

## Soil Drainage Pays

"Land drainage has been practiced in some form since man first began to till the soil", says John Fior of the USDA Soil Conservation Service in Leesport.

Records show that the early Egyptians employed drainage principles to improve agricultural production in the Nile Valley around 400 B.C. Later the Greeks and Romans applied agricultural drainage practices on their lands. The English, French and Germans used agricultural drainage principles as early as the 1600's. The earliest use of agricultural drainage in the United States was made in New York State in the mid 1800's.

Pennsylvania has nearly six million acres of cropland. Although much drainage work has already been done in the state, over one million acres still need some form of drainage. Berks County has its share of poorly drained cropland and pastureland.

What are some good reasons why Berks County farmers should invest in drainage practices on their farms? "There are several reasons", says Fior. For example, surface water problems can be better managed. Surface runoff can be controlled on steep slopes where high intensity rain storms cause excessive water to move at high velocities down the slopes. Surface drainage structures such as diversions and waterways properly located and constructed will reduce runoff velocity, carry water to a safe outlet, and allow greater percolation into the soil. Surface drainage channels will help prevent other surface water problems such as ponding in low depressions with no outlets where tight clay textured soils or fragipans prevent adequate drainage.

"Equipment limitations are also reduced", says Fior. Farm equipment can get into fields earlier in the spring for planting and later in the fall for harvesting. Less fuel is consumed working in well drained fields than wet ones. Well-drained soil is more resistant to compaction by heavy equipment than wet soil.

"In addition, the soil environment is greatly improved for plant growth", says Fior. The soil warms faster in the spring and

permits earlier planting, better seed germination, and faster plant growth. Crop cover is produced earlier, the soil is better protected from erosion, and increased infiltration rates increase soil water retention. More open pore spaces increase soil aeration and promote deeper and more extensive root development during the spring and summer. Plants extract more water and nutrients from the soil, grow faster, and withstand drought periods better. Increased soil microorganism and earthworm activity improves soil structure and fertility. Aerobic bacteria break down more unavailable nitrogen in green manure, animal manure, and commercial fertilizers and make it available as nitrate nitrogen to plants. Toxic salts and disease

organisms are more easily leached from the root zone area.

"The quantity and quality of crops and forages is also improved," says Fior. Crop yields are increased for every day the planting date is advanced to the start of the growing season. Longer growing seasons are achieved. Crops mature sooner and earlier fall harvests are possible. Crop quality is increased and the risk of crop losses due to wet soils is decreased. Frost heaving of alfalfa and small grains is greatly reduced. Weed control is easier because shallow rooted moisture loving, weeds and undesirable grasses do not compete as well with crops. Well drained grazing land supports more livestock with less compaction damage to soils and forages.

## York Co. to Nominate 'Conservation Teacher'

The York County Conservation District is accepting entries to the national "Conservation Teacher-of-the-Year" awards program. The competition is open to all full-time teachers working at the kindergarten through high school levels who have developed an outstanding program of conservation education.

The winner will receive \$1,000 in cash and an expense-paid trip to the 1986 convention of the National Association of Conservation Districts in Nashville, Tenn. The national winner will win \$500

At the local level, the teacher chosen to be nominated to the national contest by the York County District will receive an environmental education grant of \$75.

Co-sponsored by NACD and Allis-Chalmers Corporation, this awards program promotes the development of creative learning experiences in conservation for young people. Interested teachers should call the Conservation district, phone 755-0406, for more information.

## Strawberries — natural pest control

WASHINGTON - Strawberries produce a compound that can be formulated into a natural pest control for aphids on lettuce and thrips on strawberries. Scientists with USDA's Agricultural Research Service say the compound, ethyl formate, cannot simply be squeezed from the fruit but must be prepared in the laboratory.

USDA tests showed that by using ethyl formate as a fumigant on packaged lettuce and strawberries in a partial vacuum, 100 percent of the pests were killed. Other test results: the compound leaves no residue and it destroys insect pests on dried fruits.

The Environmental Protection Agency has not cleared ethyl formate for use on lettuce and strawberries, the scientists say. If approved, the fumigant could aid U.S. export of these commodities to countries with restrictions on residue levels of fumigants.

A notorious weed, quackgrass, may get a new reputation. Quackgrass (*Agropyron repens*) has had a bad name because it spreads aggressively into cultivated crops. But it is also one of the most nutritious and palatable grasses for livestock.

USDA Agricultural Research Service scientists have bred a

hybrid, using the unpopular quackgrass and the drought-resistant bluebunch wheatgrass.

The unnamed hybrid not only satisfies livestock appetites, it is also a good candidate for controlling erosion on meadows and

pastures in northern states. In addition, it seems well adapted to saline sites in states like Montana, possessing more tolerance to salty soils than most other wheatgrasses. The new hybrid is expected to be available com-

mercially within two years.

Researchers say other weeds now considered offensive and obnoxious could become sources of fuel alcohol, human food, firewood and nitrogen fertilizer.

## U.S., Venezuela ag talks to continue

WASHINGTON - Secretary of Agriculture John R. Block and Venezuela's Minister of Agriculture Felipe Gomez Alvarez have announced an agreement to continue and expand bilateral agricultural consultations begun with a visit to Venezuela by a U.S. Presidential Agricultural Task Force in November 1982.

Block and Gomez agreed that a meeting of the Venezuela-United States Agricultural Commission will take place in Caracas in the spring of 1985. The commission was established by the two countries to help implement the recommendations of the task force visit.

It was agreed that commission members will consider cooperative activities in the fields of agricultural marketing, agricultural economic information systems and private investment in

agriculture on a joint-venture basis.

Block and Gomez also agreed to continue collaboration through scientific and technical exchanges involving agricultural specialists

from both countries and through agricultural training programs. These activities include irrigation and drainage, agricultural economics and statistics, dairy production, grain storage, animal health and plant protection.

## Franklin Dairy Day

CHAMBERSBURG - Fly control, keeping somatic cell counts low, improving reproductive efficiency and marketing forces beyond the farm gate are topics that will be included at Extension Dairy Day on January 3, 1985.

Penn State University speakers on the program include Clarence Collison, Robert Eberhart, Mike O'Connor and Lou Moore. Twenty or more agri-business firms that

work with dairymen will co-sponsor the educational event by having exhibits and representatives on hand at Kauffman's Community Center.

Dairymen are invited to come at 9:00 a.m. to visit the exhibits. The formal program begins at 9:30 with adjournment scheduled for 2:45 p.m.

For further information contact the Franklin County Extension Office at 717-263-9226.



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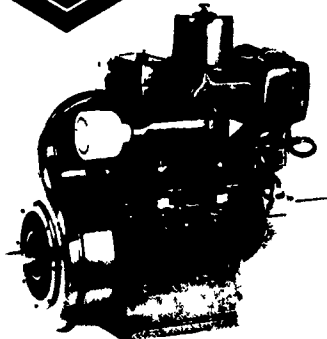
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