EFFICACY OF WILTING DEGREE ON PHYSIOCHEMICAL TRAITS AND SUGAR PROCESSING PARAMETERS OF SUGAR BEET ROOTS POSTHARVEST

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Abstract:

Under Egypt conditions sugar beet roots is processed in the factories during the period from the first week of February to Mid of June every year. Whenever, wilting of beet roots carried out at high temperature and low humidity for any cause, which are prevailing during the period from the end of April to Mid of June. So, this work was carried out at laboratories of Delta Sugar Company, Kafr El-Sheikh Governorate, Egypt, as well as Food Science and Technology Department, Faculty of Agriculture, New Valley Branch, Assuit University during 2017 working season for eight days and replicated four times during the period from 25th April to 6th June.to identify the influencing of wilting degree (the loss% in moisture content of beet roots) postharvest on physiochemical traits, impurities contents and processing efficiency parameters of sugar beet roots. The obtained results revealed that wilting degree of beet root had a significant effect on physical properties of sugar beet juice expressed as total soluble solids %(TSS%), pH value, bulk density (kg/m3) and color of raw juice (Icumsa units); impurities contents of sugar beet,i.e. ramework, K and Na(millieq./100g), and chemical composition of sugar beet roots ,i.e. pol %, reducing sugars% and dextran content as well as processing efficiency parameters of sugar beet roots, i.e. juice purity%, sucrose recovery %, sugar losses% in waste, quality index of beet roots and weight losses % of beet roots. We hope that the above-mentioned results in this work would help understand the changes which take place in sugar beet roots postharvest caused by the wilting, which cause significant economic losses in sugar production and to know the practices that reduce sugar loss during processing. Here, we demonstrate that all sugar beet growers and the processors benefit directly when postharvest losses are minimized. The increase in wilting degree of beet roots means make them lose their refreshment and affect negatively sugar extraction during manufacturing in sugar factories.

Keywords:

Sugar beet, pol %, wilting , SR%, Quality index, TSS% and ramework

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