

**A 30-Year Effort to Deploy the Mole Cricket Nematode and Wasp
2010 Spring Pasture Forum**

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For many years the research committee of the Florida Cattlemen's Association has listed research on mole crickets as its most important concern. In the 1980s, biological control research resulted in the introduction and establishment of a beneficial nematode and wasp. These beneficial organisms are effective in controlling mole crickets and can be adopted widely by ranchers. An Extension education program and associated action is providing the necessary assistance for this adoption.

The mole cricket Extension Action Team composed of researchers, Extension agents and cattlemen have determined the best methods for applying the nematodes and most useful plants for attracting and maintaining the wasps. This information has been communicated to Florida cattlemen by UF/IFAS Cooperative Extension Agents but the per acre cost of materials is as much as the cattlemen can afford, leaving no means of paying for nematode applications and establishing the wasps.

To bridge the gap between developing these biological controls and making them available to Florida cattlemen, we have secured grants from the Southern Region IPM Center and UF/IFAS Extension. These funds have been used to purchase two swept-back chisel rigs with trailers for transport, develop an Extension education program to train cattlemen in how to use the equipment, and make the equipment available to them on loan. The plan is to:

- 1) To develop an Extension education program and demonstrate to Florida ranchers the use of a beneficial nematode and wasp to control pest mole crickets in their pastures. It will instruct in how to identify damage caused by mole crickets, apply the nematodes, distribute the wasps, and determine if the nematodes and wasps have established.
- 2) To make the nematode application equipment available on loan during and far beyond the limits of the project.
- 3) To assist cattlemen in installing the specified wildflowers as nectar sources for the wasp.
- 4) To help spread the nematode and wasp to all areas where mole crickets are still a problem in Florida, so as to provide a permanent solution.

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Mole Cricket & Damage



Chemical Control



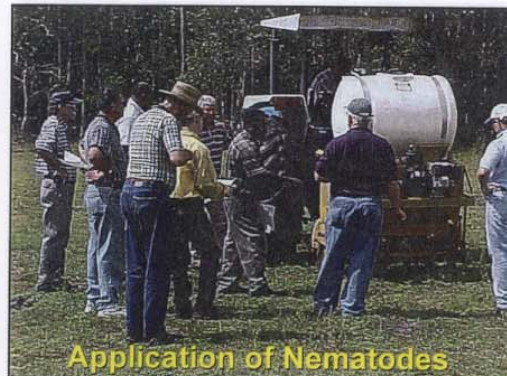
- Mole cricket damage and chemical control cost ~ \$100 million annually in the S.E. United States.
- Chemicals are too expensive for use on pasture land.
- Mole crickets rebound in most treated areas.
- Concern about non-target effects of chemicals.

