Abstract No. 8

PaperTitle # Determination of Available Lysine in Sorghum with the TNBS Method

Main Author **D'Silva Tanya Miss** **Presentor** **D'Silva Tanya Miss**

University of Pretoria Department of Food Science Prertoria SOUTH AFRICA s23092999@tuks.co.za

Co-Authors

ABSTRACT

Trinitrobenzene Sulfonic Acid (TNBS) can be used as a chromophoric agent in the quantitative determination of available lysine in sorghum and sorghum products, due to its ability to bind with the free amino group of the lysine molecule. The concentration of ε-TNP-lysine is then determined spectrophotometrically. It is also a relatively quick method in comparison to other methods. The use of TNBS to determine available lysine in sorghum has not been reported. The TNBS assay showed good precision with the reference sample, BSA (Bovine Serum Albumin). Sorghum, NK 8828, contained 43.13 g available lysine per kg protein when raw. This value decreased to 28.71 g/kg protein when cooked possibly because of the Maillard reaction. Malting increased available lysine to 68.16 g/kg protein because of protein breakdown by endogenous enzymes to produce free lysine. The values for available lysine in sorghum were higher than literature values suggesting that the assay overestimated available lysine. In addition, a high coefficient of variation was observed with sorghum data. These may suggest possible interference of other compounds, such as phenolics or lipids in the assay. Although TNBS procedure shows potential to determine available lysine, further research is required for refining the procedure for sorghum.

Publication Date: 07 May 2007