WILSON, ROBERT G., University of Nebraska, 4502 Ave I, Scottsbluff, NE 69361. Glyphosate and glufosinate for weed control in sugarbeet.

Field experiments were conducted in 1999 and 2000 to examine the optimum weed size, number of applications of glyphosate or glufosinate required for weed control, and the yield potential of the two sugarbeet weed control programs. Glyphosate at 0.8 kg/ha or glufosinate at 0.4 kg/ha were applied either once, twice or three times beginning when average weed height was 2.5, 10, 15 or 25 cm. Two applications of glyphosate applied when average weed height was 10 cm or three applications of glufosinate applied when average weed height was 10 cm or three applications of glufosinate applied when average weed height was 2.5 cm provided excellent weed control. Sugarbeet sucrose yield with both weed control programs was near 11,000 kg/ha. Glufosinate weed control was influenced by humidity at the time of application, as percent humidity increased weed control from glufosinate increased. If weed control was delayed until average weed height was 15 or 25 cm sugarbeet root yield was reduced 8 and 18% respectively, because weeds competed with the crop.

recablish a wode ninge of plant pepulation can be realizated without the necessary of michagical cultivation.

Finals were conducted over a two-year period in sugarboei growing meas of Nebrashi, Noro Datenti and Oregon using gly/fishle resistant sugarboet. Sugarbeet was planted in 22 liph and 11 inch new widths and thinned to varying in-rew spacing to establish a range of plant population from 21,760 to 21,280 plants per sere. Olyfosate was applied for weed control two or three times at each location. These applications provided for excellent weed control. Other peakender was applied as recommended when needed in each growing area.

Root yord and extractable sucrose were measured at each location coch year. Roots were torvested from the center two rows of plots with 22 and true spacing and from the center there or four row of plats with 11 inch row spacing.

Reputse of these studies suggest that a combination of new specific and specific which the row have the greatest effect on sugar best vield and quality. Using a nerrow row spacing, which allowed for fastreneed in row plant spacing, resulted in an incorrect sugar moduction when compared to a vide row spacing with similar plant population. Maximum sugar production resulted with plant populations nerveen 15,040 and 47,520 plants per acru with an 11-outh rew spacing wrots all locations