Scanning electron microscopy results indicated that lateral line structures of J2 suspended in the highest Crop Guard® concentrations had a ''sunken'' appearance. Ultimately, $\dot{M}O_2$ measurements confirmed that the respiratory physiology of J2 was adversely affected after suspension in Crop Guard®. Reproduction of *M. javanica* on the susceptible tomato cultivar Rodade resulted in significantly lower numbers of eggs and J2 being obtained for the two highest concentrations of the particular test products compared to those for the lowest concentrations. Results demonstrated that two of the test products as well as MultiGuard Protect® and Crop Guard® had an adverse effect on root-knot nematode J2 used in these experiments.

HOST STATUS OF FRUIT PLANTS TO *MELOIDOGYNE ENTEROLOBII*. **Freitas[1, 4], V.M., V.R. Correa[1,2], M.D.G. Carneiro[1], J.G. Silva[1], C.B. Gomes[3], J.K. Mattos[4], L. Somavilla[3] and R.M.D.G. Carneiro[1].** [1]Embrapa - Recursos Genéticos e Biotecnologia, C. P. 02372, 70849-979 Brasília, DF, Brazil; [2]Depart. de Fitopatologia, Universidade de Brasília, 70910-900, Brasília, DF, Brazil; [3]Embrapa Clima Temperado, C.P. 403, 96001-970 Pelotas RS, Brazil; [4]Fac. Agronomia e Veterinária, Universidade de Brasília, 70910-900, Brasília, DF, Brazil.

Meloidogyne enterolobii (= *M. mayaguensis*) has been reported in various states of Brazil causing severe damage in commercial guava plantations. The host suitability of nineteen fruit species of economic importance in Brazil were evaluated against *M. enterolobii*. Plantlets of different species grown in plastic bags were inoculated with 10,000 eggs of *M. enterolobii* per plant. The plants were evaluated for resistance to *M. enterolobii* three to eight months after inoculation, considering the fresh root weight plants, gall index, egg mass index and the nematode reproduction factor (RF = final population/initial population). Ten banana (*Musa* spp.), six barbados cherry (*Malpighia* spp.), one fig fruit (*Ficus carica*), two grape (*Vitis* spp.) and six melon (*Curcumis melo*) genotypes were considered susceptible to *M. enterolobii*, as well as one papaya (*Carica papaya*) genotype (RF>1). Açaí (*Euterpe oleraceae*), atemoya (*Annona cherimola*), avocado (*Persea americana*), cashew nut (*Anacardium occidentale*), citrus (*Citrus* spp.), coconut (*Cocos nucifera*), grape rootstocks, jabuticaba (*Plinia trunciflora*), mango (*Mangifera indica*), mulberry fruit (*Morus alba*), passion fruit (*Pasiflora* spp.), sapodilla (*Manilkara zapota*), soursop (*Annona muricata*), starfruit (*Averrhoa carambola),* olive (*Olea europaea*) and strawberry (*Fragaria x ananass*) were considered as non-hosts or poor hosts to the nematode. These species may be planted in crop rotation in areas infested by *M. enterolobii*.

HYPERSPECTRAL SENSOR TECHNIQUES AND POPULATION MODELLING OF *HETERODERA SCHACHTII* FOR ASSESSING THE SPATIO-TEMPORAL DYNAMICS OF NEMATODE INFESTATION IN SUGAR BEET VARIETIES UNDER FIELD CONDITIONS. **Fricke[1], B., K. Schmidt[2], M. Daub[3], H. Goldbach[1].** [1] INRES-Plant Nutrition, Faculty of Agriculture, Bonn University, Germany; [2] Nemaplot, Bonn, Germany; [3] Julius Kühn Institute, Plant Protection in Field Crops and Grassland, Elsdorf, Germany.

Crop losses in sugar beet due to *Heterodera schachtii* infestation are of major concern in many areas. Sustainable crop management provides resistant and tolerant varieties against pathogen infestation. The present study aims at monitoring the infestation process and to characterize specific phenotypic traits of different sugar beet cultivars related to nematode damage under field conditions. The application of hyperspectral sensor techniques allows non-invasive monitoring of the leaf canopy. Assessing hyperspectral signatures from canopy reflection is used to describe the stress response of the plants. A high spectral resolution, however, creates massive amounts of data. Thus, the classification of vegetation vitality by different spectral vegetation indices from ratio of selected wavebands is used to reduce the amount of sensor information. Choosing the most appropriate wavebands to correlate with plant physiological parameters may then facilitate data collection and handling. It bears, however, the risk of losing important information. In a novel approach, however, the entire spectral range of canopy reflection is considered. The classification by the Nemaplot® model is based on two steps. First, the model is fitted to the hyperspectral signature by transforming the wavelength information to specific numerical parameters. Second, these numeric parameters are interpreted with a discriminant analyses in order to classify the signature which correlates best with nematode infestation. The stress answer of sugar beets over the course of the day and across a season was sampled and data are presented where hyperspectral information is used to describe *Heterodera* population dynamics.

NEMATODES ASSOCIATED WITH EDAMAME, *GLYCINE MAX* L. (MERR.) IN ARKANSAS, UNITED STATES. **Fultz, J., and T. Kirkpatrick.** University of Arkansas, Fayetteville, Arakansas 72701, USA.

Edamame, also known as vegetable soybean, *Glycine max*, was introduced to the United States from Japan in 1890 and has been growing in popularity as a high-fibre, low-sugar snack in recent years. In 2012, American Vegetable Soybean and Edamame, Inc. established the first commercial processing plant in the United States near Mulberry, Arkansas. About 2,000 acres of edamame are now being grown annually in the state. Since edamame is harvested as an immature seed, management practices vary from those used for conventional soybean. Plant-parasitic nematodes, particularly *Meloidogyne incognita* (root-knot) and *Heterodera glycines* (soybean cyst) known to be wide-spread in Arkansas, are pests of concern. The objective of this study was to determine the nematodes associated with edamame in Arkansas fields, and to evaluate new breeding lines for resistance to these nematodes. Production fields of 2013 were surveyed immediately following harvest to determine the presence, identity, and relative population density of nematodes. Where they were detected, *Meloidogyne* spp. second stage