

6.10 AGHAEI, M.¹, M. HONARVAR^{1*}, M. MIZANI¹, AND M. BAZRAFSHAN²

¹ Islamic Azad University, Science and Research Branch, IRN – Tehran, 1477893855

² Fars Agricultural and Natural Resource Research Center, Zarqan, IRN – Fars, 7341653112.

CHANGES IN TECHNOLOGICAL QUALITY OF SUGAR BEET (*BETA VULGARIS L.*) DURING ITS HARVEST AND LONG-TERM STORAGE IN FARS, IRAN

ABSTRACT

In Iran, sugar beet is purchased based on sugar content and fresh root weight. Due to the low capacities of sugar factories in Iran, and the farmers' rush to plant wheat, the harvested roots are kept in the farm silos nearby. Root storage near the farms under dry and semi-dry climate conditions would further dry the roots, and causes errors in the polarimetric method. The aim of this study, the effect of storage time (at harvest time, and at four subsequent one week intervals) and two sugar cultivars (Rosire from Florimond Desprez and Isella from KWS) was studied using factorial experiment with randomized complete block design. The results obtained showed that storage time had a significant effect on sugar content (SC), dry matter (DM), sodium (Na), potassium (K), amino-N (N), white sugar content (WSC), and molasses sugar (MS) for two cultivars. With increase in the period of root storage up to two weeks, SC, DM, WSC, Na, K, and N increased significantly due to moisture loss and dehydration. However, storage periods of up to three and four weeks decreased these variables due to decrease in temperature, rainfall occurrence, and increase in the relative humidity, and thus increase in the amount of moisture in roots. In general, sugar beet storage causes dehydration of their roots, and reduces their technological quality. Therefore, it is necessary to harvest sugar beet according to a scheduled program, and the carrying capacity of the factory.
