

# Seeking Balance

Soil and Crop Management at Koepke Farms

John Koepke, Co-owner



# Koepke Farms



- **Milks 330 cows**
- **Raises 300 replacement heifers**
- **Markets 60+ head of quality replacement animals per year**
- **Farms 1100 acres of cropland utilizing all no-till methods, producing feed and commodities for sale**
- **Manages two rental homes on the farm**
- **Markets a small percentage of milk directly as a branded specialty cheese product**



# Current herd statistics

- **RHA 29,858 lbs milk, 4.05 fat, 3.05 protein**
- **Current bulk tank 97 lb per cow**
- **75,000 SCC**
- **Milk 3x and 4x**
- **No BST since January 2011**
- **100+ cows over 200,000 lbs milk lifetime**





2011  
**LEOPOLD  
CONSERVATION  
AWARD**

PRESENTED TO THE  
**KOEPKE FAMILY**

# Good environmental health habits from the dairy farm



- Spread manure responsibly
- Crop rotation to maximize yield, minimize inputs and environmental impacts
- No-till
- Maintain ground cover
- Monitor results

**Every day is earth day when you make your living from the land!**

# Crop rotation a key component



- **Minimize costs of purchased inputs – fertilizer and crop protection inputs**
- **Minimize environmental impact**
- **Maximize yields**



# So about crop rotation...



- Majority of acres is **corn, corn, beans, corn silage, alfalfa, alfalfa, alfalfa (7 years)**
- Can also be **corn, corn, beans, corn silage, wheat, alfalfa, alfalfa (7 years)**
- Other acreage can be **corn, beans, wheat, clover cover crop (3 years)**





# Koepke no-til corn recipe

- **Have field fertility, ph and drainage in good shape. Aim for 160 lbs N combined from all sources. (Legume credits, manure credit, commercial N)**
- **Use starter fertilizer. We use a custom dry blend of 10-20-36 (sod corn) or 47-20-36 (corn following wheat, corn , or beans)**
- **Pick a hybrid with good emergence**
- **Use a burndown herbicide application- usually a quart of glyphosate (1.5 qt glyphosate plus pint of 2,4-D on sod)**
- **Manage post-emerge weeds as you would in a tillage system**











**“Judge a farmer by how he spreads his manure.”**

Jack Rejman, New York dairy farmer



# No till + manure = ?



- Think of a no-till manure application as a mulch or as a cover crop.
- Both stimulate soil microbes and worms
- Both provide cover for the soil, protecting it from erosion
- With manure, we see **LESS** nutrient stratification!

# No till + manure = ?



- We focus most manure applications prior to planting corn
- Most all our manure is in “solid” or “slurry” format. DM is typically 20% or higher.
- We work very hard to minimize compaction!













# No-till Corn Myths



- **I need a new, expensive planter**

*We started with a \$125 addition to the planter, and used it for 14 seasons*

- **It will take forever for my land to dry out**

*We can usually plant **sooner** after a rain than someone who has worked land*

- **I have too much residue or manure**

*See attached photos. Judge for yourself.*

- **I will need a lot more herbicide**

*We use similar rates to systems with tillage, and sometimes less*

*No-till does require a “burn down” pass. Usually less than one quart of glyphosate per acre*

# More Myths



- **My yields will go down**

*Our experience has been positive. Silage test strips in corn after corn out-yielded chisel plowed ground.*

*Grain yields have exceeded 275 bu per acre in corn following corn situations*

- **I need to use more expensive GMO corn**

*We use a lot of non-GMO corn, and do not use glyphosate post-emerge in corn.*













# Importance of Hay crops....

- Alfalfa very important part of our crop rotation
  1. Forage source
  2. Fertilizer for a following corn crop
    - 150 lb N credit 1<sup>st</sup> year, 50 lb second year
  3. Erosion control
  4. Tillage tool
  5. Discovery Farms data on our farm indicated less N loss to drain tile under alfalfa than corn or beans

# Tips to no-till seed alfalfa and clover



- Start with a weed free seedbed...glyphosate at seeding works well
- We usually seed 12-15 lbs of seed
- Minimal crop residue from previous crop is best
- Get good seed to soil contact







# A little on wheat . . . .







# Thoughts on cover crops



- After corn silage is a great opportunity for a cover crop
  1. Wheat has been a big positive
  2. Thoughts on rye.....
- After wheat another great spot for a cover crop... red clover a great fit here.
- Even better than a cover crop: start the next cash crop!

