POTATO QUALITY ATTRIBUTES IN RELATION TO POST HARVEST TUBER PHYSIOLOGY

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Abstract. Consumers are interested in high quality ware potatoes all over the year. Therefore, farmers and traders are requested to preserve the original quality from harvest time as long as possible. Doing this, potato aspects themselves (biochemistry of different genotypes) as well as storage conditions (Temperature, Humidity, Sprout protection) are important tools.

Numerous experiments have already shown that respiration and the antioxidant umbrella have an major impact upon single constituents.

In a trial with 12 varieties for fresh consumption or processing with a broad range of utilization quality two storage regimes were carried out at 4 and 8 °C, respectively. Specific parameters (sugars, starch, glycoalkaloids, cell wall compounds) were analyzed in the edible parts of tubers to follow any changes during post-harvest period.

Thereby, five sampling dates were set during storage from November to April. Most quality parameters altered during storage, but there was also high variety specificity. Dry matter increase could be related due to respiration, but cold stored tubers had slightly higher values than warm stored ones. However, maximum value was at a warm stored sample. With respect to the close relationship between dry matter and starch content, the latter compounds followed dry matter results. Within the set of samples, table potatoes indicated high levels of glucose and fructose independent to storage regime. Parallel to that, sucrose concentration was relatively low. In processing potatoes the relationship was opposite. Low levels of reducing sugars faced higher concentrations of sucrose.

Despite of the high glycoalkaloid concentrations in the outer tuber parts, individual levels had a high heterogeneity indicating a genetic variability.

Otherwise, cell wall content was only slightly affected, whereas pectin content and esterification had more pronounced changes during storage and between genotypes.

Summarizing, individual quality profiles of table potatoes and processing varieties changed during storage, but degrees were different pointing out genotypic features.

Key words: *Potato, Variety, Storage, Quality*