POSTER SUMMARY

GERMINATION OF SOUTH AFRICAN SUGARCANE VARIETIES AFTER HOT WATER TREATMENT

KOCH AC, McFARLANE K AND McFARLANE SA

South African Sugarcane Research Institute, P/Bag X02, Mount Edgecombe, 4300, South Africa
aimee.koch@sugar.org.za  keith.mcfarlane@sugar.org.za  sharon.mcfarlane@sugar.org.za

Abstract

Ratoon stunting disease (RSD) caused by the bacterium _Leifsonia xyli_ subsp. _xyli_, is currently the most prevalent and important bacterial disease in the South African sugar industry. Hot water treatment (HWT) of seedcane at 50°C for two hours forms part of an integrated management strategy for the disease, but can have a negative effect on germination percentage and rate. For this reason, all released varieties are tested under controlled glasshouse conditions to determine the effect of HWT on germination.

Three-budded setts of 32 commercial and five unreleased varieties were HWT before being planted into seedling trays. Untreated setts of the same varieties were planted next to the HWT setts to serve as controls. Two reference varieties were included in each experiment: (i) NCo376, which generally germinates well (73%) after HWT, and (ii) N12, which tends to germinate poorly (60%). The date of germination was recorded for each bud to determine germination rates, and the final percentage germination was recorded after 22 days. Varieties N12, N42 (59%), N47 (56%) and N50 (40%) did not germinate well after HWT, whereas varieties N24, N31, N32, N51, N52, 98B0460 and 99F3575 showed an increase in the percentage and rate of germination after HWT. The germination performance of the other varieties after HWT was similar to the controls. The information from this research will be of value to managers of seedcane schemes and farm nurseries when determining the quantity of seedcane required to establish new seed beds.

Keywords: sugarcane, seedcane, germination, ratoon stunting disease (RSD), hot water treatment, HWT, setts