# No-till has gained us:



- Great yields in rough growing seasons
- Reduced machinery and fuel costs
- Drastically reduced sediment and N loss to surface waters
- Increased soil organic matter, CEC, and worms!



# 2004 . . . A True Test!









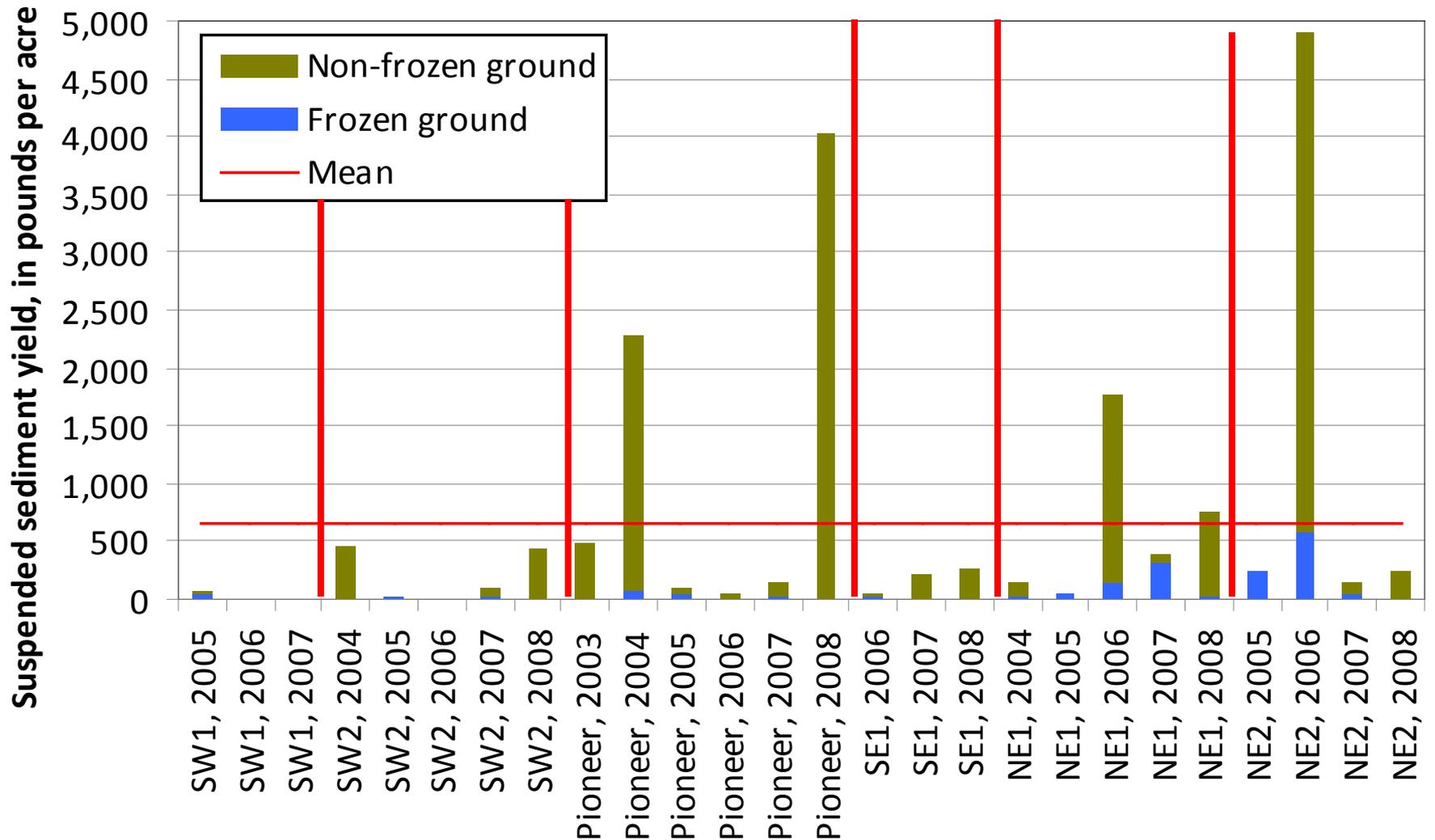






