

## POSTER SUMMARY

**PRELIMINARY ASSESSMENT OF SELECTED  
SOUTH AFRICAN BALL-MILLED SLURRIES**

MADHO S AND RAHIMAN SN

*Sugar Milling Research Institute NPC, c/o University of KwaZulu-Natal,  
Howard College Campus, Durban, 4041, South Africa  
[smadho@smri.org](mailto:smadho@smri.org) [srahiman@smri.org](mailto:srahiman@smri.org)*

**Abstract**

This poster paper reports on the progress made with assessing selected South African ball-milled slurries to assist in the choice of a slurry preparation method for southern African mills to follow.

Some laboratory crystallisation tests were performed on slurries of varying quality and assessed using median sizes, size coefficients of variance and crystal densities from an image analysis technique. The slurry crystals were grown at a constant temperature in the metastable zone of supersaturation and their growth properties determined. Also reported on is the large extent of dissolution of the crystals that occurred. Up to 70% of the original crystals introduced dissolved within the first 15 minutes of the tests, suggesting that slurry crystals below sizes 10-12  $\mu\text{m}$  (from a cumulative size distribution) dissolve readily under typical panboiling conditions.

Stained slurry crystals were also used in the isothermal tests to show the extent of false nucleation that had occurred. Further to this, some factory tests with the stained slurries were performed to quantify the extent of 'true seeding' that occurs with ball-milled slurry graining.

*Keywords:* slurry, crystallisation, nucleation, panboiling, coefficient of variance, CV, median