



Shady Birch Farm: well grounded in soil conservation



BY JACK HUBLEY

BUCK — Pennsylvania's rivers and streams are a bargain-basement delivery service, shipping, on the average, nearly eight tons of topsoil from every acre of Keystone State cropland annually—and doing it free of charge. But farmers who continue to donate to this soil movement by floating their farms down the river may eventually find themselves up the creek.

Although estimating the value of a ton of topsoil isn't as easy as computing the value of an acre of shelled corn, the fact is that landscapers are getting about \$10 a ton for the stuff, delivered. And that figure fails to take into account the expensive fertilizers, herbicides and insecticides that are also lost when another ton of soil washes down-stream.

Southern Lancaster County farmer James G. Kreider was one of the first farmers in his area to recognize the economic importance of keeping his soil on the farm. In recognition of his soil conservation efforts, the Lancaster County Conservation District will honor Kreider with its Cooperator of the Year award at the District's annual dinner meeting on Mar. 21.

Jim Kreider and his son Tom, 29, run Shady Birch Farm, a dairy and crop operation located in East Drumore Township not far from the town of Buck. The operation is actually made up of three farms totally 300 acres, with an additional 100 acres of rented ground.

Jim's roots run deep in Shady Birch soil, which is undoubtedly one reason why keeping his topsoil intact is so important to him. Born in the home farmhouse, Jim bought the farm from his father in 1953. In 1974, Tom joined his father in business, following graduation from Solanco High School.

Since neither father nor son was interested in milking cows, the

family struck an agreement with George Nickle, who owns half of the 155-cow milking herd and assumes total responsibility for the dairy operation. Tom is content to handle the mechanical and maintenance end of the business, because, as he points out, "Equipment doesn't talk back."

Although Jim's working relationship with the Conservation District and the Soil Conservation Service dates to 1966, it wasn't until Tom's graduation year, in 1974, that the face of Shady Birch Farm really began to change. At that time, Jim signed a Long Term Agreement with the District and SCS, which entitled him to up to \$3,500 in cost-share benefits annually.

Although the project would entail extensive earth moving as well as out-of-pocket expense, Kreider knew he'd be paid back with interest in the form of long-term yield benefits. Much of his high quality Chester-type soil was located on a 6 to 8-percent slope, and, with no contour strips or terraces to arrest the flow of runoff, the foundation of Kreider's livelihood was being literally liquidated by heavy spring and fall rains.

The Lancaster Soil Conservation Service office estimates that Kreider's cropland was disappearing at an average rate of 20 to 24 tons per acre annually. With the maximum sustainable loss generally considered to be about three tons, Shady Birch's erosion problem was serious enough to warrant a major restructuring of the farm's cropland.

With technical assistance provided by SCS, 11,500 feet of cropland terraces were installed, along with 8,200 feet of sod diversion terraces to divert water away from areas vulnerable to erosion. To handle the flow from the terraces, 6,450 feet of sod waterways were built. In addition,



For his efforts to keep topsoil on the farm, James Kreider has been named the Lancaster County Conservation District's Outstanding Cooperator for 1986.

nearly 5,000 feet of drainage tile was installed to drain land saturated by spring seeps and make it available to crop production.

By 1980 the farm's look had changed significantly. "Before, we had all straight rows in 100-foot strips," says Jim, adding that some of those strips were plowed in the same direction as the flow of runoff, resulting in considerable soil loss from heavy rains.

To augment these soil saving practices, the Kreiders switched to minimum tillage in the mid-1970's. "We were one of the first in the area to start that, and a lot of guys laughed," recalls Tom. "But with the right planter, it (conservation tillage) grows the same amount of corn."

Since putting away their moldboard plow, the Kreiders chisel in the spring, then go over the fields with a disk once or twice before planting. In the fall, the stalks are disked down after the corn is shelled.

"When I was younger than Tom, we used to plow all spring," says Jim, adding that the switch to minimum tillage results in savings in both manpower and equipment.

Although their fields may not appear as well manicured at planting time, Tom points out that the rougher soil surface helps to hold the water. "You work the ground to death, then you get a downpour and it's gone."

Another tool effective in con-

taining soil during a downpour is the roadside buffer strip. Since much of their road frontage is vulnerable to washing during heavy rains, the Kreiders seed these areas with rye. The rye performs double duty, keeping topsoil intact during the fall, winter and early spring, and being harvested for silage before these areas are replaced with corn.