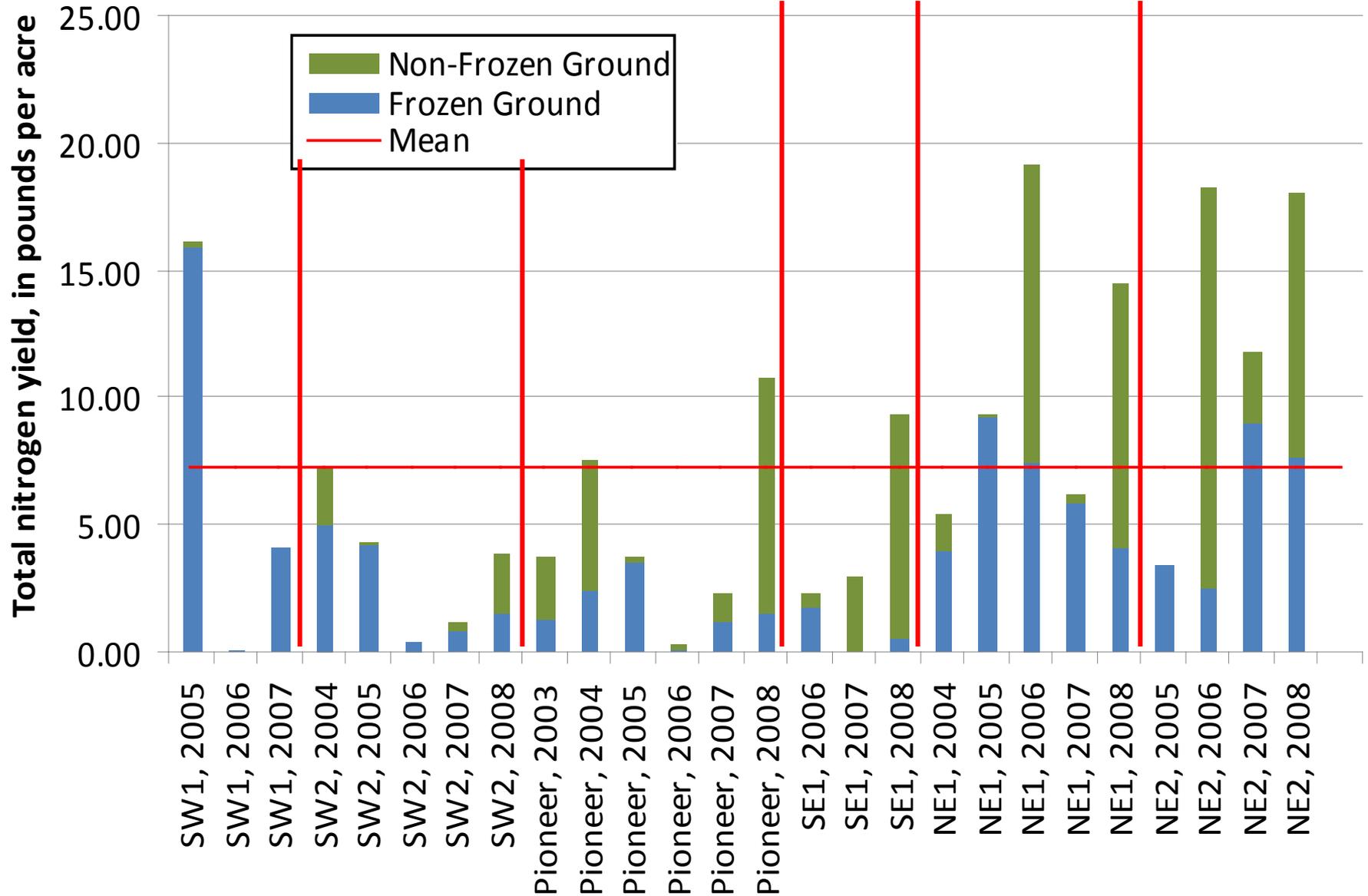
# Sediment Loss

Average across all farm years of data was 670 lb/ac



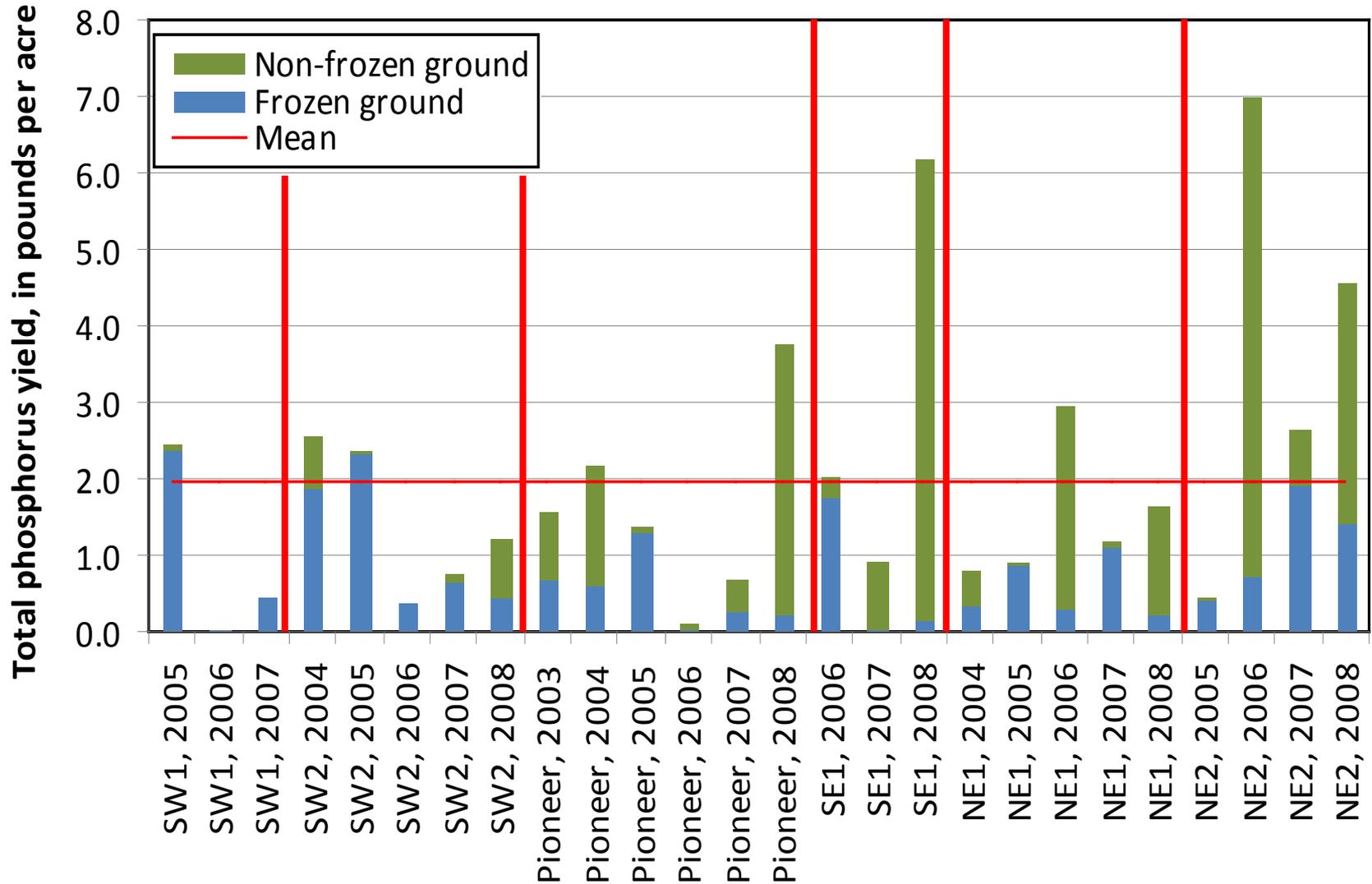
# Nitrogen Loss

Average across all farm years of data was 7 lb/ac



