Side Dress Nitrogen

2015

Stewardship Team

Stewardship Team: Greg Richards, Curtis Funk, Darin Vettern, Josh Kritzberger, Andy Thompson, Cory Skaugé, Todd Cymbaluk
NITROGEN MANAGEMENT

• Current N recommendation
  – 4’ sample rec= 130 lb. residual soil N + applied
  – 2’ sample rec= 100 lb. residual soil N + applied
  • Minimum of 65 lb needed in top 2’

Is a 20 ton yield potential realistic anymore?

2012 season averaged 27.3 tons/Ac in RRV.
Fall Applied Nitrogen
2011 University of Minnesota (Smith, Cymbaluk)

Gross Revenue
($/A)

Total lb Nitrogen Per Acre

1463
1655
1748
1832
1777
1736
1702
NITROGEN PRACTICES

• Growers in some areas are increasing their Nitrogen Rates because of low yields.
• With VRT, zone sampling, areas of fields are receiving higher amounts of nitrogen. Up to 180lb N/Ac.
University of Minnesota
Dr. Albert Sims

Inverse Distance Weighting Interpolation of Total Nitrogen Use in Sugar Beet Production in 2006 and 2007

Legend
Total N (lbs. N/A)
- 80 - 115
- 115 - 125
- 125 - 135
- 135 - 150
- 150 - 180
Why Nitrogen Side Dressing?

• You maybe losing your nitrogen – losing $
  – Volatization – nitrogen disappearing into the air
  – Leaching – nitrogen moving out of the root zone
  – Denitrification – nitrogen being tied up in OM

• Better Utilization of your Nitrogen

• Higher yield goals with new Varieties

• Zone management, improving yield potential
Growers Considerations

• Past history - Your Sugar % and tonnage compared to the overall average with your district or area
• Long or short growing season
• Nitrogen loss
  – Standing water, wet saturated soil
  – Soil type
  – Fall or spring applied nitrogen
    • Soil temperature
“Any year with periods of saturated surface soils in the first 45 days after planting are subject to high levels of denitrification.”

Dr. Dave Franzen
NDSU Extension Soil Specialist
Nitrogen Side Dressing
2013 ACSC Stephen, MN
Side Dress Nitrogen

Field 1  Field 2  Field 3  Field 4  Field 5  Field 6  Field 7
No Added Nitrogen  N Side Dress

RSA (lbs/A)

Field 1: 7985  9295
Field 2: 8667  9335
Field 3: 7263  8392
Field 4: 6766  7586
Field 5: 8485  8277
Field 6: 9449  10866
Field 7: 7963  8972
Use the ACSC Side Dress Nitrogen Calculator

- Helps determine amount of nitrogen needed
  - Starts with your desired amount of nitrogen
  - Takes Field conditions into consideration
    - Coarse, Medium or Fine soil texture
    - Wet or Dry
  - Takes Agronomic practices into consideration
    - Planting Date
    - Plant populations
    - Fall vs Spring fertilizer application
## Nitrogen Sidedress Calculator

**Version 1.0.2**

| N Goal - Total lbs/acre Desired (Including Soil Test Residual N + Added Fertilizer N) | 130 |
| Soil Test Available Nitrogen * in lbs. Actual Nitrogen | 25 |
| Please Enter lbs/acre Nitrogen Applied * in lbs. Actual Nitrogen | 105 |
| Soil Texture | Fine |
| Date of Planting | April 1 - May 7 |
| Nitrogen Application / When Applied | Fall |
| Field Condition / Fall | Wet |
| Field Condition / Spring Prior to Planting | Wet |
| Field Condition / After Planting | Average |
| Growth Stage | Greater Than 8 Leaf |
| * Do not count cotyledons | |
| Plant Population (After Emergence) | Greater Than 200 |
| Recommended Sidedress Application Rate (lbs Actual N) | 75 |
Suggested Practices

• Fertilize in fall 80% of recommendation
  – Side Dress Nitrogen early spring
    • Long growing season side dress higher rate of Nitrogen
    • Short growing season side dress lower rate of Nitrogen
• Wet saturated areas of the field - side dress higher nitrogen rate
• Zones with higher yield potential - side dress higher rate of Nitrogen
Suggested Practices cont.

• Side Dress N based on plant population
  – Higher plant populations need higher rate of nitrogen
• Don’t Fall Fertilize fields with a coarse texture soil prone to flooding
• Soils wet in the fall use a Nitrification inhibitor
• Avoid prepile beets with side dress nitrogen
• Talk with your Agriculturist
Your Questions