

Summary of Results for Foliar Fungicide Trials, 2001

Thanks to the generous support of the Colorado Potato Administrative Committee (Area II) and several agricultural companies, full season comprehensive fungicide efficacy trials were conducted this past summer at the San Luis Valley Research Center (see protocol). Over the course of the growing season twenty three different fungicide programs were assessed for blight control (Table 1). The trials depended on natural infection, early blight (*Alternaria solani*) developed within the trial, however, late blight (*Phytophthora infestans*) did not.

The incidence of early blight within the trials was natural and similar to what occurred in commercial potato production across the San Luis Valley. At the time of final disease readings on September 7, early blight incidence had reached 100 percent in the untreated control. AUDPC values provide clear separation among fungicide programs. In general, disease suppression by fungicide program can be grouped into four categories. Early blight disease development was significantly reduced by all treatments over the untreated control. Treatments 2, 3, 16, 17, 18, 20, and 21 reduced disease by less than 25%. Treatments 4, 5, 7, 19, and 22 reduced disease from 25-40%. Treatments 6, 8, 9, and 20 reduced disease from 40-70%. Treatments 10, 11, 12, 13, 14, 15, and 23 reduced disease incidence by more than 70%. In general the highest degree of early blight control was achieved in programs where Quadris was utilized (Table 2). Post harvest evaluation of tubers however, showed that in this study foliar applications of Quadris did not reduce the incidence of black scurf on tubers (Table 4).

Suppression of foliar early blight did not, however, translate directly to increased tuber yields (Table 3). The lack of effect of fungicide program on yield is common in small replicated trials. This is likely due to the late onset of disease and the long season cultivar Russet Nugget. Early blight is a disease of senescence and generally has a much greater impact on an early maturing cultivar such as Russet Norkotah. Russet Nugget was selected for these trials in anticipation of late blight developing some time in August. Had this been the situation, Russet Nugget would have provided an additional three to four week period for fungicide program evaluation.