# Phosphorus Loss

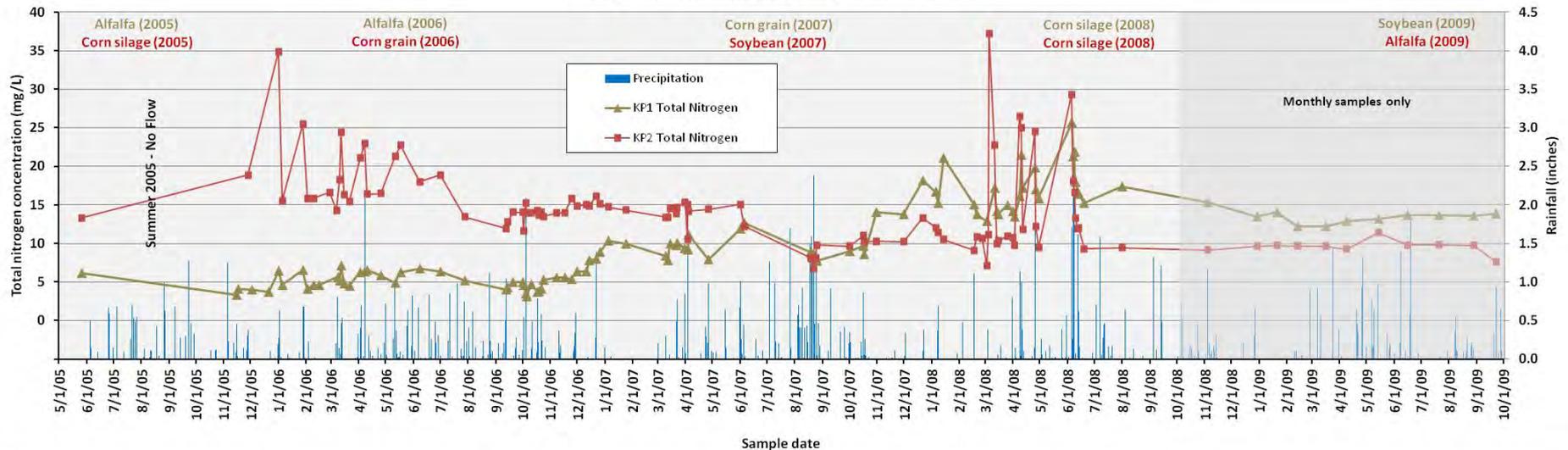
Average across all farm years of data was 2 lb/ac



# Nitrogen release to drain tile at Koepke Farms, 2005-2009



Precipitation and nitrogen by event over time



# We are not alone . . . .







# Sustainability takes many forms....



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**CEDAR LAWN CANARY PAUL**

OFFICE, 254 BROADWAY WAUKESHA, WIS.



# PABST FARM



“We are not building this country of ours for a day.  
It is to last through the ages.”

Theodore Roosevelt

