QUALITY AND CRYORESISTANCE OF FROZEN STRAWBERRIES PRETREATED IN THE SOLUTIONS WITH STRUCTURE-MAINTAINING PROPERTIES

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The quality of frozen Dukat strawberries pretreated in the solutions with structure-retentive properties was studied: 1,2 and 3% solution of potato starch and 1 and 2% sugar-pectin solutions. The quality was estimated by organoleptic indicators, mass changes and their cryoresistance, which was determined by the difference of frozen and defrosted berries and expressed in terms of percents to fresh berry mass.

It was established that the treatment of berries in structure-retentive solutions favored considerable preservation of mechanical berry firmness, and it resulted in the increase of consistency rating by 0,2–0,8 points compared with the control. The use of sugar-pectin solutions had a positive effect on a strawberry color. With the mentioned treatment berries preserved an attractive red color and had a shining glossy surface. The total organoleptic rating of frozen berries was increased by 0,6 point.

While freezing strawberries their mass losses appeared to be at the level of 2–3,6% of the initial one. Pretreatment of berries in structure-retentive solutions facilitated the decrease of berry mass by 0,9–1,6% which was due to the formation of a protective layer on a berry surface. After three-month storage in plastic bags the losses were 0,1–1,2%. The berries which were frozen without pretreatment had a much higher indicator of mass loss.

It was proved that the berries, pretreated in structure-retentive solutions, had cryoresistance which exceeded the control by 0,4–2,5%. The berries which were pretreated in 2% sugar-pectin solution had much higher cryoresistance than others, namely 98,3%. Cryoresistance gradually decreased during the storage of frozen strawberries.

2% sugar-pectin solution appeared to be very efficient for pretreatment of berries before freezing.

Keywords: freezing, strawberry, solution, cryoresistance, weight loss.