

## POSTER SUMMARY

### CREATING A MULTI-USER DIGITAL DATA COLLECTION SYSTEM FOR RATOON STUNT

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#### Abstract

Ratoon Stunt Disease (RSD; *Leifsonia xyli* subsp. *xyli*) causes substantial yield losses in sugarcane and has a significant economic impact on crop production. The disease slows down growth, which results in a reduction in the stalk height and diameter. Due to a lack of obvious visible symptoms, RSD is frequently overlooked, which leads to its accidental spread through infected seedcane, ineffective crop eradication and contaminated equipment during harvesting. In order to identify the infected fields, Xylem sap is extracted from stalk samples that are collected by the SASRI Biosecurity Inspectorate. Field data are collected by using traditional paper-based data collection forms, which are then captured in spreadsheets by administrators in the different regional offices. The spreadsheets and the sap samples are then sent to the SASRI RSD laboratory at Mount Edgecombe for analysis. The results are uploaded to the ORACLE database and distributed to the growers. Although the paper-based system is standardised throughout the industry, it is complex, with multiple users contributing towards the final RSD database. Moreover, the samples taken from fields are not geographically referenced. ArcGIS Survey123 was used to create a multi-user data collection system which consists of mobile devices, smart forms, computers, a web-based RSD data capture system and the visual representation of RSD incidence. Sampled fields are geographically referenced, and the data are submitted to the central ArcGIS Portal, where they can be accessed by the administrators who can annotate the spreadsheet in the portal. The RSD laboratory staff have access to upload the results after the sample analysis. The data are sent to both the ORACLE database and Postgres geodatabase, and they are linked to the RSD Dashboard. This allows Extension Specialists and Biosecurity Inspectorate technical staff to view the sampling events and the related incidence of RSD, thereby providing timeous recommendations to growers on how to manage the disease.

**Keywords:** Ratoon Stunt Disease, RSD, Survey123, Dashboard, smart forms, biosecurity