

MILLER, STEPHEN\* and K. JAMES FORNSTROM. University of Wyoming Department of Plant, Soil and Insect Science, PO Box 3354, Laramie, WY 82071. - Postemergence Canada thistle and green foxtail control in sugarbeets.

A mixture of desmedipham plus phenmedipham is the most widely used postemergence herbicide in sugarbeets in Wyoming. However seedling grasses and Canada thistle are not effectively controlled with this treatment. Trials have been conducted at the Research and Extension Centers at Torrington and Powell, WY since 1985 to evaluate the efficacy of several postemergence weed management systems for control of these weed species in sugarbeets. Canada thistle control has been good (91 to 94%) with clopyralid at 0.19 lb/A and green foxtail control excellent (95 to 100%) with sethoxydim at 0.2 lb/A. Canada thistle control with clopyralid has been similar whether applied as a single or split treatment alone or in combination with desmedipham plus phenmedipham. Slight antagonism of foxtail control (5 to 8%) with sethoxydim has been observed on only a few occasions with combinations with desmedipham plus phenmedipham or clopyralid. Regression analysis has indicated sugarbeet yields are reduced 0.4 T/A ( $R^2 = 0.99$ ) and 0.2 T/A ( $R^2 = 0.92$ ) for each 1000 Canada thistle or green foxtail plants/A, respectively.

FORNSTROM, K. JAMES, \* STEPHEN D. MILLER, and JAMES M. KRALL. Univ. of Wyo., Agr. Engr. Dept., Univ. Station Box 3295, Laramie, WY 82071. - In furrow cover crops for sugarbeet protection from wind erosion.

This paper describes a sugarbeet production system which utilizes a cover crop as a living mulch for wind erosion protection during establishment. Type of cover crop, timing of cover crop and beet planting to provide erosion protection, and the timing of mulch removal to limit competition with sugarbeets were studied. Barley, oats, and winter wheat were planted and compared with no cover crop at Torrington, WY. Two rows of grain were planted in the furrow between sugarbeet rows. Sugarbeets were planted after the cover crop emerged and was later sprayed with sethoxydim. Two cover crops, four beet planting dates and three spray dates were compared in 1989. Sugarbeet populations were significantly influenced by all three factors. Delayed beet seeding and/or delayed mulch removal reduced soil moisture and limited sugarbeet emergence. Sugarbeet yields with a cover crop were equal to those with no cover crop if sugarbeets were planted and mulch removed at the correct time. In 1990, three cover crops were compared at one sugarbeet planting date and one spray date. Winter wheat reduced sugarbeet emergence yield when compared with barley or no cover crop. Relationships for barley dry matter and height as a function of heat units were developed. Planting beets when approximately 200 heat units have accumulated and spraying barley when approximately 400 heat units have accumulated will provide erosion protection without reducing sugarbeet population or yield.