### State Losing 70 Million Tons Of Topsoil Annually

LEESPORT — "Pennsylvania has some of the most productive farmland in the Northeast and produces an abundance of fresh wholesome meat, poultry, dairy, fruit, and vegetable products," says John Fior of the USDA Soil Conservation Service. "However, much of this food is shipped to out-of-state markets," adds Fior. Ironically, Pennsylvanians must import about 70 percent of the foods they eat. "Pennsylvania must provide local farmers with stronger economic incentives to capture a larger share of the local food market," says Fior.

"Unfortunties, being generally

farmland is being seriously threatened by changing economic and land use patterns," says Fior. National efforts by the administration in the early 1970's to increase food production to meet projected foreign market demands encouraged farmers to convert millions of acres of prime farmland into continuous row crop production. Millions of additional acres of marginal farmland, hayland, and pastureland were plowed under and put into crop production. Conservation practices such as contour stripcropping, diversions, terraces, and waterways were often plowed up to accommodate the larger equipment necessary to farm the additional acres.

Record harvests followed, but topsoil began eroding at alarming rates and has become a serious problem in many areas of the state. "Over 70 million tons of productive topsoil is washed annually into Pennsylvania's streams and rivers," says Fior.

"The decline in foreign grain

markets in the late 1970's and early 1980's after several years of record sales sharply cut the price of grain," says Fior. United States farming technology greatly increased food production capabilities in developing nations, giving them greater independence. Farmers' profits declined dramatically. Many farmers have been unable to manage large loan payments resulting from investing in additional land and equipment.

Facing heavy business losses, bankruptcy, and foreclosures many farmers have sold their best farmland to land developers and private industry. "Pennsylvania is losing over 50,000 acres of prime farm land annually to development," says Fior.

"We must make the right economic and land use decisions and implement the proper conservation practices today if Pennsylvania agriculture is to survive and future generations are to prosper and maintain a high standard of living tomorrow," says Fior. The public must be made aware of the serious consequences of uncontrolled soil erosion. Soil productivity cannot be maintained with heavy topsoil losses. Crop production gradually declines until it becomes unprofitable to farm even with lime and fertilizer. Many

soils have been eroded so badly they will never be productive again, even if the best conservation measures are applied.

The Soil Conservation Service has developed a series of film and slide programs that graphically illustrate the problems of soil erosion nationwide and offer various solutions. For more information contact your local Soil Conservation Service office.

#### Micronutrients Important In Plant Growth

by Robert Leiby and David L. Dunbar

Lehigh Co. Extension Service The secondary nutrients, calcium, magnesium and sulfur, play a variety of roles in plants. Calcium is an integral part of plant cell walls. Calcium deficiency is rare among agronomic crops under Pennsylvania conditions. When a soil is properly limed to maintain an optimum pH level, the calcium is usually adequate for agronomic crops. Magnesium, a key component of chlorophyll, plays a critical role in photosynthesis. Magnesium deficiency is characterized by white stripes between the leaf veins. Magnesium is best supplied by a limestone that contains this nutrient.

Sulfur is a common component of proteins and vitamins. Sulfur-deficient plants have a general yellowing and are very spindly. Symptoms of sulfur deficiency are similar to those of mild nitrogen deficiency, except that they appear sooner in new growth than in old growth, since sulfur is not mobile in the plant. Under Pennsylvania conditions, sulfur

deficiency is not common. Rainfall supplies significant amounts of sulfur and, since much of the cropland in the state receives manure applications, the sulfur is efficiently recycled.

The micronutrients are important in facilitating many of the processes important for plant growth. There are several reasons why Pennsylvania has very few micronutrient problems: (1) the heavier loamy mixture of our soil helps to maintain adequate levels of micronutrients (sandy textured soils, by contrast, often show micronutrient deficiencies); (2) the slightly acidic nature of our soils helps to maintain micronutrient solubility; and (3)

since Pennsylvania agriculture is largely based on animals, much of our cropland gets periodic applications of manure, a good source of micronutrients.

Of the micronutrients, boron and zinc are the only two that occasionally are deficient in the state. Boron deficiency can be overcome by periodically applying boron when topdressing alfalfa. Even rarer is zinc deficiency, sometimes observed on corn, particularly when phosphorus levels become excessive from overapplication of phosphorus fertilizer. Symptoms on corn appear as a broad white band on either side of the midrib of the corn leaf. Zinc deficiency can best be

corrected by application of zinc in the starter fertilizer; routine application of zinc is not recommended. The lack of general response to micronutrients has made it difficult to calibrate a micronutrient soil test for use in Pennsylvania. In addition, it is not possible to rely on calibrations developed for other soil, climatic and cultural systems. The best tool available for evaluating the micronutrient status of plants is plant tissue analysis.



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