

Summary of Research Progress for 1990

Submitted To: SLVRC (Colorado Potato Administrative Committee)

Title: Potato Processing Committee Storage Study

Principal Investigator: Joseph A. Maga, Department of Food Science and Human Nutrition, Colorado State University, Fort Collins, CO 80523 (303) 491-6705

Project Justification: Potato processors require high solids, low total and reducing sugars. Factors that significantly influence these properties include cultivar, location of growth, production practices and post-harvest storage conditions. Therefore, a study was designed whereby four cultivars (Centennial Russet, Russet Burbank, Russet Norkotah, Russet Nugget) each grown at five different locations in the Valley were placed at either 40 or 45°F and analyzed for percent solids, total sugars, and sucrose, fructose and glucose after 0, 2, 4, 6, 8 and 12 weeks of storage.

Project Status: New for 1990

Significant Accomplishments for 1990: Data demonstrated that percent solids did not vary significantly as influenced by storage time or temperature. However, cultivars and location did significantly influence solids. R. Nugget had the highest average solids (23.4%) followed by C. Russet (21.4%), R. Burbank (21.2%) and R. Norkotah (19.7%). Total sugars were found to increase with time with the lower storage temperature (40°F) having higher levels than 45°F. All cultivars had similar levels and location differences were apparent. Sucrose decreased with time as glucose increased. SLV potatoes had high solids but were high in total reducing sugars.

Objectives for 1991: Since solids and sugars can vary from year to year, it is proposed to repeat the study in 1991 perhaps looking at a wider range of storage temperatures and better control of the conditioning period immediately after harvest.

Funding Request: 1990 Allocation: 0

1991 Request: \$500

Supplies/Reagents	\$400
Data Evaluation	<u>100</u>
Total	<u>\$500</u>