

## POSTER SUMMARY

**A WEB-BASED REAL-TIME WEATHER DATA TOOL  
FOR THE SOUTH AFRICAN SUGAR INDUSTRY**

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**Abstract**

Weather information is vital for planning and performing agricultural operations. Often the unavailability of timely meteorological information impedes the integration of weather data into decision support tools for agronomic planning. The South African Sugarcane Research Institute (SASRI) records and processes meteorological data from various sites across the South African sugar industry. The information and related products are available to stakeholders on the SASRI weather website, <http://portal.sasa.org.za/weatherweb/>. However, high data transfer costs limit data uploads on the website to once a day and only for daily summaries. This makes the latest available data at least one day behind and hence impractical to use for immediate decisions. The objectives of this work were to introduce a cost effective and efficient automatic weather station (AWS) data transfer system and to design and implement a web-based near real-time data display tool. The Global System for Mobile communication (airtime-based) was replaced by the General Packet Radio Service (internet-based) at 18 strategic AWSs to facilitate near continuous low cost data transfer and display on a website using a Real-Time Monitor and Control software. Weather variables such as rainfall and temperature recorded at each AWS are displayed and updated every five minutes. Additional derived weather-based variables include evapotranspiration and a fire danger index. Graphical presentations of all the variables can be viewed, while current and recent data can be downloaded. Users were asked to provide feedback on the tool, and their comments were used to improve the web facility. The tool is useful for real-time decision making for irrigation, spraying and harvesting operations and will be extended to more AWSs.

*Keywords:* real-time, weather data, AWS, sugarcane, decision making, planning