

RESEARCH PROPOSAL FOR 2001

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

TITLE: Utilization of Compost Made from Agricultural and Forestry Wastes for Improving the Economic and Ecological Sustainability of Agronomic Crop Production on Low Organic Matter Soils in the San Luis Valley of Colorado.

PROJECT LEADERS: Richard Zink, Merlin Dillon and Susie Thompson, CSU

PROJECT JUSTIFICATION:

The main objective of this SARE proposal is to improve water conservation and the sustainability of agronomic crop production on the low organic matter soils of the San Luis Valley (SLV) of Colorado. Through on-farm demonstrations this project will examine the impact field incorporating compost made from agricultural and forestry wastes has on: 1) the potential for reducing the use of synthetic fertilizers and fungicides, by improving nutrient retention in the root zone and the health and diversity of the soil's biomass, 2) the potential for improving water utilization and thereby reducing water and power use in center-pivot irrigation systems; 3) crop yields and costs of production for potatoes, barley and alfalfa.

The objectives of this project are to develop local end markets for agricultural and forestry wastes while improving the sustainability of agronomic crop production in the San Luis Valley by demonstrating the impact compost applications have in typical cropping rotations of potatoes/barley, and continuous alfalfa. The project will examine and report on changes in the diversity of the soil's microbiology and biomass, disease levels in the crops, use of fertilizers and pesticides, water utilization, nutrient retention in the root zone and net economic value of compost applications.

Results will be disseminated to farmers in the SLV to encourage the adoption of applying compost to low organic matter soils. Field tours will be given. Results will be presented at CSU's Forage & Livestock Conference and Potato-Grain Conference. Following years two and three summary bulletins will be developed and mailed to SLV producers and be posted on the CSU Website. Articles on the results will also be printed in the *Spud Items* newsletter of the Colorado Potato Administrative Committee.

PROJECT STATUS: New.

OBJECTIVES FOR 2001: Establish compost study at four sites. See WSARE Grant for details.

FUNDING REQUEST:

2001 Request: \$5,000