TITLE: IMPACT OF TIME BETWEEN HARVEST AND PROCESSING IN SUGARCANE JUICE QUALITY AND EFFECT OF OZONE IN BACTERIAL CONTROL OF DETERIORATED JUICE

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ABSTRACT:

Since sugarcane is cut, it is subject to deterioration by microorganism activity and results in the loss of sugars and the formation of unwanted impurities. The soil and air microorganisms contaminate sugarcane juice and the exposed surfaces, being able to produce as dextran, ethanol, oligosaccharides and organic acids products through the consumption of sugar. The accumulation of dextran causes many processing problems, including loss of yield, poor recovery, increased viscosity and purity of molasses, difficulties in filtration and crystal distortion. Ozone has been widely used as a disinfectant agent acting on a wide variety of organisms such as bacteria, viruses and protozoa, with the aim of inactivating microorganisms, increasing the shelf-life of food products and sanitizing equipment and surfaces. The objective of this study was to evaluate the influence of the time between harvest and sugarcane processing (0, 24, 48 e 72 h) on the quality parameters of sugarcane juice (sucrose, reducing sugars, dextran content and total bacteria) and evaluate the effect of ozone on the microorganisms present in the deteriorated juice (after 72h). With regard to sugars, there was a reduction of the apparent sucrose content and an increase in the reducing sugars content during the 72 hours, which the sugarcane waited to be processed after the harvest. There was a increase of seventeen times in dextran content in the juice after 24 h of the harvest in relation to the sugarcane juice processed immediately after the cut. There was also an increase in total bacteria with the increase in the time between harvesting and processing. The juice after 72 h of harvest was treated with ozone for 180 minutes, and the sample was collected each 60 min. After 60 min, there was a significant reduction in the amount of total bacteria present in the juice. However, between 60 and 180 min, there was no significant statistical difference in reduction of total bactéria with the increase of the exposure time of the juice to the ozone. Ozone was efficient in reducing the bacterial contamination of the juice and could be considered an alternative for the treatment of the must for fermentation.

Keywords: Dextran; Sucrose; Ozonation; Bacteria

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