**Photo A:** Germinating spores of *Paecilomyces lilacinus*

**Photo B:** Penetration of nematode egg by hyphae (arrows).

**Photo C:** Adult lesion nematode (*Pratylenchus*) adult killed by *Paecilomyces lilacinus*

Photos provided by Dr. Peter Lüth, ProPhyta
Granular formulation containing spores of *Paecilomyces lilacinus* strain 251

- Naturally-occurring beneficial fungus from soil

**Inundative release** nematicide for control of plant parasitic nematodes that prevent establishment of healthy plants and decrease yield.

- Root knot, sting, root lesion, stubby root, burrowing, reniform, and others

Attacks all life stages of the nematode (Eggs, immatures, adults)

Flexible application (chemigation, drench, soil incorporation)

Zero PHI, 4 hr REI, signal word “Caution”

Very safe environmental and safety profile.
MeloCon, the Methyl Bromide Alternative

- Dr. Dak Seal, University of Florida, 2008
- Tomato round var., randomized complete block with 4 reps, each 30 ft by 3 ft. by two rows.
- MeloCon was applied a total of 4 times. A two week pre-plant application of MeloCon at 2 or 4 lbs/a, plus applications at plant and 4 and 8 weeks post plant. The Vydate was applied a total of 6 times. Vydate was applied at 2 pts/a at plant, and 3 weeks post plant, at 4 pts/a at 4 and 6 weeks post plant, and at 8 pts/a at 8 and 10 weeks post plant.
- All plots were maintained per standard disease, insect and weed control procedures for the agricultural area.
- All plots were examined 6 times during the course of the trial for root galling by randomly examining 5 whole plant root systems. The degree of root knot damage was considered moderate.

Photo showing tomato culture treated with MeloCon on rock soils at TREC UFL center in Homestead, FL.
Control of Southern Root Knot Nematodes with MeloCon in Tomatoes, root galls.

Dr. Dak Seal, University of Florida, IFAS, Homestead, FL. Tomatoes planted Dec 20.

- **MeloCon 2 lb (4x)**
- **MeloCon 4 lb (4x)**
- **Vydate check (6x)**
- **Untreated check**

Applications:
- Dec. 6 and 20
- Jan. 20
- Feb 20

= MeloCon application timing.
Dr. Dak Seal, University of Florida, 2008

Tomato round var., randomized complete block with 4 reps, each 30 ft by 3 ft by two rows.

MeloCon treated plots (4 applications) showed significantly higher yields compared to the untreated, and equal to or greater than the Vydate (6 applications).

Value of yield increase (7$/box) with MeloCon at 4 lbs/a versus UTC was 1,500 per acre, or about a 27% increase.

The yield in plots with MeloCon at 4 lbs/a was slightly higher than the Vydate, with two less applications.
Control of Root Knot Nematodes with MeloCon and MeloCon plus Crabmeal in Tomatoes – large block trial

- Glades Crop Care, Agmart, Jennings FL, (2009)
- Grape tomato variety.
- Heavy root knot nematode infestation.
- MeloCon treated tomato plants growth better than UTC and similar to MBR after one application.
- Later readings of nematode counts, root damage ratings, and yield.

Tomatoes in field site app 3 weeks after transplant

Mix tank used for injection with circulating/mixing motor.
T. virens coils around hyphae of Rhizoctonia.
SoilGard® 12G Biofungicide

- Granular formulation containing spores of the fungus *Gliocladium virens* strain GL-21
  - Also known as *Trichoderma virens*
  - Naturally-occurring beneficial fungus from soil

- Preventative fungicide for control of “damping off” diseases that prevent establishment of healthy plants and decrease yield. Kills pathogenic fungi, colonizes any that survive, and exclude recolonization.
  - *Pythium*, *Rhizoctonia*, *Fusarium*, others

- Flexible application (chemigation, drench at plant, soil incorporation, transplant drench).

