

How to Use Nematac[®] S against Pest Mole Crickets in Pastures¹

N. C. Leppla, J. H. Frank and J. A. Graesch²

Nematac[®] S is a proprietary formulation of the insect-parasitic nematode *Steinernema scapterisci* Nguyen and Smart. These nematodes are released in their infective juvenile stage to search out and enter pest mole crickets through natural body openings. Once inside, the nematodes release symbiotic bacteria that quickly kill adult and large immature nymphs. Reproduction inside mole crickets releases new generations of infective juveniles that disperse in search of further prey. Nematodes can also be spread by infected mole crickets that disperse throughout an area.

Nematac[®] S is patented by the University of Florida for use against mole crickets and licensed exclusively to Becker Underwood for production and distribution as a biopesticide. It only infects adult and large immature mole crickets (1 – 1 1/2 inches long). It is applied into moist soil in the early morning or late evening to avoid high temperatures and nematode desiccation. Soil temperatures should be 55-100°F (12-38°C). When applied in the soil, **Nematac[®] S** provides prolonged protection against

pest re-infestation and is considered safe to use around children, pets, and plants.



Figure 1. Mole crickets can severely damage Florida pastures, especially bermudagrass or bahiagrass. (Credit: UF/N.C. Leppla)

A **Nematac[®] S** applicator is available free of charge and can be reserved by contacting your county Extension office (<http://solutionsforyourlife.ufl.edu/map/>). The equipment is kept on a trailer that can be pulled behind a full-size pickup truck. The applicator has a three-point hitch for use with your tractor. Your

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2. N. C. Leppla, professor/director-IPM Florida, and J. H. Frank, professor Entomology and Nematology Department, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL; J. A. Graesch, nematode field development specialist, Becker Underwood, Ames, IA.

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Figure 2. Tunnels at the soil surface are a sign of mole cricket infestation. (Credit: UF)



Figure 3. Tawny mole cricket adult. (Credit: UF/P.M. Choate)



Figure 4. Greatly magnified beneficial nematode similar to Nematac® S. (Credit: UF/K.B. Nguyen)

county Extension Livestock Agent will provide instruction in how to use the equipment safely and effectively.



Figure 5. Nematac® S application equipment pulled behind a tractor. (Credit: UF/M.W. Warren)

What You Need to Do:

1. **Check your pasture to determine whether it is infested with mole crickets.** Signs include patches of dead grass and tunnels visible on the soil surface. In the early morning, find a 2 X 2 ft (4 ft²) area of grass where mole crickets are suspected to be present. Mix a solution made of 1 – 2 tablespoons of liquid dishwashing detergent in 1 gallon of water and pour over the area. Control is justified if four large mole crickets come to the surface within three minutes.
2. **Purchase Nematac® S.** Nematodes do not infect small mole crickets, so make sure nymphs are at least 1 – 1 1/2 inches long before placing an order. In Florida, adult mole crickets are most abundant in September through November and February through April. Nematac® S should be kept refrigerated at about 41°F and used within four weeks of receipt. Nematac® S is supplied only by Becker Underwood (<http://www.beckerunderwood.com/>) The minimum order is one case with two trays, each tray containing 250 million nematodes. This is enough nematodes to treat four acres in strips the width of the application equipment. Treat one strip and skip seven (see ENY663/IN413 for application details). For more information, contact Al Clarke, Southeastern Territory Manager (al.clarke@beckerunderwood.com, 407-474-8303).
3. **Apply Nematac® S.** Apply the nematodes at dawn or dusk, when the area to be treated is not in direct sunlight and is moist from rain or irrigation. Mix the nematodes with water, keep agitated, and apply immediately over the area to

be treated. Detailed application instructions are available at the Becker Underwood website.

For more mole cricket control options see:

- <http://entomology.ifas.ufl.edu/fasulo/molecrickets/mcricket2010.htm> and http://ipm.ifas.ufl.edu/resources/success_stories/molecricket/index.shtml
- For IPM information on different pests see: <http://ipm.ifas.ufl.edu/>
- For everyday solutions for your life see: <http://solutionsforyourlife.ufl.edu/>.

References

<http://edis.ifas.ufl.edu/IN249>

<http://edis.ifas.ufl.edu/IN391>

<http://edis.ifas.ufl.edu/IN413>