

The Emerging Agricultural Market for FGD Gypsum

July 24, 2012

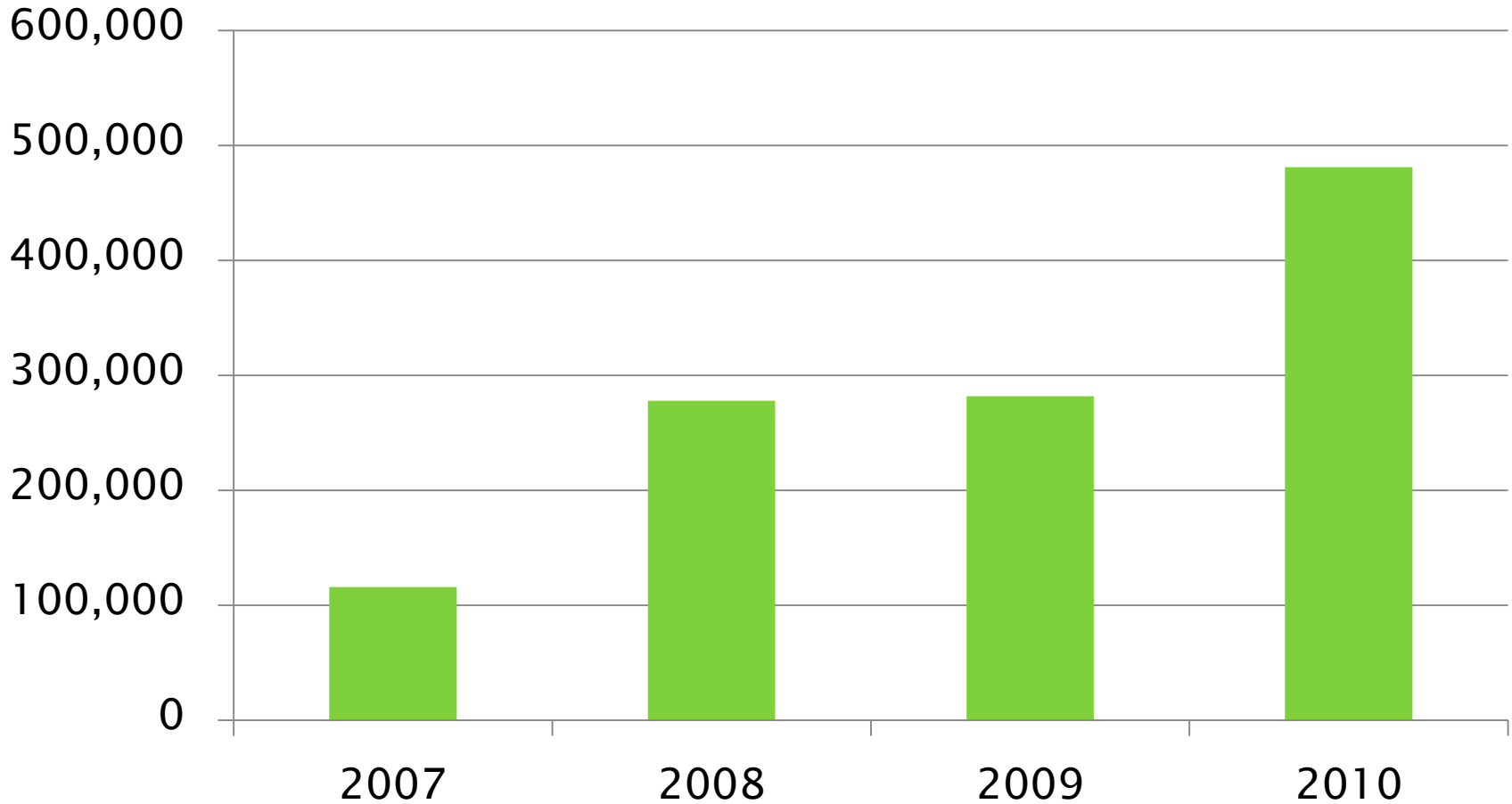
Beneficial Reuse
Management



GYPSOIL[™]
BRAND GYPSUM



Growth in Agricultural Use of FGD Gypsum



Source: ACAA CCP Production and
Use Survey Reports

Who's buying Gypsum?

