

SOME BIOCHEMICAL EFFECTS OF GAMMA RADIATION ON POTATO TUBERS

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Ionizing radiation can be used for food preservation in many ways, among them sprout inhibition in onion, garlic and potato. Because of the extremely low level of chemical changes resulting from irradiation it is difficult to differentiate between irradiated and non-irradiated foodstuffs. In order to investigate the metabolic processes which bring about sprout inhibition, the changes in soluble carbohydrates as a function of time and radiation dose are of great importance. There are several methods described in the literature for colorimetric estimation of reducing sugars in food products. Triphenyltetrazolium chloride is used in analytical chemistry as a sensitive reagent for reducing sugars and to distinguish between alpha-ketols and simple aldehydes. It is also a germination indicator in testing the ability of seeds to germinate. The estimation of reducing sugars in potatoes with 3,5-dinitrosalicylic acid was considered by some authors to be more reliable than other methods since there is negligible reaction with starch and no inversion of sucrose occurred. This paper describes the application of both methods for the estimation of reducing