

# Strawberries, erosion & cleaning up the Bay

COLLEGE PARK, Md. — A few years ago, John Nicolai decided he'd have to grow something different if he was going to make a go of his parent's 90-acre Howard County farm. With the price of corn and wheat going down and the cost of everything else going up, he decided to expand his pick-your-own strawberry operation.

Making the switch wasn't as simple as it sounds. Strawberries are a higher value crop, but they are also more labor intensive. It meant changing marketing strategies, advertising, and dealing with the public. It also meant exposing more land to soil erosion and using more chemicals.

"With strawberries, about two-thirds of the soil is open to erosion. There's no way with these steep slopes that I could have had all strawberries without a way to control erosion," Nicolai said.

The prospect of losing valuable topsoil and chemicals in runoff during rainstorms wasn't his only concern. A former agricultural Extension agent and dairy science professor, Nicolai was well aware of the potential for causing non-point pollution.

Nonpoint pollutants are contaminants carried in runoff. They include sediment, fertilizers and pesticides from farmland. Fertilizers from yards and oil deicers from highways and parking lots are also factors. Nonpoint pollution is hard to see and even harder to control. So why worry about it?

Nonpoint pollution has been identified as one of the causes in the decline of plant and animal life in the Chesapeake Bay. According to a study by the Environmental Protection Agency, overenrichment from excess nutrients has spawned algae blooms, which in turn deplete the oxygen supply in the Bay.

"Nonpoint sources are blamed for the majority of nitrogen entering the Bay, and cropland is the biggest contributor," explains William Magette, an agricultural engineer at The University of Maryland. "Most of the phosphorus delivered to the Bay is coming from point (end-of-pipe) sources. However, most of the phosphorus, that make its way to the Bay from nonpoint sources, comes from cropland attached to soil particles."

Thanks to good planning, Nicolai doesn't have to worry about polluting. One of the first things he did before expanding his strawberry business was to call on help from his local soil con-

servation district.

"I had the soil conservation people out and told them what I was going to do. The first thing we did was develop a farm conservation plan," Nicolai said.

His conservation plan consisted of a set of diversions and grass waterways to intercept runoff and channel it to a series of ponds. The ponds trap chemicals and sediment and also act as a water supply for irrigation. Nicolai plans to plant grass strips along each side of the stream that flows through his property. "We use a lot of chemicals on these strawberries. These grass strips are a precaution in case we get a gully washer. They'll filter the runoff before it reaches the streams."

He is gradually realigning his fields so that the rows go across the slope instead of up and down. This will help create small check dams to break the force of the runoff and allow more absorption into the soil.

According to Jack Helm, Soil Conservation Service district conservationist, the conservation practices that Nicolai installed have cut erosion rates on his farm in half. "Erosion is now within tolerable limits," says Helm. "If he hadn't used these practices, he would have easily been losing four to five times to tolerable amount."

Nicolai is just one of many farmers who voluntarily practice conservation. According to SCS, about 800,000 acres of the state's cropland is adequately protected against erosion. What about the rest?

"Some farmers don't understand the problem," says Whitey Secor, SCS resource conservationist. "They don't realize that statewide, we've already lost about half our topsoil. Only about six inches remain over large areas."

"Also, soil conservation isn't cheap. It often takes several years before the benefits in increased productivity are realized. Crop prices have been so low in recent years that many farmers don't feel they can afford to invest in conservation. Our job is to help farmers find the most cost effective ways to conserve soil and prevent pollution."

One concept SCS has been promoting is do-it-yourself conservation. For farmers such as Nicolai, that means using his own equipment and labor to install structural practices like diversions and waterways, instead of hiring a contractor and bulldozer.

It took him about 10 hours using



a tractor and three-bottom plow to build his first 1,500 feet of diversion several years ago. He's since built another 3,500 feet. "It's not fast, but it is easy when you have soil conservation people guiding you," he said.

The cost of building it himself was about 25 cents per foot to compared to a cost of two dollars per foot to hire a contractor.

Cost is an important determinant of whether a farmer is willing to use conservation practices, says Secor. Even changing tillage practices, generally considered a cost-efficient way to control erosion, can have high initial start-up costs. For example, no-till planters cost about \$20,000 or more. "That's a

big investment, especially when crop prices have been depressed for the past several years."

"The government does offer financial incentives to practice conservation," says Secor. In addition to the Agricultural Stabilization and Conservation Service's traditional cost-share program, a number of special cost-share programs are available. Last July, the state approved a \$5 million cost-share program that pays up to 87 1/2 percent of the cost of practices. More money is likely to be made available because of the concern over the Chesapeake Bay.

Pollution from agriculture is only one of several causes of the Bay's ills, and farmers are coming to accept part of the responsibility for cleaning it up. Says Nicolai, "I think that farmers should be just as responsive in cleaning up the Bay as anybody else whether it's a steel plant or paint factory. Anybody who is pollution the environment is liable to somebody."

What can other farmers do to protect water quality? Conservation officials want farmers to realize that reducing nonpoint pollution on the farm goes hand-in-hand with improving agricultural productivity. Out-of-pocket costs encountered in adopting BMP's

can be at least partially offset by reduced soil loss and lower fertilizer costs.

Tenant farmers should stress the importance of best management practices to absentee landowners. Absentee landowners should in turn encourage tenants to adopt BMP's by providing financial incentives, such as offering to share BMP installation costs.

Farmers who live farm from a major river or stream, still need to pay attention to pollution control. Some pollutants are transported rapidly for great distances by storm runoff and associated high streamflows. Even streams with little or no flow during dry times of the year can provide a path for pollutants from fields to the Bay.

During normal farming activities, say conservationists, farmers should strive to:

a. Keep water (rainfall, snow, and process water) away from potential pollutants (animal wastes, fertilizers, pesticides) by providing proper storage of these materials.

b. Locate new animal facilities as far as possible from streams, and preferably at the top of a slope, so that runoff from surrounding areas does not have to cross the facility. Collect contaminated

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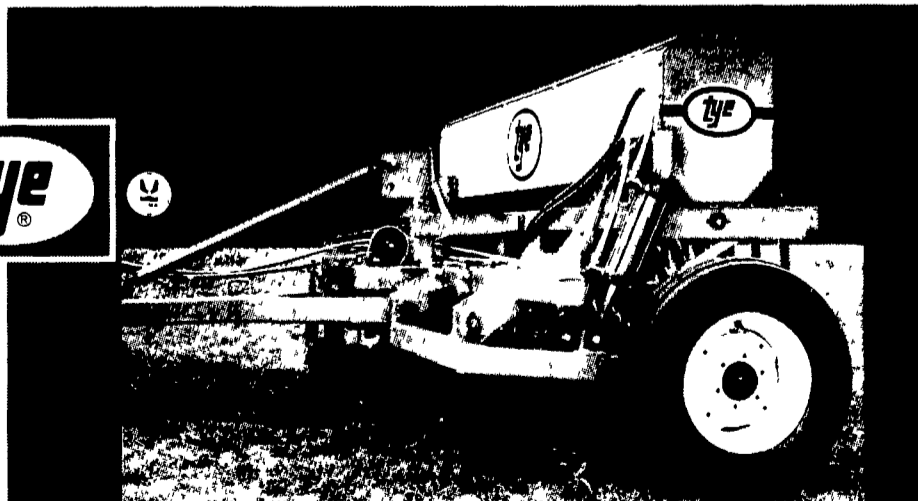
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