ENVIROTHON
STUDENT SOILS TRAINING

MISCELLANEOUS INFORMATION

I. SOIL TEST
   - A. to determine available nutrients, organic matter and pH of soil
   - B. see sample attached
   - C. want to have nutrients in the optimum level
   - D. over application causes water quality and plant growth problems

II. CONSERVATION PLAN
   - A. a listing of conservation practices, units, and dates for application
   - B. includes and aerial map of property
   - C. includes soil map of property and descriptions of soils

III. LAND USE DECISIONS
   - A. consider the land capabilities
   - B. the costs to overcome any limitations
   - C. environmental concerns (effects on groundwater, erosion control, wildlife habitat)
   - D. is the land prime farmland or unique lands
     1. based on national criteria - excellent for crop production – Land Capability Classes I and II
     2. each county has a list
     3. restrictions if federal $'s being used to develop
   - E. regulations and laws
     1. steep slope ordinances
     2. erosion control laws
     3. floodplain ordinances
     4. wetlands regulations

IV. SOIL EROSION - the wearing away of the soil by water, wind, or other forces
   - A. Water erosion
     1. Sheet erosion
        - a. rain falls faster than soil can absorb it
        - b. water starts to flow across the ground carrying soil particles dislodged by raindrops
        - c. like removing sheets of paper
     2. Rill erosion
        - a. surface flow starts to form small channels
        - b. rills are small enough to be erased by tillage.
     3. Gully erosion
        - a. channelized water cuts deeper can't till thru
        - b. gully starts to move uphill.
        - c. has a vertical step at the head
     4. Slump (or mass) erosion - saturated hillside starts to slide or creep downhill

B. Wind Erosion
    1. Saltation
        a. medium sized sands lifted a short distance and dropped back down
        b. this dislodges more particles
    2. Suspension
        a. very fine particles (clay & silt) are lifted high in the air and carried a long distance
        b. most fertile part of soil
    3. Creep
        a. sand-sized particles roll along the ground
C. Geologic erosion
    1. usually not influenced by man
    2. example: landslides, glaciers
D. Calculating soil erosion
    1. RUSLE - Revised Universal Soil Loss Equation
        a. soil type
        b. rainfall
        c. length & slope
        d. crop residues
        e. conservation practices
    2. Wind Erosion Equation
        a. unsheltered distance
        b. surface texture
        c. wind speed
        d. soil type

SOIL TEST REPORT

UNIVERSITY OF DELAWARE — SOIL TESTING LABORATORY
NEWARK, DELAWARE 19717-1303

BACKGROUND INFORMATION: Grower copy

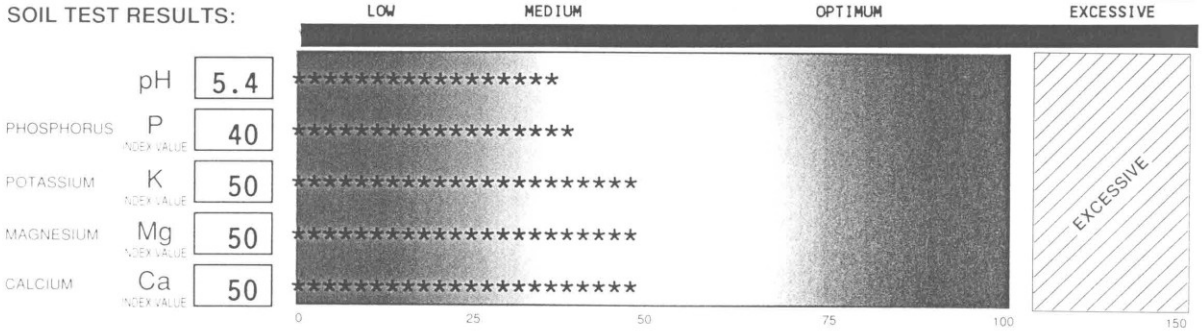
SAMPLE-COMMERCI	10	NEW CASTLE	1/ 1/96	1/30/96	4/29/96	5000	123456
FIELD NAME OR NO.	ACRES	COUNTY	DATE SAMPLED	DATE RECEIVED	DATE COMPLETE	LAB NO.	BAG NO.

SOIL TEST FOR: GROWER	ADDITIONAL COPY TO:	COUNTY AGENT
DELAWARE FARMER 123 ANY STREET TOWN, DE 19711 - -	CROP CONSULTANT CROP SERVICES, INC XYZ ANY ROAD TOWN, DE 19711	CARL DAVIS NEW CASTLE CO. EXT. 910 S. CHAPEL STREET NEWARK, DE 19716 302-831-2506

MATAPEAKE	WELL	NORMAL	SI LO	0- 8	CONV PLOW	FALLOW	NO	NO
SOIL NAME	SOIL DRAINAGE	SOIL COLOR	SOIL TEXTURE	SAMPLE DEPTH	TILLAGE	PRESENT COVER	IRRIGATION	INJ. PUMP

SOYBEANS, CONV TILL	45 BU				0	60	60	18+	1.5	CAL	
LAST CROP	YIELD OF LAST CROP	TYPE MANURE	T/A	WHEN	N	P_2O_5	K_2O LAST FERTILIZER	MOS. AGO	T/A	TYPE LAST LIME	OTHER NUTRIENTS

SOIL TEST RESULTS:



	25.0	5.0		1.0		7.65	SILT LOAM	1,2,5,14
B	Mn	Zn	SO_4-S LBS/ACRE	% ORGANIC MATTER	SOL. SALTS MMHOS/CM	BUFFER pH	TEXTURE	ENCLOSURES

SUGGESTED FERTILIZER PROGRAM:

CROP: CORN, CONVENTIONAL TILLAGE
YIELD GOAL: 125 BU/A

1.0		125	20	0-30		
T/A	TYPE LIME	N LBS/A	P_2O_5 LBS/A	K_2O LBS/	S LBS/A	B LBS/A

1. Apply 1/4 to 1/3 of the recommended N at planting, the balance to be sidedressed when corn is 15 inches tall.
2. Recommended phosphorus rate is for banded application. If P is to be broadcast, rate should be doubled.
3. Potash should be broadcast before planting or banded when planting. Do not band more than 60 lbs/A N plus K2O or salt injury to seedlings could occur.
4. Manganese level in the soil at this pH is adequate.
5. Zinc deficiency is unlikely at this pH, soil zinc and soil phosphorus levels.