REGULATIONS

- Nutrient management regulations are in effect in Pennsylvania.
- Those regulated must be high animal density and must have at least 8,000 pounds of animals on the farm (Concentrated Animal Operation).
- High density farms have more than 2000 pounds of animals per acre of land where manure can be applied.
- Regulated farms must develop and implement approved nutrient management plans.
- Plans look at:
  - amount of manure
  - nutrient content of manure
    - obtained from manure analysis
  - manure application rates
    - based on soil test results
  - mechanical manure application setbacks
  - manure handling procedures
  - barnyard and paddock management
  - in-field stacking of manure
  - exported manure
  - nitrogen and phosphorus
- Plans for approval must be prepared by certified specialists.
  - Farm operators can attend training and testing to become certified to prepare plans for their operation. ($15 certification fee)
  - Commercial specialists, who have additional training requirements, can prepare plans for others. ($200 certification fee)

Handouts available on table.
SOIL TESTING

- Available through Penn State.
- Cost for standard test is $9 per kit plus postage.
- Summer and fall are great times for soil testing.
- Take cores from 15 to 20 random spots throughout the field. The field should not cover more than 10 to 20 acres.
- Sample between rows. Avoid old fence rows, dead furrows, and other spots that are not representative of the whole field.
- Take separate samples from problems areas if they can be treated separately.
- Collect samples in a clean container.
- Mix the core samples, allow to air dry, and remove roots and stones.
- Fill the soil test container.
- Complete information sheet and submit.

- In cultivated fields, sample to plow depth.
- Sample permanent pastures to a 3 to 4 inch depth.
- In fields that have been under no-till corn management for two years or more, surface applications of nitrogen fertilizers and manure may acidify the surface soil and decrease herbicide effectiveness.
  - Collect several cores less than 2 inches deep from the no-till area and mix in a clean bucket.
  - Remove a sample and check pH using a colorimetric pH kit. (Available from farm and garden catalogs.)
  - If the pH of the surface is less than 6.2, take a standard soil sample for laboratory analysis (around 6” deep).
  - If this sample does not indicate the need for limestone, but the surface pH is below 6.2, apply 2,000 lb/A of CCE.
FERTILIZER

- Fertilizer, applied to soil, is taken in through plant roots.
- Must be soluble in water.
- Nitrogen, phosphate, potash
- Phosphorus and potassium attach to soil and can be lost if erosion occurs. When excessive amounts are present, leaching may occur.
- Nitrogen changes forms, can be leached.
- Nitrogen, in the ammonium form, can also be volatilized and lost to the atmosphere.

When surface applying nitrogen in no-till situations, consider:

  - type of nitrogen fertilizer
    - some volatilize more rapidly than others
  - placement of nitrogen and how much incorporation will occur with planting/application equipment
  - weather forecast
    - ½ inch of rain soon after application will incorporate nitrogen
MANURE
- Manure provides the same nutrients as chemical fertilizer.
- Also provides organic matter.
  - soil structure
  - water holding capacity
- May also provide weed seeds.
- May cause odor and/or fly concerns with neighbors.
- Manure analysis
  - Available through Penn State
  - Cost for standard test is $32 plus postage.
- Rapid incorporation can control flies and odors and keep nitrogen from volatilizing. Penn State is researching limited mechanical incorporation for no-till situations.
- Rain soon after manure application will incorporate nutrients.

Importing - Nutrient Balance Sheet
- More people are looking at importing manure due to high fertilizer prices
- If manure is coming from a Concentrated Animal Operation, a Nutrient Balance Sheet must be developed to describe the rates, timing, and procedures for the manure application.
  - Nutrient Balance Sheet components
    - maps – show:
      - field locations
      - application boundaries
      - buffers
      - in-field manure stacking areas
    - consider past crops and manure applications. Also consider planned fertilizer application.
    - Soil tests may be required, depending on option selected by farmer and planner.
    - Farm receiving manure may be asked to obtain some of this information
No-Till and Cover Crop Field Day  
October 16, 2008

NUTRIENT MANAGEMENT

FIELD APPLICATION RECORD
- Provided to help you keep records of applying fertilizer, manure, pesticides, seed, etc.
- Waterproof paper, so you can keep it on the tractor or in the truck
- Record information in the field, transfer to permanent records later.
- Notebook funding came from PACD
- Take one, but fill out response sheet and leave here or mail to Conservation District.