Fungal Control of the Reniform Nematode

Overview
The Reniform nematode is a serious pest to cotton and pineapple farmers. In 2006, this nematode was blamed for over $100 MM in damages in three US states alone (AL, MS, LA). Reniform-resistant varieties of cotton and pineapple are not available and the most widely used nematicide, Aldicarb, is being phased out by 2018. A fungus has been discovered that colonizes and kills all observed life stages of this nematode pest. Application of fungal spores to the soil or as a seed coating could help manage nematode levels and minimize damage to plant roots, increasing yield for farmers.

Advantages
- Kills Reniform nematodes that attack cotton, pineapple, tomato, and other cash crops.
- Not chemically based and not genetically modified — FDA approval not required
- Colonizes nematodes at all fungal stages

Description
The fungus has been shown to colonize and kill at all nematode life stages examined: eggs, vermiform and adult. Characterization of the fungus and nematode colonization using scanning electron microscopy verified fungal zoospores within eggs and adult vermiform nematodes. In an initial 30 day greenhouse study, the fungus was able to spread in soil to 42% of the existing nematode population. Currently, the fungus is cultured using live nematodes. To date, this fungus has not been identified elsewhere in US field studies, in Spain, or in Hawaii. The range of host species has not yet been determined, so it may also infect other nematode varieties.

Status
- Efforts to identify the fungus indicate this may be a distinct strain of *Catenaria auxiliaris*
- Fungus has been isolated and the mode of nematode killing characterized
- Fungal spread in soil has been demonstrated
- A patent application has been filed

Licensing Opportunities
- This technology is available for exclusive or non-exclusive licensing
- Joint development opportunities include funded research or a joint venture

References:
- *Plant Disease*. Apr 2011; Vol 94 (4), p490. ([link](#))
- Biocontrol Studies of *R. reniformis* in Cotton Crops in Alabama [thesis] ([link](#))