POSTER SUMMARY

PLANTING VARIETY MIXTURES: IS THIS BENEFICIAL FOR PEST AND DISEASE CONTROL?

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Abstract

Millions of Rands are lost annually in the sugarcane industry due to pest and disease damage. Sugarcane varieties differ in their ability to tolerate these pressures and are rated accordingly. Planting varieties with different tolerance ratings as mixtures in the field to increase yield and improve pest and disease control is successful in other crops such as wheat and rice. The aim of this study was to evaluate the effect of planting mixed sugarcane varieties on nematode numbers, rust infection, *Eldana saccharina* Walker (Lepidoptera: Pyralidae) (eldana) damage and crop yield. Three varieties were planted in each trial, on their own and in combination. Nematode numbers were monitored over six crops at Umdloti and three crops at Sheffield. Rust infection at Eston was monitored over three crops and eldana damage at Gingindlovu over four crops. Each trial was harvested annually, except Eston (2-year cycle) and yield (biomass and sucrose) were recorded. The variety mixtures at Umdloti and Sheffield had no significant effect on nematode numbers or crop yield. At Eston, mixtures showed a significant increase in yield in the first ratoon crop as compared with susceptible N29 planted on its own. The mixture, however, did not yield more than N12 (resistant variety) planted on its own. No significant differences in eldana numbers were found at Gingindlovu when comparing the mixed plantings with N27. The mixtures tested in this study did not significantly reduce pest/disease pressure or increase yield compared with the varieties planted on their own. There is thus no obvious benefit to planting mixed varieties over the current resistant varieties.

Keywords: sugarcane, nematodes, eldana, rust, varieties