

Optimization of the Enzymatic Banana Juice Extraction Process in Wine Cottage Industries



Banana is one of the main food crops grown in Uganda and ranks highest among farmers in south-western Uganda. Over 23% of arable land in Uganda is used for banana production, and over 75 % of farmlands in the south-western agro-ecological zone of Uganda is planted with banana. Over 8.8 million tons per year are produced by small-scale farmers and over 75% of the annual production is consumed locally. Banana being one of the main cash crops in the south-western agro-ecological zone, households engaged in its production earns about USD 1244 per annum.

Nonetheless, during the main harvesting period that coincides with the dry season 17-80 % of the harvested bananas deteriorate. Among the banana that go to waste 7.2 % and 7.7 % of the harvested bananas, either deteriorate completely or partially. During this time a big bunch that weighs over 25 kg is often sold at less than UGX 5,000 (USD 2.0), making farmers loose out in terms of household income. In recent years, consumption of natural banana fruit juices and wines, as alternatives to the traditional caffeine-containing beverages, carbonated drinks and other beers is progressively becoming popular among Ugandan population. Due to high demand, imports of banana juices and wines, far exceeds the locally produced extracted banana juices and wines on the market. This is because banana juice and wines in Uganda are mainly produced in cottages with low efficient methods such as boiling, hand squeezing among others. This makes the locally produced banana juices and wines to have low quality and therefore less competitive on open markets.

This project has conducted research and identified optimum conditions of using enzymes for efficient banana juice extraction. It is envisaged that banana juice cottages have high potential to improve the quality of banana juice through use of enzymes. Use of enzymes for banana juice reduces labor, fuel, and it is clean, which reduces respiratory health hazards.

