

2008 CMDC

Nutrient Management

– Shapiro and Wortmann

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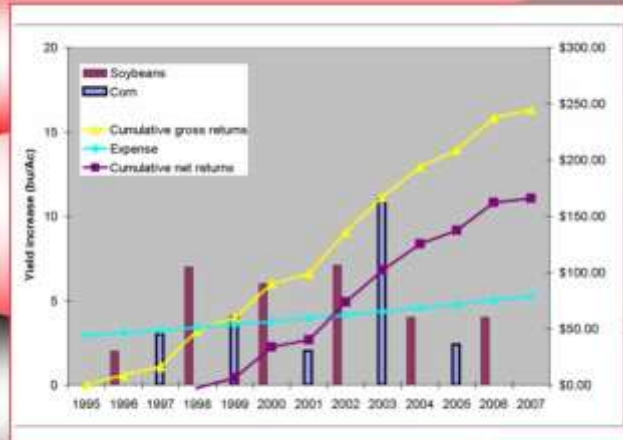
N & P Management Products

- Agrotain
 - N-Serve
 - Nutrisphere
 - Foliar N products
 - Controlled release N
 - Avail
- Other products:
 - United Agricultural Products: N-pact 26-0-0 triazon; Blacklabel – P starter; ACA Concentrate (root development)
 - Helena: Hydr-hume; TraFix; CORON controlled release N; TraFix Zn
 - Philom Bios; JumpStart (*Penicillium bilaii*)
 - Kugler Company: KQ XRN controlled release N; KS1516 low salt starter; KQ 2530 foliar application; KQ LS924 high P, low salt starter
 - Nachurs Alpine Solutions

Compendium of Research Reports on Use of Non-Traditional Materials for Crop Production

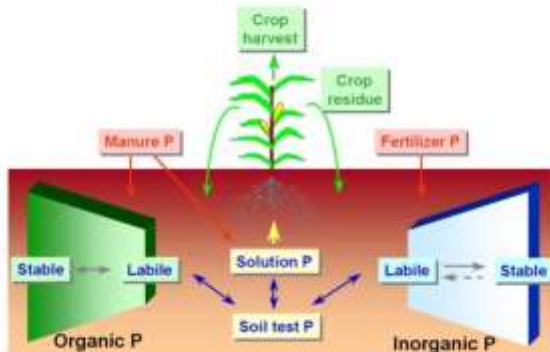
<http://extension.agron.iastate.edu/compendium/index.aspx>

2008CMDC-ShapiroWortmann001



2008CMDC-ShapiroWortmann002

The P Cycle in Soil



2008CMDC-ShapiroWortmann003

The Nitrogen Cycle



2008CMDC-ShapiroWortmann004



2008CMDC-ShapiroWortmann005

Recent P Research Results

- The results of 34 corn trials conducted throughout Nebraska in 2002-4 under irrigation.
- For corn following corn, the mean yield increase was 11.1 bu/Ac with 40 lb/Ac P2O5 applied when Bray-1 P <20 ppm (n = 9). 27% of the applied P was recovered. There was no response when Bray-1 P >20 ppm (n = 5).
- For corn following soybean, the mean yield increase was 14.8 bu/Ac with 40 lb/Ac P2O5 applied when Bray-1 P <10 ppm (n = 4); 23% of the applied P was recovered. There was no response when Bray-1 P >10 ppm (n = 11).

- **Soil test P and P uptake (UP) when Bray-1 P <20. For corn after corn (n = 62):**
 - $UP = 22.2 + 0.72 * Bray-1, R^2 = 0.11$; and
 - $UP = 20.39 + 1.43 * Olsen, R^2 = 0.25$.
- **For corn following soybean (n = 64):**
 - $UP = -74.52 + 1.84 * Bray-1 + 7.40 * SOM + 10.81 * pH, R^2 = 0.47$;
 - $UP = -3.44 + 2.02 * Bray-1 + 5.49 * SOM, R^2 = 0.38$;
 - $UP = 16.9 + 1.56 * Bray-1, R^2 = 0.29$; and,
 - $UP = 19.9 + 2.01 * Olsen, R^2 = 0.27$.

Economics of P use: discuss the numbers.

2008CMDC-ShapiroWortmann006