POSTER SUMMARY

IDENTIFICATION OF COLOURANT TYPES PRESENT IN SUGARCANE PROCESSING STREAMS

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One of the quality specifications of raw sugar is ICUMSA 420 colour, which is typically measured spectrophotometrically as the total absorbance of light at 420 nm wavelength by all compounds present in the sample. Although this measurement is useful for determining colour levels of different factory streams, it does not discriminate between the types of colourants contributing to the total colour measured. Over the past few decades, most of the sugarcane colour research conducted worldwide has been related to how the overall ICUMSA 420 colour of raw sugar can be reduced by applying decolourisation techniques. In contrast, identifying and characterising colourants, their effect on the ICUMSA 420 colour value and their mechanisms of formation and removal has been less well researched. The development and application of colourant analytical methods would contribute to a more robust understanding of the behaviour of colourants in sugarcane processing, which could assist factory personnel in understanding and devising strategies for managing and mitigating colour formation in sugarcane factories.

This poster introduces an exploratory research project that is being undertaken by the Sugar Milling Research Institute NPC (SMRI) to provide fundamental knowledge and insight into the nature, origin and likely fate of colourants present in sugarcane factory streams. This project aims to develop rapid and economical methods for the analysis of colourant types. Spectroscopic techniques are being used to analyse a variety of raw factory streams and this poster presents the preliminary results obtained. The results suggest that there might be potential in using spectroscopy as a practical analysis method for determining the contributions of different classes of colourant compounds.

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