- ▶ Specialty Crop Growers
- ▶ No-Till Farmers
- ▶ Row Crop & Forage Growers

Why do farmers use gypsum?

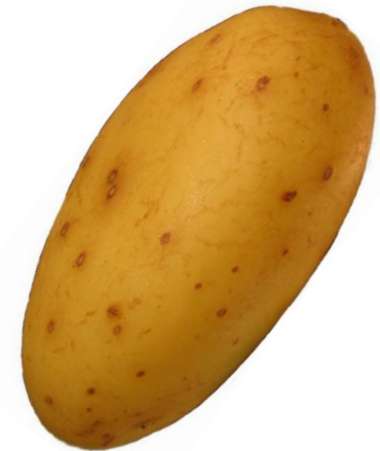
Gypsum offers:

- ▶ Soil amendment
- and*
- ▶ Nutrients



Gypsum as a source of Calcium

- ▶ 20% calcium for peanuts, potatoes, tomatoes etc.



Gypsum as a source of Sulfur

- ▶ Sulfur – deficiency is on rise
- ▶ With 16% Sulfate Sulfur, gypsum is an economical source of sulfur



AGPROFESSIONAL

Sulfur deficiency, a developing issue

Gysoil | June 8, 2012

KSTATE RESEARCH AND EXTENSION
Kansas State University

Sulfur (S) Fertility Management

considerable research with sulfur fertilization has been conducted in Kansas.

Positive yield responses have been noted on wheat

Purdue University Department of Agronomy

Soil Fertility Update

May 2012

Sulfur deficiency in corn

Jim Camberato, Stephen Maloney, and Shaun Casteel¹

Agronomy Department, Purdue University, West Lafayette, IN

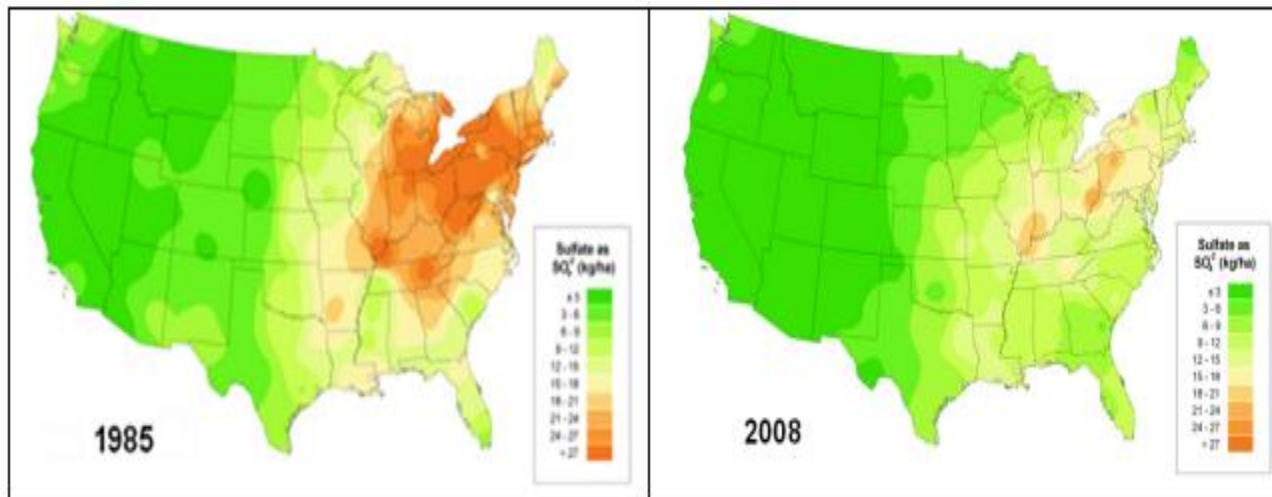
the Bulletin

June 8, 2012

Corn Crop Appears Sulfur-Deficient in Western Illinois

Sulfur depletion

National Atmospheric Deposition Program Maps Sulfate Ion Wet Deposition 1985-2008



National Atmospheric Deposition
Program (NRSP-3). 2007. NADP Program
Office, Illinois State Water Survey,
2204 Griffith Dr., Champaign, IL 61820

