

**SUMMARY RESEARCH PROGRESS REPORT FOR 1994
AND RESEARCH PROPOSAL FOR 1995**

Submitted to:

**SLV Research Center Committee
and the
Colorado Potato Administrative Committee (Area II)**

TITLE: 1994 Potato Quality and Flavor Evaluations

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PROJECT JUSTIFICATION: The screening of potential new potato lines is an important consideration in order to characterize and quantitate various nutritional, safety factors, functional, and sensory properties associated with potatoes that are important both to the processor and final consumer.

SIGNIFICANT ACCOMPLISHMENTS FOR 1994: A total of 25 potato lines, including seven named lines, grown by the SLVRC in 1994 were evaluated for percent solids, degree of enzymatic browning potential, total glycoalkaloids, vitamin c, percent protein, subjective baked flavor properties, and baked diacetyl content. Total solids was found to range from a low of 17.3% (AC83068-1) to a high of 22.8% (Russet Nugget). Several lines were identified (AC83064-1, CO84074-2) that exhibited very low levels of raw enzymatic browning. All lines had similar levels of total glycoalkaloids ranging from a low of 7.3mg/100g FWB (BC0894-2) to a high of 11.3mg (AC83064-6). Vitamin C levels ranged from 41mg/100g FWB (CO84074-2) to 62mg (CO86030-1). Percent protein, on a dry weight basis, was found to range from 8.4% (AC83064-6) to 12.9% (CO 86142-3). The vast majority of the lines evaluated had very good baked flavor properties. A buttery baked potato smell was subjectively noted in two line (AC83064-1, AC83306-1). Subsequent analysis revealed that the compound responsible was diacetyl. Diacetyl levels were quantitated in all lines and was found to range from a low of 12mg/100g to a high of 58mg/100g. The subjective and objective baked potato flavor data correlated quite well.

OBJECTIVES FOR 1995: Continue to monitor compositional differences among promising new potato line as compared to traditional lines, and continue to identify key volatile compounds that make a positive contribution to baked potato flavor.

FUNDING REQUEST: 1994 Allocation: \$3,500; 1995 Request: \$3,500