

## POSTER SUMMARY

**DEVELOPMENT OF A NEW DETECTION  
METHOD FOR THE DIAGNOSIS OF SUGARCANE  
YELLOW LEAF VIRUS IN SUGARCANE**

VAN ANTWERPEN T, PILLAY N, JACOB R, ALBERTSE E AND MCFARLANE SA

*South African Sugarcane Research Institute, P/Bag X02, Mount Edgcombe, 4300, South Africa*  
[Tania.vanantwerpen@sugar.org.za](mailto:Tania.vanantwerpen@sugar.org.za) [Navona.Pillay@sugar.org.za](mailto:Navona.Pillay@sugar.org.za) [Robyn.Jacob@sugar.org.za](mailto:Robyn.Jacob@sugar.org.za)  
[Ewald.Albertse@sugar.org.za](mailto:Ewald.Albertse@sugar.org.za) [Sharon.McFarlane@sugar.org.za](mailto:Sharon.McFarlane@sugar.org.za)

**Abstract**

Sugarcane yellow leaf virus (SCYLV) is the causal agent of yellow leaf disease in sugarcane. SCYLV has been reported to cause significant yield losses in sugarcane worldwide. Common symptoms of SCYLV infection include the yellowing of the leaf midrib, reduced sucrose and biomass, short terminal internodes and reduced growth. Visible symptoms are not always presented, and therefore sensitive diagnostic tests are needed for the detection of the virus. Reverse Transcriptase Polymerase chain reaction (RT-PCR) as well as tissue blot immunoassay (TBIA) are currently used for SCYLV detection in the South African Sugarcane Research Institute (SASRI) quarantine glasshouse and in research projects. Rapid and reliable methods which will reduce time, costs and labour are important for routine diagnosis. In this project, a new diagnostic tool, namely quantitative real-time polymerase chain reaction (real-time qPCR) was introduced and optimised for use in the quarantine facility. Specific qPCR primers were designed from published sequences of conserved fragments from different strains of SCYLV. The primers amplified a 165bp fragment and were effective for the detection of SCYLV infected sugarcane leaves. Future work will include the detection and quantification of viruses such as Sugarcane mosaic virus and Maize streak virus.

*Keywords:* Sugarcane yellow leaf virus, SCYLV, quarantine, tissue blot immunoassay, TBIA, RT-PCR, qRT-PCR