

EFFECT OF DEHYDRATION PROCESS IN MANGO ADDING FRUCTANS AS OSMOTIC AGENT

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Introduction. Fresh mango (*Mangifera indica*) var. Tommy Atkins has a short shelf life, compared with other varieties. It's important looking for new alternatives to develop products with high added value. Minimal processed products of mango produced by osmotic dehydration (OD) mainly have been developed by controlling temperature and concentration of osmotic solution. Fructan, a polysaccharide considered as a functional ingredient [3] could be used as an osmotic agent.

The aim of this study was to evaluate the changes presented in the OD process using combinations by fructans as osmotic agent with a mixture of sucrose and maltodextrine.

Methods. Fresh mangoes (*Mangifera indica*) var. Tommy Atkins were bought in local market in Guadalajara, Mexico. Fruits were selected by color [2]. The syrups were prepared with mixture of sucrose, fructans and maltodextrine between 45 – 55% total solids. The process of osmotic dehydration was carried out [1] followed by air drying at 60 °C. The effect of fructans was determined using a Box-Benken design (Data not shown). The response variables were moisture, water activity (A_w) and percentage of acidity (citric acid). The presence of fructans was determined by a thin layer chromatography (TLC).

Results and discussion. The influence of low concentration of the osmotic solution and temperatures allowed reducing the activity water. (Fig. 1).

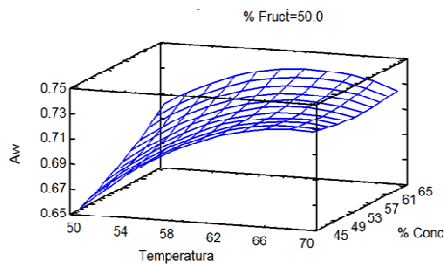


Fig. 1. Response surface generated for Activity water.

The influence of low temperature and concentration of the osmotic solution to reduce the moisture (Fig. 2).

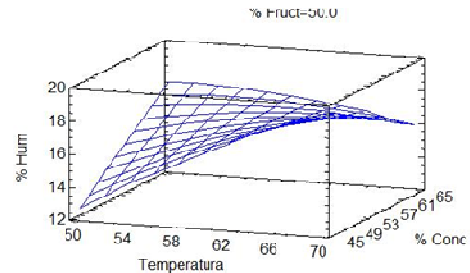


Fig. 2. Response surface generated for Moisture.

It was performed TLC to observe the presence of fructans in dehydrated mango. Six treatments were selected to improve the appearance, flavor and texture, because of the presence of fructans was important. It's necessary to consider the final form would have the dehydrated product because could be affected the process conditions.

Conclusions. The results allowed determining process conditions for obtain products high in fructans with low temperatures (60 – 65 °C) in osmotic process and syrups with 50 – 60% total solids.

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