# Integrated Pest Management of Plant–Parasitic Sting Nematodes on Bermudagrass

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**Objectives:**

1. *Determine if one or more IPM programs can be used to replace or reduce reliance on conventional nematicides.*
2. *To verify if sting–nematode resistant/tolerant bermudagrass genotypes identified in greenhouse screening are more resistant/tolerant in the field than Tifway.*
3. *To determine if the above genotypes require less frequent nematicide use than Tifway.*
4. *To determine if a biopesticide program combined with use of resistant/tolerant bermudagrass genotype is sufficient to manage sting nematodes without the use of a conventional nematicide.*

Use of bermudagrass cultivars resistant or tolerant to sting nematode is essential for sustainable turf management in sandy coastal soils of the southeastern United States. Identification and development of tolerant bermudagrass cultivars and development of new IPM programs for plant–parasitic nematodes on golf courses in Florida are possible. A multi–year field experiment including five bermudagrass genotypes and four different nematicide regimes in a split–plot design with five replications was initiated in fall, 2011.

The five bermudagrass genotypes evaluated were the standard cultivar Tifway, two commercial cultivars (´TifSport´ and ´Celebration´) that were identified as tolerant to sting nematode, and BA 132 and PI 291590, which are experimental germplasm identified as tolerant to sting nematode. Data on turf percent green cover is collected every two weeks throughout the turf growing season and nematode populations are assayed every three months. Turf establishment was measured by digital image analysis to determine the percent of each plot covered by green turf every two weeks during the bermudagrass growing season. Nematicide regimes being studied are: 1) No nematicide, 2) Annual application of Curfew Soil Fumigant (standard nematicide practice), 3) Calendar based IPM program including rotations of Nortica, MustGro Invest, Multiguard Protect and Avid, and 4) Monitoring–based IPM where Nortica, MustGro Invest, Multiguard Protect or Avid are applied as–needed based on turf health and nematode population.

**Bermudagrass cultivars resistant to sting nematode are being evaluated along two commercial cultivars ´TifSport´ and ´Celebration´.**

In 2012, the greatest percent green cover was greatest for Celebration and PI 291590 (67% and 68%, respectively) and lowest for TifSport, Tifway and BA 132 (58%, 59% and 57%, respectively). TifSport had the fewest sting and spiral nematodes, but had the most stubby–root and ring nematodes. At the post Curfew application sampling dates (May and August) both IPM programs and Curfew reduced population densities of sting, spiral, stubby–root, and ring nematodes. The monitoring and calendar based IPM programs were generally equivalent to Curfew with regard to nematode reduction.



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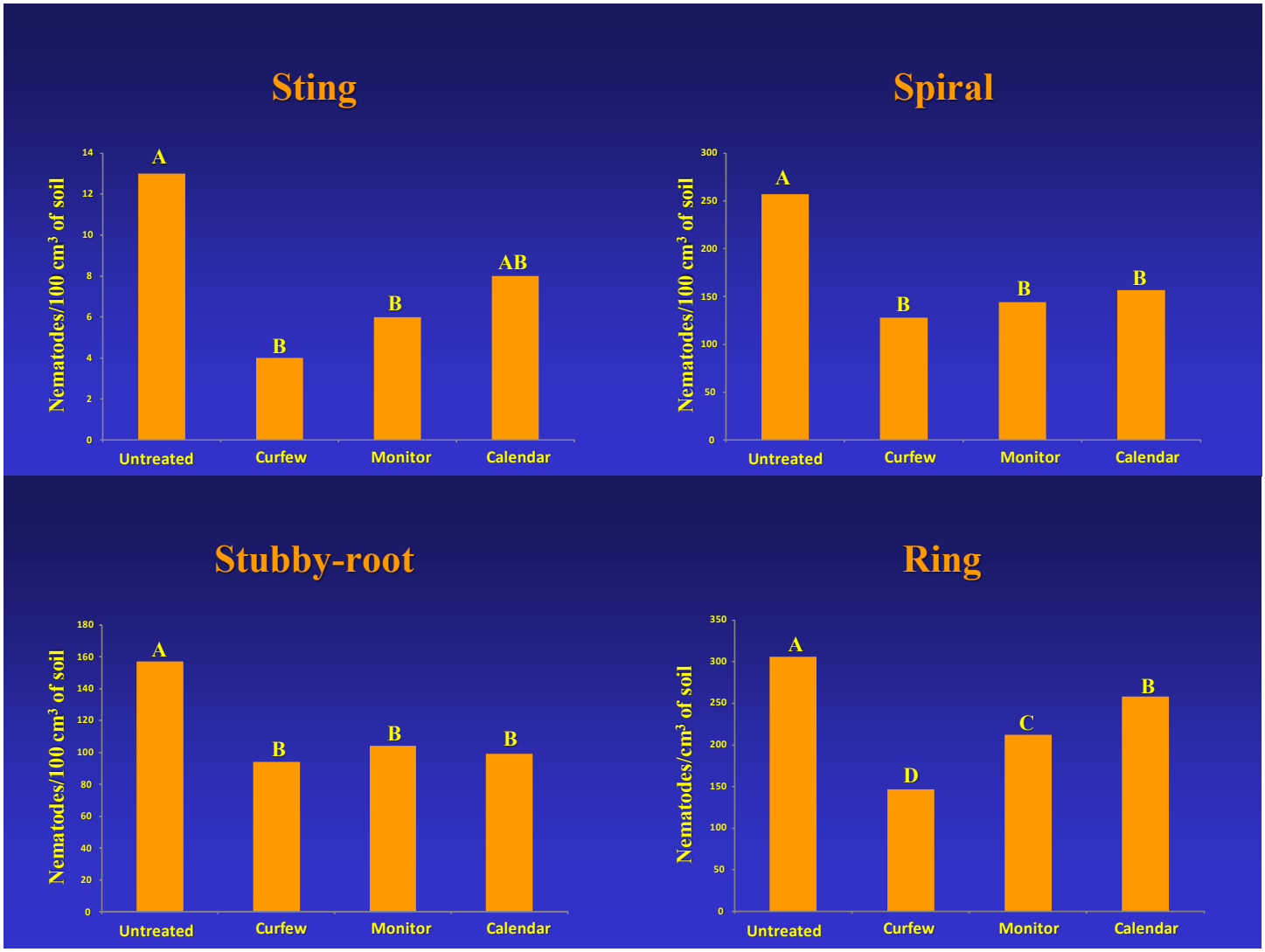
**Summary**

- Celebration bermudagrass had the greatest percent green cover
- Tifway bermudagrass had the least sting and spiral nematodes, but the most stubby–root and ring nematodes
- IPM programs were generally as effective as Curfew with regard to nematode population reductions

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