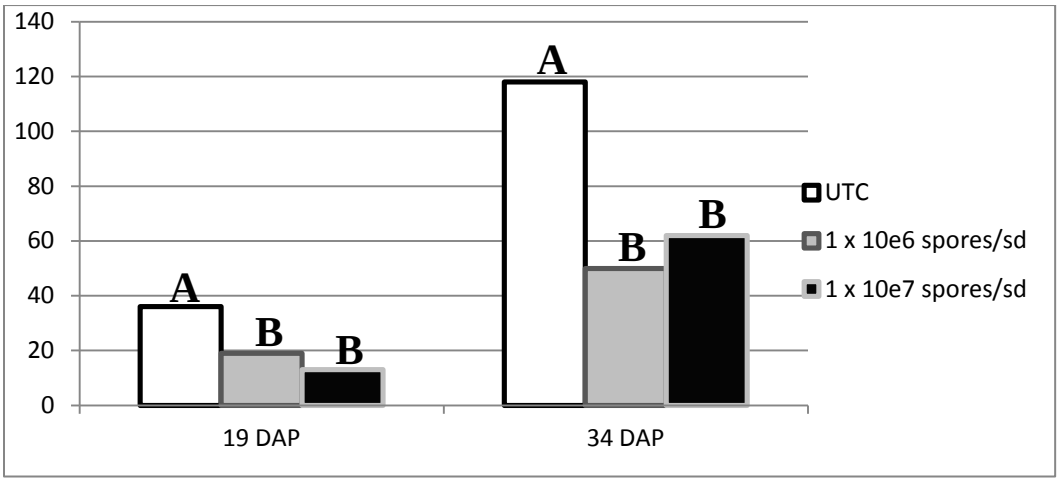

Figure 3: Number of *Meloidogyne* spp. juveniles from cucumber roots [P=0.01] – Cucumber seed treatment field trial – Seed treated with *Pasteuria* spp.

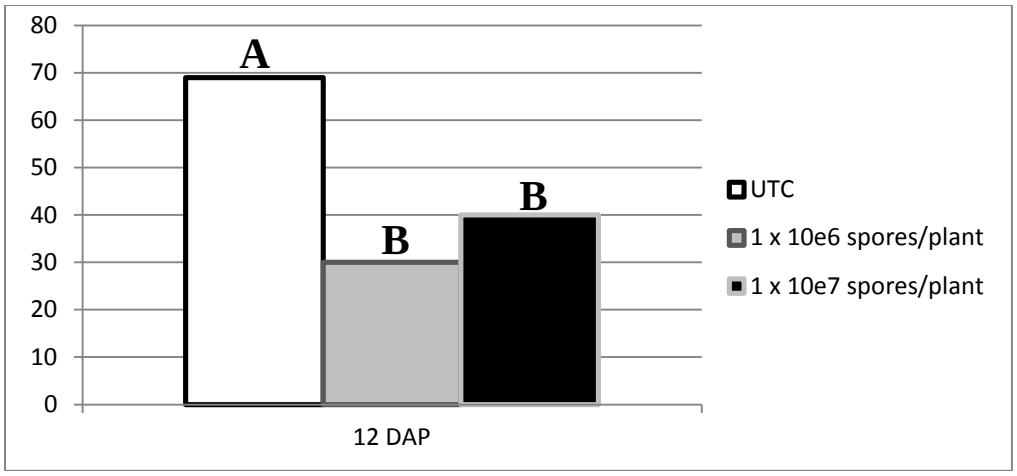

Figure 4: Number of galls/gram of tomato roots [P=0.05] – Tomato transplant dip field trial – Transplants treated with (dipped into) *Pasteuria* spp. spore solution

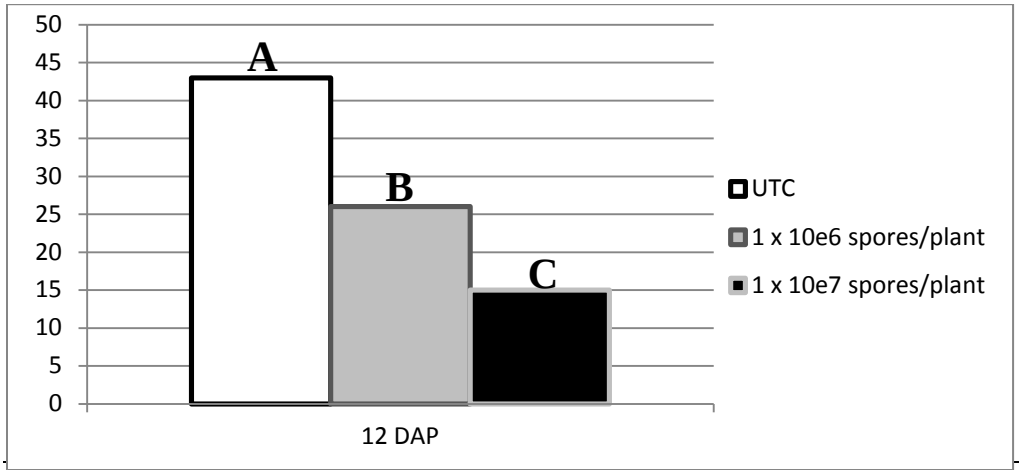

Figure 5: Number of *Meloidogyne* spp. juveniles from soil (tomato test) [P=0.05] – Tomato transplant dip field trial – Transplants treated with (dipped into) *Pasteuria* spp. spore solution