

DOWNARD, ROBERT W.^{1*} and DAVID ELISON², ¹The Amalgamated Sugar Company, P. O. Box 127, Twin Falls, ID 83303-0127 and ²The Amalgamated Sugar Company, P.O. Box 700, Paul, ID 83347. **Strip tillage in sugarbeets.**

ABSTRACT

Controlling the movement of soil due to wind has been a problem for sugarbeet growers and is a major factor in sugarbeet stand loss in Idaho, Oregon and Washington. Strip tillage is a cultivation practice that can be used to properly prepare the soil while leaving enough crop residue to reduce the impact of wind on sugarbeet stand establishment. This practice has not been widely accepted for sugar beet production. Our objective was to see how this practice worked in sugarbeet production on a large scale.

The field was located in Dietrich, Idaho and the soil type was a sandy loam with a pH of 7.8, CEC of 13.1 and 1.01% organic matter. The field had previously been in silage corn and a shredder was used to size the remaining residue. The strip tillage machine used was a Schlagel Till and Plant 12 row machine and the planter was a John Deere MaxiEmerge II. We used sugarbeet variety Hilleshog 9008RR, which was treated with clothandin. At planting, 12 units nitrogen, 99 units of P₂O₅, and 13 units of sulfur were shanked 6 inches below the seed. An additional 150 units of nitrogen were added through the sprinkler. The row spacing was 22 inches with a seed spacing of 5.5 inches. It was planted on April 23 and 24. The field was treated for cutworm with zeta-cypermethrin on May 19 at 4 fluid ounces per acre. Glyphosate was applied on May 31 at 28 fluid ounces per acre plus 17 pounds of ammonium sulfate. The second application was done on June 24 at 22 fluid ounces per acre plus 17 pounds of ammonium sulfate. One cultivation was done on July 2.

Stand counts 26 days after planting on May 20 were 121 plants per 100 feet of row. Petioles were taken to monitor nitrate levels throughout the season. Nitrate levels started out high at 13,500 parts per million and dropped below 1,000 parts per million during the first part of August. This was not a concern because it resulted in lower impurities and good sugar content. The brie nitrate was 98 parts per million, sugar content 16.96% and conductivity 0.64. Stand counts at harvest were 126 plants per 100 feet of row. Sugarbeets were harvest on October 15-18 and October 20. This field had 1,003 pounds more recoverable sugar than last year, which had previously been the growers best crop. The yield results from strip tillage on this field indicate that it is a viable option for sugar beet production on a large scale.