

**SUMMARY RESEARCH PROGRESS REPORT FOR 1990
AND RESEARCH PROPOSAL FOR 1991**

Submitted to:
SLV Research Center Committee
and the
Colorado Potato Administrative Committee (Area II)

TITLE: Evaluation of Advanced Clones for Bacterial Ring Rot Expression

PROJECT LEADER: Robert D. Davidson (Dr. Gary Franc 1990)

PROJECT JUSTIFICATION: Bacterial ring rot is a significant problem in the San Luis Valley to both seed producers and commercial growers. The Valley has a unique environment which can influence the degree of bacterial ring rot symptom development seen in the crop. In addition, cultivars will vary in their expression of bacterial ring rot. There is the possibility of releasing a cultivar which may have characteristics coupled with the SLV environmental factors that limit the visual symptom development to ring rot in the field. This could potentially expose ring rot free stocks to an undetected source of inoculum. Therefore, it is important to know the response of advanced clones to infection by bacterial ring rot before they are released to potato growers. This information will be generated early in the clone's development for consideration prior to the clones release and eventual naming.

PROJECT STATUS: This is a continuing project that has been funded for the past several years. Each advanced clone usually receives 3 years of testing prior to release.

SIGNIFICANT ACCOMPLISHMENTS FOR 1990: Of the thirteen clones evaluated for bacterial ring rot symptoms, only one demonstrated serious problems for expression both in the foliage and in the tubers. This clone, C079018-11, was among those that demonstrated late symptom development in 1988, 89 and 90, had a low percentage of plants showing foliage symptoms, 6.3% in 1988, 4.8% in 1989 and 14.3% in 1990 and consistently exhibited poor tuber symptoms. Because of this and other considerations, it was dropped for release to growers in 1990. All other clones fell within the range of acceptability for symptom development for this year.

OBJECTIVES FOR 1991: Fifteen to twenty advanced clones from the Colorado Cultivar Development program will be inoculated and evaluated in the field in the San Luis Valley. Clones will be at various stages of the evaluation process.

Pathogenicity tests will be conducted at three locations using marked strains of BRR developed in Dr. Ishimaru's lab. Locations will be in Laramie, Wyo., Weld County, Co. and the San Luis Valley. In addition, two inoculation methods using different bacterial sources (tubers vs. freeze dried strains) will be compared with current protocol. This request is for this year only.

FUNDING REQUEST:

1990 Allocation:	\$2400.00	
1991 Request:	\$2400.00	
	<u>\$1000.00</u>	(Pathogenicity/inoculation studies)
Total request:	\$3400.00	