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#71687

USE OF MEDIUM AND HIGH DOSES OF IONIZING RADIATION IN CASSAVA STARCH.



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Cassava starch is susceptible to microbial changes, which can affect its shelf life. Ionizing radiation is used in doses sufficient to reduce microorganisms. However, when being exposed to starch granule it can cause changes in structure when compared to other methods. The aim of the work was to irradiate starches with medium and high doses in order to observe the effects on color of cassava starch and texture of tapioca. The starch samples were purchased in supermarkets in two types: starches with preservative (Fc – sodium metabisulphite) and starch without preservative (Fs). They were then irradiated at doses of 0, 5, 10 and 15 kGy in a 60Co Gamma cell 220 with dose rate of 0.764kGy/h-1. Subsequently, the samples were evaluated on 1st, 15th and 30th day after irradiation. The results show that in relation to the tonality (h°) there was a significant difference ($P > 0.05$) between the control and the irradiated samples on the 30th day. It's worth mentioning that, Fc and Fs had similar behavior at dose of 10 kGy, showing averages nearly $h = 90^\circ$ (Fs: $90.6 \pm 0,4$; $90.0 \pm 0,3$; $90.4 \pm 0,50$ and Fc: $90.5 \pm 0,3$; $89.9 \pm 1,6$; $89,5 \pm 2,9$ on the 1st, 15th and 30th day, respectively) indicating that the samples turned yellowed according to storage days. This tendency towards the yellow color can be attributed to the modification of reactions of the starch monosaccharide's. The radiation can influence the rupture of surface the starch. For this reason, the tapioca showed increase in hardness (N) according to the increase of radiation dose as well as with storage days. However, on the 30th day, Fc showed no significant difference between doses of 5kGy (10.06); 10kGy (11.44) and 15kGy (11.67). The analysis of the results allows concluding that in this product it's possible use doses up to 10kGy because not change considerably the parameters studied.

Presentation Type

Pôster

Institutions

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Track

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