Mole Cricket State Program

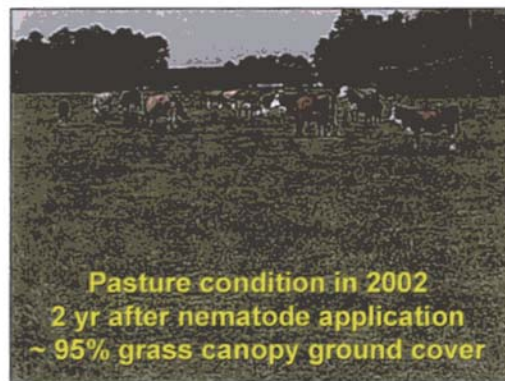
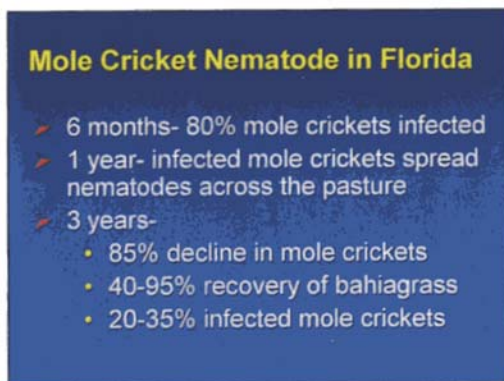
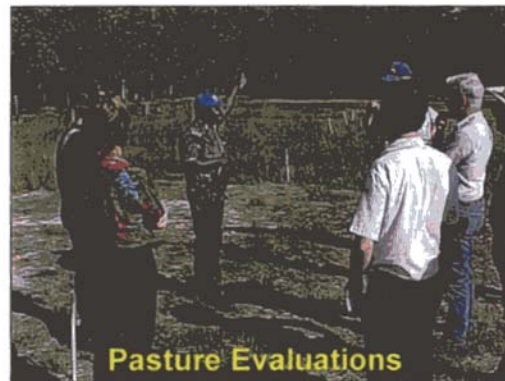
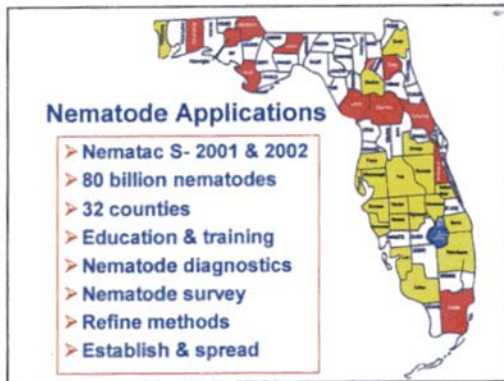
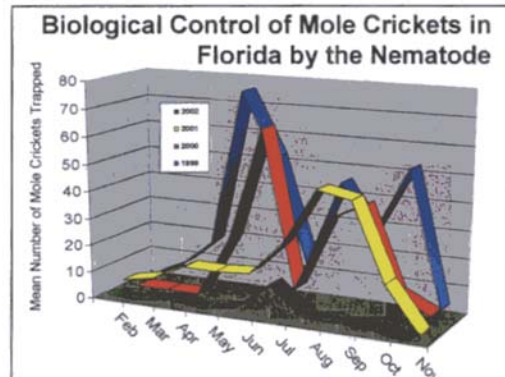
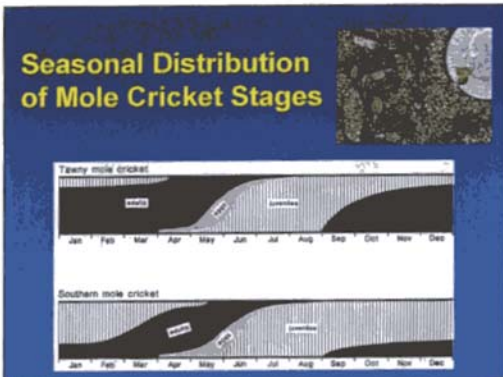
Objective: To conduct research and Extension demonstration projects that will widely distribute the mole cricket nematode and wasp in Florida, determine their establishment and impact on pest mole crickets, and support commercialization of the nematode.



In vitro Nematode Production



Application of Nematodes





Suppliers of Nematac S

Pasture and Sod Farms

- » Helena Chemical
- » ProSource One
- » Diamond R Fertilizer
- » Griffin Fertilizer
- » Triangle Chemical
- » Growers Fertilizer



Survey: Do You Need Mole Cricket Nematodes?

- » Do you have significant mole cricket problems in your pasture? **Yes**
- » Would you use Nematac S with technical assistance from Becker Underwood and UF/IFAS? **Yes**
- » Are you willing to pay up to \$50 per acre for both the product and application? **No**
- » Would you prefer to pay \$25 per acre and borrow the application equipment? **Yes**

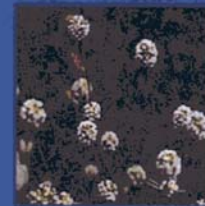
Actions to Increase Deployment of Nematac S

- » Provide application equipment and assistance in applying the nematodes.
- » Keep the cost to \$25 - \$50 per acre
- » Conduct field demonstrations to assure that the nematodes are used effectively



How to Add Larra Wasps to Control Pest Mole Crickets

- Plant shrubby false buttonwood, *Spermacoce verticillata*



Larra bicolor on a spermacoce flower



Larra attacking a mole cricket





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IFAS
Entomology and Nematology

MCricket

<http://entomology.ifas.ufl.edu/fasulo/molecrickets/>

IPM Integrated Pest Management
Florida

<http://ipm.ifas.ufl.edu>