POSTER SUMMARY

EFFECT OF MULCHES AND CHEMICAL TREATMENTS ON VIRUS SPREAD IN NOVACANE® PLANTLETS

MCFARLANE SA[1], MARTIN LA[1], WILKINSON D[1], KOCH AC[1], VAN ANTWERPEN T[1], PILLAY N[1] AND RUTHERFORD RS[1,2]

[1]*South African Sugarcane Research Institute, P/Bag X02, Mount Edgecombe, 4300, South Africa*
[2]*School of Life Sciences, College of Agriculture, Engineering and Science, University of KwaZulu-Natal, Pietermaritzburg, South Africa*
sharon.mcfarlane@sugar.org.za stuart.rutherford@sugar.org.za

Abstract

The virus pathogens causing the sugarcane diseases, mosaic (*Sugarcane mosaic virus* - SCMV) and yellow leaf (*Sugarcane yellow leaf virus* - SCYLV), are vectored by aphids and are widespread in the South African sugar industry. Methods to reduce aphid numbers and subsequent SCMV and SCYLV spread in nurseries are required in order to provide healthy seedcane for the establishment of commercial fields. The efficacy of applying chemicals or mulches to reduce aphid numbers in NovaCane® plantlets was investigated. Treatments included reflective plastic sheeting and sugarcane trash used as mulches in the interrow, an insecticide (imidacloprid) and methyl jasmonate, a semiochemical that is reported to convey a signal that influences aphid activity. Cane growth, aphid numbers and SCMV and SCYLV incidence in these plots were compared to untreated control plots. The number of shoots was significantly higher in plots with the plastic mulch compared to the other treatments. Although aphid populations were generally low in the trial and the difference between treatments was not significant, numbers were lowest in the plastic and trash mulch treatments. Imidacloprid applied in the furrow had no effect on aphid numbers in this trial. Mosaic incidence was lowest in plots with the plastic mulch, but the treatments had little effect on SCYLV incidence. Plastic mulch is reported to reduce water loss and was observed to suppress weed growth in this trial, which would be of particular benefit when establishing nurseries with NovaCane® plantlets that are sensitive to water stress and herbicides in the early stages of growth. The practicalities of applying the plastic mulch are being investigated.

Keywords: tissue culture, NovaCane®, sugarcane viruses, virus management, aphids, mulch