# DER Says Water, Not Crisis, Management Needed

ANDY ANDREWS
Lancaster Farming Staff

LANCASTER (Lancaster Co.) — If 1993 signals another drought year, and low flow rates are declared on the Susquehanna River, then irrigation in some places may have to cease.

That's one of the reasons Pennsylvania could use a statewide Water Management Plan, in order to put in place procedures and policies for water use and to be prepared in case a drought such as happened two years ago doesn't send agriculture reeling.

Tom Fiddler, Department of Environmental Resources (DER) field operations deputy secretary, spoke about the proposed management plan drawn up recently. Although irrigation only makes up two percent of the entire water use in the state, it comes at a time when river levels can be dangerously low, and when other industries are also forced to cut back.

Fiddler spoke at a meeting on water law, water rights, and irrigation recently at the Farm and Home Center. About 75 farmers and irrigation industry representatives attended the meeting.

### Low flow rare

However, historically, according to meeting coordinator Leon Ressler, extension environmental specialist, low flow rates on the river have occurred rarely, perhaps twice over the past six decades — once in the mid-1960s and once during the Dust Bowl years in the 1930s. The remainder low flow rates have occured in the fall, when irrigation is not necessary for most crops.

But the state still lives under riparian doctrine, which declares that a landowner is allowed to draw whatever amounts are "reasonable" from water under or next to the land owned. But what is reasonable, especially when agricultural systems (such as poultry) draw so much water?

Fiddler said that only the Susquehanna River Basin Compact, drawn up in January 1971 through cooperating states and federal government, currently enforces policies to preserve water. But Pennsylvania could draw its own water management plan using elements from the existing Maryland plan.

### Maryland plan

According to Dr. Herb Brodie, University of Maryland ag engineer, the Maryland plan allowed five years to pass since its inception in July 1988 for farmers to apply for a permit. If a farm uses more than 10,000 gallons of water a day on a year average, the farm must have a permit.

Maryland's drought management plan, according to Brodie, places human and health services (hospitals, fire stations, etc.) as top priority for access to water resources. Farming is next in line, for irrigation, livestock, and food processors. Everybody else is last.

Putting farmers in priority order to use the water during drought crises has made farmer's happier, according to the ag engineer. The five-year grace period ends in July this year. After that time, farmers will have a more difficult and complex task obtaining a permit, including posting and advertisement for intended use and going through public meetings.

### Comply with cutbacks

If a drought occurs this year, according to Dave Heicher, program specialist with the Susquehanna River Basin Commission (SRBC), during low flow periods industry and farmers must comply with cutbacks. Farmers are going to have to deal with this if the cutbacks occur during the irrigation season.

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Under current SRBC guidelines, farmers are allowed to withdraw up to 100,000 gallons per day during any 30-day period. A series of meetings last year reviewed the plans drawn up by the commission, and suspended all fees for ag use. The SRBC does not charge any water use fee for farming operations. The SRBC "is not interested in extracting money," said Heicher. "We're interested in making sure the water is there."

This year, meetings will resume to discuss policies regarding farming and irrigation and implementing overall water management plans, according to the SRBC representative.

For now, according to Ressler, there is not going to be an easy answer for this complex problem. If a drought occurs, it won't mean farmers won't be able to irrigate during low flow periods. It will just mean deciding who will.

### Efficient use

That's all the more reason for farmers to closely examine how to make more efficient use of the resource, according to Dr. Al Jarrett, Penn State ag engineer and irrigation systems specialist.

Jarrett spoke about the use of drip irrigation rather than overhead or sprinkle irrigation to meet crop needs.

"I teach some turf irrigation to some students who wish to become golf course superintendents," he said. "There's a concept within the turf industry which I think is just horrendous. They basically say you turn on the irrigation system for 15 minuts each day, completely independent of what the system is doing and what the soil needs are and what the crop needs are and what the system will put down. Hopefully we can get beyond that."

It means looking closely at a complex equation involving several factors, including:

• Evapotranspiration, or ET. This is the loss of water from the soil because of evaporation and transpiration from the plants. The "ET factor" is often published in newspapers. If not, get in touch with your local extension service to find out what the ET factor is, because this will help plan exactly what water loss is occuring and how much you need to irrigate.

• Crop coefficient. This is simply what amounts of certain kind of crop needs to maintain maximum growth in its cycle. This is also available from your local extension office.

• Soil type. Each farm has a specific soil type with specific water needs. Jarrett said needs depend on each individual site and crop planted.

• Other factors, such as solar radiation, date, time, and precipitation factors, such as occur during the summer season, with local thunderstorms and other rain events.

All these elements combine to produce exactly what type of watering system is needed, how much water to put down, and when.

Jarrett emphasized the importance of conserving water by using drip irrigation, which places water exactly where the plant needs it in the right amount. This saves water for many types of vegetable and fruit crops, because overhead or sprinkle irrigation wastes a great deal of water.

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About 30 percent of the water is wasted in well-designed sprinkle irrigation. In drip, five percent or less is wasted. "You do a better job with drip irrigation," he said.

But even in the best of years, the water can lack necessary moisture at critical times. The goal is to keep the moisture content in the root zone below field capacity (saturation) and above the halfway point (moisture in 50 percent of soil profile).

There are soil moisture sensors, such as tensiometers, available to measure how much is available to the plant, available from the irrigation industry.

For most farmers who use irrigation, it remains complicated because plants, soils, and precipitation differ site to site, according to Jarrett.

"We can generalize to death and just figure on .2 inches (of water) a day, but we're not going to do a good job of managing our resource, and that is water," he said. "Most of the time you're going to overirrigate — that's better than underirrigating, but if we have drought problems, then you're very sensitive to wasting that resource. You don't want to do that."

# Wool, Mohair Producers Asked To File Receipts

LEBANON (Lebanon Co. — The Agricultural Stabilization and Conservation Service (ASCS) reminds wool and mohair producers to file their 1992 sales receipts by January 31 so that the documents can be used in determining the national average market price.

Although the deadline for filing 1992 receipts to qualify for a 1992 price support payment is March 1, ASCS encourages wool and mohair producers to file in January because USDA's National Agricultural Statistics Service needs the data in February to compute wool and mohair market prices.

"Since national average market prices are the basis for wool and mohair payment rates, producers are urged to submit their sales documents to us at least by the end of January," said Jenifer K. Minnich, county executive director.

She reminds producers that "actively engaged in farming" and "person" determinations must be made to be eligible for a payment. Also, producers are required to certify that they are in compliance with highly erodible land and wetland conservation provisions.

"We encourage producers to bring in their 1992 sales receipts as soon as possible," Minnich said.