

Peanut and nematode response to rotation sequence, cultivar, and chemicals applied at planting

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Crop sequence, cultivar, and nematicide or fumigation can affect plant parasitic nematodes and peanut yield. Populations of nematodes in soil and peanut yield were determined when the cultivars Bailey II and TifNV High O/L were treated with imidacloprid or imidacloprid plus fluopyram in the seed furrow at planting or metam sodium was injected in soil 2 weeks prior to planting followed by imidacloprid at planting within ten different cropping sequences. Cropping sequences included continuous peanut and peanut planted at different intervals in combination with corn, cotton, and soybean over a seven year period of time. Main effects of rotation, cultivar, and chemical treatment were significant for peanut yield and populations of lesion, root knot, and stunt nematodes. The interaction of rotation by cultivar by chemical treatment was not significant for peanut yield or nematode population while the interaction of cultivar and chemical treatment was significant for lesion and stunt nematodes. Fewer nematodes were observed when the sequence between peanut plantings was increased or when soybean was not included in the rotation. Pooled over rotation sequence, lesion, root knot, and stunt nematode populations were lower for TifNV High O/L than Bailey II. Pod yield was greater for TifNV High O/L than Bailey II. Metam sodium was generally more effective in reducing populations of nematodes than fluopyram; fluopyram reduced nematodes in some cases more than the imidacloprid control. These results demonstrate the relative effectiveness of cultural practices including rotation and cultivar compared with chemical controls applied at planting.