## EFTERCTS OF A FOLIAR APPLIED CYTOKININ ON SUGARREST

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Miller, Stephen D.\*, and K. James Fornstrom. Univ. of Wyo., Dept. Plant, Soil and Insect Sciences, Univ. Station Box 3354, Laramie, WY 82071. - Postemergence herbicide timing and combinations in sugarbeets.

Postemergence herbicide applications are becoming increasingly important in Wyoming sugarbeet weed management systems. Field trials were conducted at Torrington, Powell and Wheatland, WY from 1989-92 to evaluate the influence of application timing on weed control and sugarbeet tolerance with individual herbicides or combination treatments. Split treatments minimized sugarbeet injury and improved weed control in all situations. Two applications of desmedipham plus phenmedipham were generally as effective as three applications. DPX-66037 combinations with desmedipham plus phenmedipham provided more effective kochia, green foxtail, hairy nightshade or wild buckwheat control and clopyralid combinations with desmedipham plus phenmedipham more effective Russian thistle, hairy nightshade, wild buckwheat or common sunflower control compared to the herbicides applied alone with only minimal effects on sugarbeets. Further, ethofumesate combinations with desmedipham plus phenmedipham appear promising for increased control of several weed species; however, the risk of sugarbeet injury is also increased.

on root yield and/or sucrose concentration. TRIGGRR (Westbridge Agricultural Products, San Diego, CA) is a cytokinin containing plant prowib regulator produced by a propriety process unliking microbial fermentation. In world wide tests, it reportedly increased yields in 36 to 100% of the units, depending upon crop species. Increases were observed in 1 to 13 species examined. Among the responses observed were: increased root development, increased fruit size, increased sugar content, enumered stress tolerante, increased height and leaf area index, and increased photosynthesis (Salk and Parker, 1987; Parker and Salk, 1988).

This study examines the potential of TRIGGRR as a growth regulator for enhancing sugarbori productivity in the Red River Valley. Yield and storage characteristics were evaluated in a titree-year field trial.

## Materials and Methods

Field trials were conducted in Cars County, North Dakous in 1988, 1989, and 1990. Plots were established using conventional fillings practices and commercial hybrid seed. All plots consisted of six rows 9.1 m long and 56 cm apart. Within row spacing was 20 cm. The experimental design was a randomized complete block with five replications per year. The

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