Objective:

The purpose of this study was to separate out and study the effects of populations of broadleaf and grass weeds on potato development.

Materials and Methods

Four treatments were included on two potato varieties, 1) mixed natural weed population - no weeding, 2) grass - yellow foxtail, 3) broadleaves - redroot pigweed, and 4) weed free. Treatments 2 and 3 were seeded with redroot pigweed and yellow foxtail after the last hilling when the potatoes were at crack. The weed free treatment was sprayed with a combination of Sencor and Dual. Because of the poor germination of the seeded weeds, the natural population of weeds was also utilized in the broadleaf and grass plots. The undesired weeds in these plots were removed chemically by spraying the broadleaf plots with Poast and the “grass only” plots were handweeded.

After sufficient development of the weeds and potatoes, measured areas in each plot were destructively harvested on a weekly schedule. Plots were of sufficient size to allow for at least eight of these mini-harvests and still have undisturbed rows of potatoes remaining at the end of the season for a normal potato harvest. From each harvest, fresh weights were recorded for both the potatoes and weeds and then the original samples were subsampled for dry weights and for chemical analysis. At the end of the season the plots were harvested and size graded.

Results

At the present time the 1996 results are being statistically analyzed and samples are being prepared for chemical analysis. Preliminary results of the yield data show that broadleaves and grasses have an equal detrimental affect on yield (Graph 1). Yield of 6-10 ounce ‘Russet Burbank’ tubers was significantly greater in the weed free treatment (Graph 2). Other size grades did not show this trend.