THE SUPERIOR CAPITALIZATION OF STRAWBERRIES BY FREEZING THEM IN A FLUIDIZED LAYER

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INTRODUCTION

The superior capitalization of agricultural products by using the freezing in fluidized layer represents an essential element in the cold and air-conditioning technique in the food industry because each particle comes into direct contact with the cold air with its entire outer surface, thus obtaining a quick individual freezing process.

The fluidization state is obtained by the insufflation of the ascending cold air stream through the layer of strawberries at a certain speed which depends on the Froude criterion as well as at an air pressure difference when going through the layer.

The stages of the fluidization state according to the pressure difference and the cold air speed are represented in figure 1, as follows: a) fluidization in steady layer, b) incipient fluidization and c) unhomogenous fluidization.

Fig.1. a) fluidization in steady layer, b) incipient fluidization and c) unhomogenous fluidization.

MATERIAL AND METHOD

The varieties of strawberries that are used: Senga, Sengana, Talisman, Gorella, Pokahonatas, Red Gauntlet.

The laboratory installation for freezing by fluidization(fig. 2).

Fig.2. The laboratory Installation
RESULTS AND DISCUSSION

\[ Fr = \frac{w^2}{d_\nu \cdot g} \]

Fig.3. The variation of the freezing speed in steady and unhomogenous layer

The fluidization freezing speed has a great influence on the mechanism of the formation of the ice crystals and in the end on the quality of the defrosted product offered to consumption.

CONCLUSIONS

The result of freezing in fluidized layer is that there are obtained strawberries of superior quality whose nutritive value and organoleptic properties have not been modified during the storage in frozen form.

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