Ridge Tilling

Enhanced Seedbed Preparation and Stand Establishment with Ridge Tilling

Growers using ridge tillage have increased revenue per acre by $34 versus conventional seedbed preparation. The value of ridge tilling has been documented in both wet and dry years, but is more fully realized in dry spring conditions.

Stand establishment and early planting are the two critical production practices that must be accomplished to maximize on-farm profit from sugarbeets. Using ridge tilling can help to achieve an ideal seedbed, tilled at a uniform depth, that ensures maximum seed to soil contact, conserves seed zone moisture, is well packed, not subject to blowing, and kills early season weeds.

Founded in Research

Dr. Joe Giles, NDSU Soil Scientist, evaluated this practice from 1988-94. Research objectives were to develop a stand establishment system that would increase the probability of successful stand establishment regardless of the weather. The goal was to develop a sugarbeet production practice system that would reduce fuel use, tillage costs, herbicide use, erosion and stand loss, and increase on-farm profit.

American Crystal ridge tilling acreage has increased from 10,750 in 2000 to 22,228 in 2004.

Ridge Tilling Advantages

- Increased revenue/acre by $34 from 2000-2004 across all factory districts, Figure 1
- Better moisture for stand establishment—6 to 10% increase over conventional seedbeds, Figure 2
- No wheel tracks across rows—planting into unworked soil
- Reduced erosion and better residue management
- More uniform emergence
- Potential reduced tillage and fuel savings
- Ability to plant all or part of a field at any time
- More rapid emergence
- Occasionally reduced weed pressure
- Works well for dry edible beans also

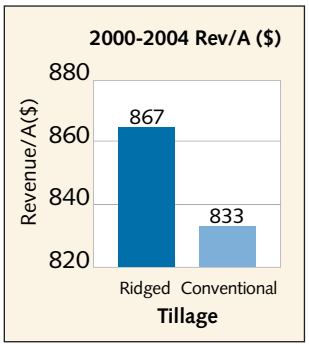

Figure 1

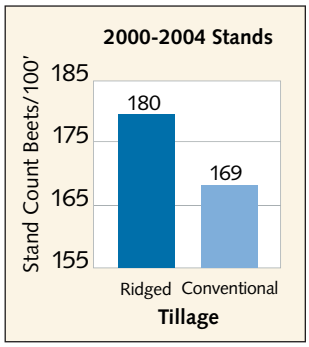

Figure 2

Ridge Tilling Requirements

- Specialized equipment may be necessary
- Ridging and de-ridging may require additional time than conventional tillage methods
- Center of ridge planting would be aided by RTK/GPS technology for the tractor

AG GOLD STANDARDS

YOUR WAY TO GROW

Special Equipment Required

- Tillage tool to build fall ridges
- Alloway manufactured
- Sukup manufactured
- Modifications to grower's own tillage equipment
- A tillage tool to deridge

Fall Ridging Preparation and Practices

- Soil sampling
- Primary tillage after preceding crop
- Fall fertilization and tillage to incorporate fertilizer and manage crop residue
- Optional tillage if needed to improve soil tilth and residue management
- A final pass to build ridges 5-7 inches high on 22 inch centers

Spring Deridging and Planting Practices:

- One pass with deridging equipment to remove 1-3 inches of soil from ridge peaks and deposit it between the row, Figure 4
- Plant on center of previous ridge, Figure 3
- Be sure seed furrow moisture is right to ensure furrow closure
- Ideal moisture may allow ¼" shallower seeding depth and quicker emergence, Figure 4

Figure 3: Planting after deridging

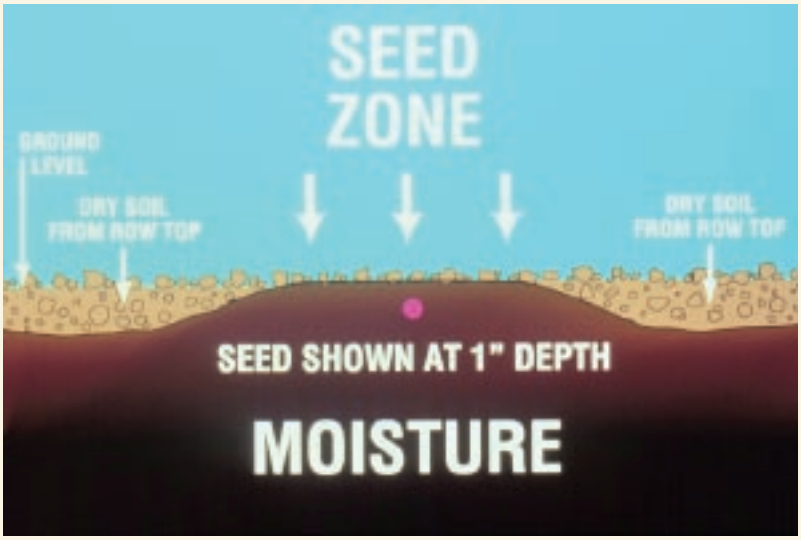

Figure 4: Diagram of a planted ridged field

For additional information contact your agriculturist or your university soils management specialist. See the 1990, 1991, 1993, and 1994 Sugarbeet Research & Extension reports at www.sbreb.org.

Web sites:
www.crystalsugar.com
www.precisionpartners.com

American Crystal Sugar Company