- Zero PHI & REI, signal word “Caution”

- Very safe environmental and safety profile.
SoilGard, the Methyl Bromide Alternative

- Dave Holden, Camarillo, CA (2009)
- Jalapeno peppers
- Natural but moderate pepper blight *Phytophthora capsici*
- Three applications of SoilGard at 1 lb/100 gal or 5 lb/a (2 weeks before plant as transplant drench, 3 days and 4 weeks post plant), compared to three applications of Ridomil SL Gold at 1 pt/a plus phos acid (3 days post plant and 4 and 6 weeks post plant).
- Count of dead or dying plants weekly through the trial.
- Results showed SoilGard had consistently numerically lower plant infection and mortality through the trial compared to the untreated and the grower standard Ridomil plus Phos acid.
Control of *Fusarium* Crown Rot with SoilGard 12 G in Tomatoes

**SoilGard the Methyl Bromide Alternative**

- Glades Crop Care, Hobe Sound, FL, (2007)
- Tomato var. round FL-47, randomized complete block with 4 reps, each 30 ft. x 5 ft
- Seven day pre-transplant application plus a 28 day post transplant application of SoilGard at either 2 or 4 lbs/acre through drip irrigation, 0.34 GPM, compared to an untreated control.
- Inoculated trial (*Fusarium oxysporum*).
- Ratings were conducted on *Fusarium* incidence and severity.
- Yield estimates were conducted in all plots with two pickings.
Glades Crop Care, Hobe Sound, FL., (2007)

- Overall disease severity in the untreated plots was considered moderate.
- SoilGard decreased both incidence and severity of *Fusarium* crown rot.
- SoilGard was most effective at the 4 lb/acre rate.
SoilGard the Methyl Bromide Alternative

- Glades Crop Care, (2007)
- Harvest data combination of 2 harvest dates.
- Yield from SoilGard plots greater than untreated control plots.
- Value of yield increase (7$/box) with SoilGard versus UTC was 896 dollars per acre. The yield in plots with SoilGard was 11% higher than in the untreated plots.
Control of Southern Blight and Stubby Root Nematodes with SoilGard and MeloCon in Tomatoes

SoilGard plus MeloCon, the Methyl Bromide Alternative

- Florida Ag Research, Dover, FL., (2009)

- Tomato var. Piccus, randomized complete block with 4 reps, each 2.5 ft. x 240 ft.

- Pre-plant application of SoilGard as drench 1 lb/100 gal, 5 lb/a applied on 4/17 and 5/14 through drip irrigation, 0.5 to 0.75 in./acre. Also Melocon applied at 4 lb/a on 5/5 and on 6/6 in 0.5 in./a water.

- Methyl Bromide 50:50 was applied 12 days prior to transplant at 150 lbs/a.

- All SoilGard plus MeloCon plots including the UTC received herbicide applications of Dual 4 pts/a, plus Devranol at 4 lbs/a, plus spot treatment with Sandea at 0.75 oz/a.
Control of Southern Blight and Stubby Root Nematodes with SoilGard plus MeloCon in Tomatoes

- **Florida Ag Research, Dover, FL. (2009)**
- SoilGard plus MeloCon reduced incidence of southern blight, increased plant diameter and height, and decreased root rot. Results were comparable to methyl bromide.
Control of Southern Blight and Stubby Root Nematodes with SoilGard plus MeloCon in Tomatoes

SoilGard plus MeloCon, the Methyl Bromide Alternative

- Florida Ag Research, Dover, FL., (2009)
- Harvest data combination of 5 harvest dates.
- Yield from SoilGard plus MeloCon treated plots was statistically equal to the Methyl Bromide plots and greater than untreated control plots.
- Value of yield increase (7$/box) with SoilGard plus MeloCon versus UTC was 1,308 per acre. The yield in plots with SoilGard plus MeloCon was 98% of the yield of the methyl bromide plots.
- Good weed control all plots.