Managing the farm's manure output efficiently is just as important as soil and water conservation to the Kreiders. In 1966, Jim installed a 35,000-gallon manure storage tank, one of the first in the area. Since this small amount of storage space necessitated mid-winter hauling, the Kreiders installed a larger unit in the early 1980's. Measuring 12 feet deep by 84 feet in diameter, the concrete tank has a 450,000-gallon capacity, providing six months of storage.

Manure from the dairy herd is initially scraped into the smaller tank beside the barn, then pumped underground for a distance of about 150 feet to the larger unit. By pumping the manure into the bottom of the large tank, the crust on top of the slurry is not disturbed. This keeps the nitrogen contained within the tank, says Tom.

With their new manure holding facilities, the Kreiders haul manure only twice a year, once before corn planting time, and again after silo filling. In order to

keep the maximum amount of nutrients on the farm, the manure is injected into the soil or chiseled as soon as possible. "We've really helped our fertilizer requirements since we went to injecting the liquid," Tom notes.

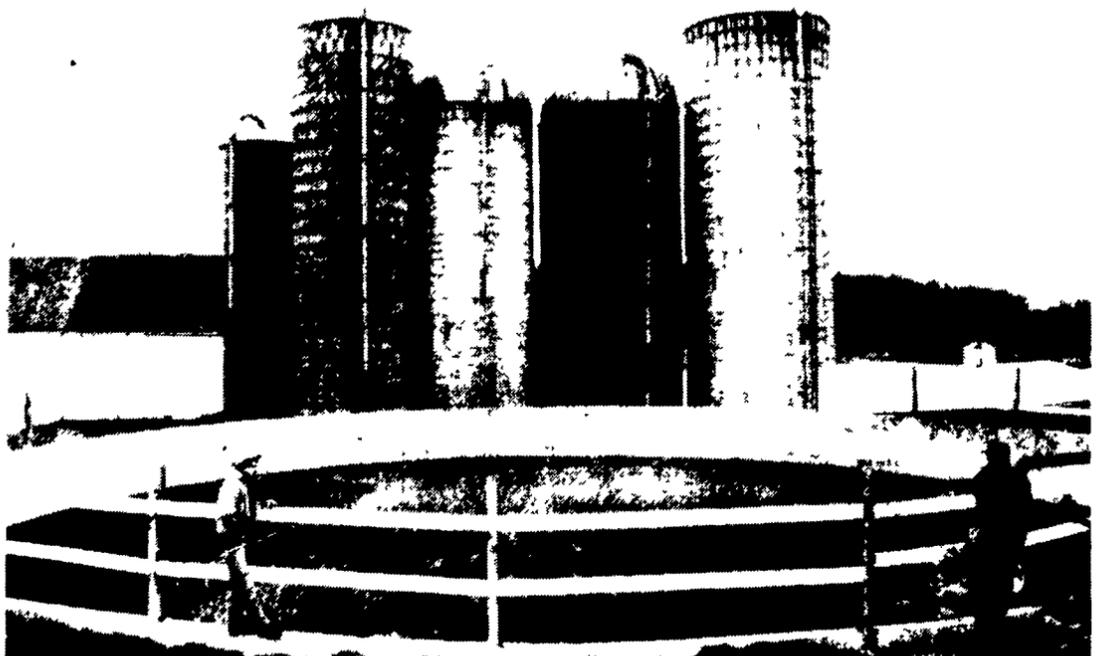
According to Jim, nearly all of the farm's soil, water and nutrient management systems have proven to be virtually maintenance free. Since the sod waterways are called upon to handle large quantities of cropland runoff on occasion, some maintenance is required when minor washouts occur, but, with a little extra care when working the soil at planting time, the cropland terraces should remain in place indefinitely. Once you do it, it's always there," Tom points out.

SCS District Conservator Warren Archibald concurs that many of the country's terraces, installed during the 1930's, are still in place and forming well.

Cropland terraces, diversion terraces, sod waterways and manure management systems: assembled into an integrated program, these practices can save soil, water, nutrients...and money. Like the value of an acre of topsoil, the exact figures can prove to be elusive. But Jim Kreider is one innovative farmer who's convinced that the economic return is very real. "I wouldn't want to go back to the way it was before...no way," he smiles.



With minimal maintenance, sod waterways remain effective barriers to soil erosion during periods of heavy rain.



Since installing their 12-by-84 manure storage tank, Tom (left) and Jim Kreider need to spread manure only twice a year.