Gypsum as soil amendment

- ▶ Builds soils so more manageable for fieldwork
- ▶ Increases air and water penetration
- ▶ Makes soils less prone to compaction
- ▶ Reduces runoff and erosion



Gypsum as a soil amendment

- ▶ Improves water holding capacity
- ▶ Improves water infiltration



Gypsum as a soil amendment

- ▶ Less ponding



IOWA STATE UNIVERSITY
Extension and Outreach

Department of Agronomy

Story County, Iowa,

- ▶ Less erosion



Before

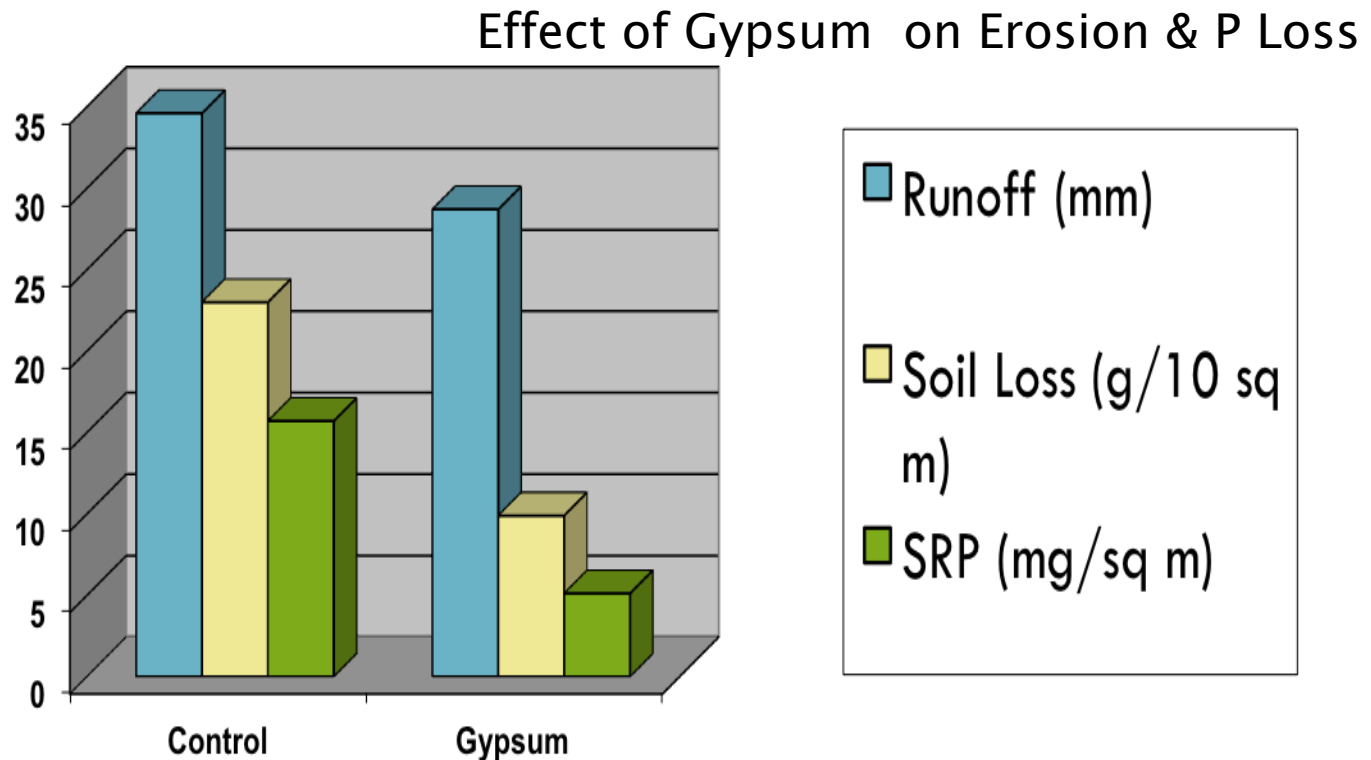


Gypsum applied



Gypsum as a soil amendment

- ▶ Prevents nutrient runoff



Gypsum as a soil amendment

- ▶ By reducing nutrient runoff, gypsum can help improve water quality in sensitive watersheds



