Liqui Grow®
BALANCED FERTILIZERS

# Agronology Bulletin

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## Corn Fertility

Crop yields in 2012 were puzzling. Some of our corn yields were truly outstanding while some others were very low or zero. The corn crop experienced the following major events during the 2012 growing season:

a) Early dry soils which allowed huge temperature changes in the surface 4 inches of soil
b) Cold soils
c) Significant rain event(s) in early May that puddled the soil creating a crusted soil condition, prompting replanting
d) Lack of rainfall during the growing season
e) Lots of heat

In Table 1, we want to evaluate the impact that sulfur, zinc, and boron had on corn yields for 2011-2012. By investing in micro plus a sound N, P, K dribble program, net profits per acre can be enhanced an additional $40 per acre.

**Table 1** **Influence of Sulfur, Zinc and Boron on Corn Yields**

| Dribble P & K Program | 2011-12 Yield (Bu/A) | Harvest Moisture (%) | $/A for Micros Cost | $/A for Micros Net |
|---|---|---|---|---|
| 24-55-85 | 206.2 | 23.0 | ---- | ---- |
| 24-55-85-10s--.428zn | 210.3 | 22.3 | 10.06 | 16.59 |
| 24-55-85-10s-.428zn-.2B | 214.4 | 22.8 | 11.36 | 41.94 |

Soil Test P&K: Very High
Corn Price: $6.50/Bu
Source: Twin State, Inc.
Ag 10 Research Center, Walcott, IA

In this low testing P&K soil, 2011-2012 corn yields were dramatically affected resulting in a $46.00/A gross difference between the liquid and dry sourced fertilizer programs.

**Table 2** **Influence of P&K Sources on 2011-12 Corn Yields**

| Applied Fertility | Source | 2011 – 2012 Yield (Bu/A) | 2011 – 2012 Harvest Moisture (%) | Gross Profits Per Acre |
|---|---|---|---|---|
| 24-45-65-10s | Dry | 185.9 | 21.9 | ------- |
| 24-45-65-10s | Liquid | 193.0 | 22.0 | 46.15 |

Previous Crop: Soybeans
Soil Test P&K Values: Low
2011 Hybrid: Dekalb DKC 58-83 Gen VT3P
2012 Hybrid: Dekalb DKC 61-69 VT3
Source: Twin State, Inc.
Ag 10 Research Center
Walcott, IA

In this 3 year study, 2010 thru 2012, conducted on very high testing soils, the analysis of N-P-K applied did influence the yields and profitability per acre. I believe the new 220 bushel recommendations will be most profitable over time due to higher sulfur and zinc rates that are now recommended and the addition of B to this fertility program, see Table 4.

**Table 3** **Influence of N-P-K on 3 Year Corn Yields**

| Program Goal (Bu/A) | Applied Fertility | 2010-2012 Yield (Bu/A) | 2010-2012 Harvest Moisture (%) | $/A Fertility Cost | $/A Net |
|---|---|---|---|---|---|
| 160 | 24-40-55-10s-.428zn | 199.2 | 22.0 | 72.81 | ---- |
| 180 | 24-45-65-10s-.428zn | 204.4 | 22.5 | 79.50 | 27.11 |
| 200 | 24-50-75-10s-.428zn | 208.6 | 21.8 | 88.26 | 45.65 |
| 220 | 24-55-85-10s-.428zn | 204.5 | 22.1 | 96.98 | 10.28 |

Previous Crop: Soybeans
Corn Price: $6.50/Bu
Source: Twin State, Inc.
Ag 10 Research Center, Walcott, IA

Boron at small to modest rates is increasing our corn yields consistently and has a big influence on our per acre profitability as demonstrated in Table 4.

**Table 4** **Influence of Boron (B) on Corn Yields for 2010 - 2012**

| Applied Fertility (lbs/A) | 2010-2012 Yield (Bu/A) | 2010-2012 Harvest Moisture (%) | $/A Boron Cost | $/A Net |
|---|---|---|---|---|
| 24-55-85-10s-.428zn | 204.5 | 22.1 | ------ | ----- |
| 24-55-85-10s-.428zn-.2B | 207.7 | 22.1 | 1.30 | 19.50 |

Previous Crop: Soybeans
Corn Price: $6.50/Bu
Source: Twin State, Inc.
Ag 10 Research Center, Walcott, IA

The addition of Instinct® to our early June N application has increased yields by 6.6 Bu/A in our 3 year study. In 2012 we applied Instinct® at our early spring application (March) and again in early June. We harvested 8.1 Bu/A higher yields over the check with the second Instinct® application.

**Table 5** **Influence of Instinct® on Corn Yields for 2010-2012**

| Sidedress N lbs N/A | Instinct® oz/A | Method of Application | Yield Bu/A | Harvest Moisture % |
|---|---|---|---|---|
| 50 | 0 | Dribbled | 175.1 | 22.2 |
| 50 | 30 | Dribbled | 181.7 | 22.7 |

Previous Crop: 17-19 year Continuous Corn
Application Date: 1st week of June
Total N/A: 200 lbs.
Source: Twin State, Inc.
Ag 10 Research Center, Walcott, IA