

MARTIN, SUSAN S. USDA, Agricultural Research Service, 1701 Center Avenue, Fort Collins CO 80526. - Sugarbeet organic acids: distribution and post-harvest changes.

Organic acids, some important intermediary metabolites and others characteristically accumulated by sugarbeet (*Beta vulgaris* L.), comprise about one-fifth of the non-sucrose components of typical sugarbeet extracts. I report the distribution of the major organic acids in the roots and peel (surface layers) of four diverse sugarbeet cultivars, and their changes through eight weeks of high-quality storage at 4°C. Aqueous extracts of frozen tissue were analyzed by HPLC on an HPX-87H ion exclusion column (4.6 X 300 mm) at 60°C, eluting with 0.01N H<sub>2</sub>SO<sub>4</sub> at 0.5 ml/min; organic acids were detected by UV absorbance at 220 nm. Major organic acids present at harvest were oxalic, citric, malic, and succinic. Lactic, formic, and acetic acids, which can accumulate during storage as a result of monosaccharide degradation, remained at trace or very low concentrations under the constant-temperature, high quality storage used for this study. Pyrrolidone carboxylic was present at low levels at harvest and increased slightly in storage. Per gram of sucrose, the sugarbeet peel contains about 5X-10X the organic acid concentration of the whole root. The relative importance of each of these compound as an impurity in processing is related to the solubility of its calcium salt, which determines the effectiveness of removal by liming.