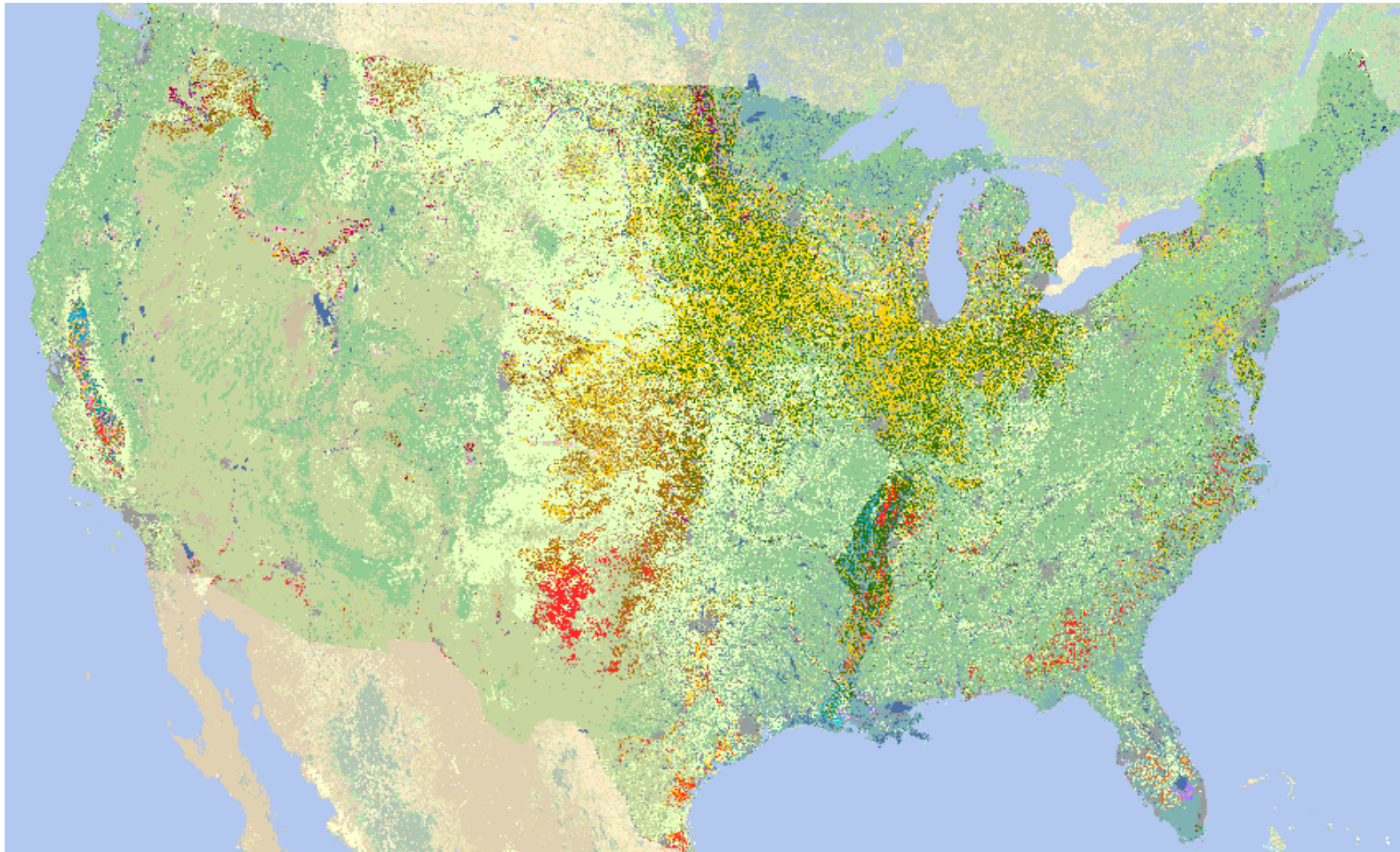
Challenges in developing the agricultural market for gypsum

- ▶ Regulations
- ▶ Logistics
- ▶ Market Development
- ▶ Research Support

Power Plants producing FGD Gypsum in 2012



U.S. Cropland Data



- Cotton
- Rye
- Rice
- Peanuts
- Oranges
- Alfafa
- Corn
- Soybeans
- Other Hay/ Non Alfafa
- Durum Wheat
- Double Crop Winter Wheat/ Soybeans
- Spring Wheat
- Winter Wheat

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