

High Nitrates In Water, Poor Soil Conditions Lead To Changes At Weaver Farm

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NEW HOLLAND (Lancaster Co.) — Sixteen years ago, when Don Weaver's daughter Heidi was born, the family knew something was wrong.

Heidi came into the world suffering from brain damage. The cause? Nobody knew.

As a result, Heidi, a diagnosed autistic child, grew up with special needs. The family, including Don's wife, Linda, and the others in the dairy partnership, including Don's brother Nelson and his wife, Joyce, tried to reason what could have caused the problem.

They had no answers.

Don said his doctor suggested that maybe something was wrong with the water.

Don decided to have the water tested.

That's when they knew they were onto something.

While the Environmental Protection Agency (EPA) allows almost 10 parts per million of nitrates, the water was testing five times that amount. Don suspected that his wife, Linda, was drinking their nitrate-contaminated wellwater at conception. He had wondered for years why he was having health problems with the herd — including downed cattle. As a

result, a new well was dug. In addition, Don took his family off of the well and gave them bottled water to drink.

In the years since, Don and his brother Nelson completely rethought and reorganized their farming operation. They switched to a more strict crop rotation. They stopped applying manure where possible and began shipping it to other farms. They used soil microbial additives.

They claim their strategies worked.

"We're not saying we fixed that water," said Don during a tour at his farm last week. "Maybe all of us in our community fixed it."

Don and Nelson attribute a great deal of improvements made to the care of the soil to improved crop yields, better herd health, and family peace of mind.

Don and his brother and families combined make up Weaver Homestead Farm located northwest of New Holland. After time away from the farm, Don said he returned to the dairy in 1980 after he realized that life was "not necessarily greener elsewhere," he said.

Don and Nelson spoke last week at a tour conducted by Rodale Institute and sponsored by funds from the USDA Sustainable Agri-

culture Research and Education (SARE) program. About 34 extension members and agri-industry representatives from six states attended.

In 1980, the Weaver Homestead Farm was made part of a partnership with the Weaver brothers and their families. It consists of 110 acres (about 95 tillable) and about 100 dairy cows (80 milking). Homestead Nutrition Inc, a business managed by Don, is also part of the partnership.

The Weaver Homestead has been in the family for nine generations. Don said it is part of a 3,000-acre land grant from William Penn in 1721 to three Weaver brothers from Germany.

"We were given the soil and land to treasure and care for," said Don at the tour.

The farm was purchased by the partnership from Don's father, John, in 1980, when John retired. The farm has been a dairy for quite some time.

The herd size has stayed the same since 1980. The Weavers farm 100 acres and have 200 head, including dry and milking cows and calves.

Don spoke about the "journey" the farm took after high water nitrates played a role in the challenges Heidi faces and the prob-



Don Weaver, right, and his brother Nelson and families combined make up Weaver Homestead Farm located north of New Holland. After time away from the farm, Don said he returned to the dairy in 1980 after he realized that life was "not necessarily greener elsewhere," he said.

lems with dairy herd health.

The journey has not only involved a diverse crop rotation of three years alfalfa followed by corn silage followed by a rye cover crop, then into soybeans and finally to high moisture shelled corn. Shallow tillage using a rotary hoe is used to keep organic matter close to the soil surface. Biological breakdown of manure in the soil, as well as in the liquid manure itself, is used.

In addition, herbicide and insecticide use has been cut back. Don said the farm managers are "willing to live with a few weeds" to control costs.

On the alfalfa fields, manure is applied in the fall at 6,500-9,500 gallons per acre. At the time, the soil microbial product is added, and the ground is moldboard plowed. Alfalfa is spring-seeded at 20 pounds per acre. No pesticides are used.

On the corn fields, the microbial product is applied to the soil in the fall. Manure is applied in the spring at 6,500 gallons per acre. After the manure dries, it is chiseled 5-6 inches deep. No pesticides are applied. The rotary hoe is used 5-7 days after planting and again one week later. Cultivation is used twice along with some spot spraying where necessary.

Rye is planted after silage corn and prior to soybeans.

Manure is applied at 7,000 gallons per acre. The soil microbial product is applied in the fall. A chisel or disc is used to prepare the ground and the rye is drilled in.

The crop is harvested as ryclage.

On soybean ground, a moldboard plow or offset disc is used. Corn planting is on 30-inch rows. A rotary hoe and cultivator are each used twice.

Nelson said a recent manure analyses indicated there is close to 40 units of nitrogen per 1,000 gallons.

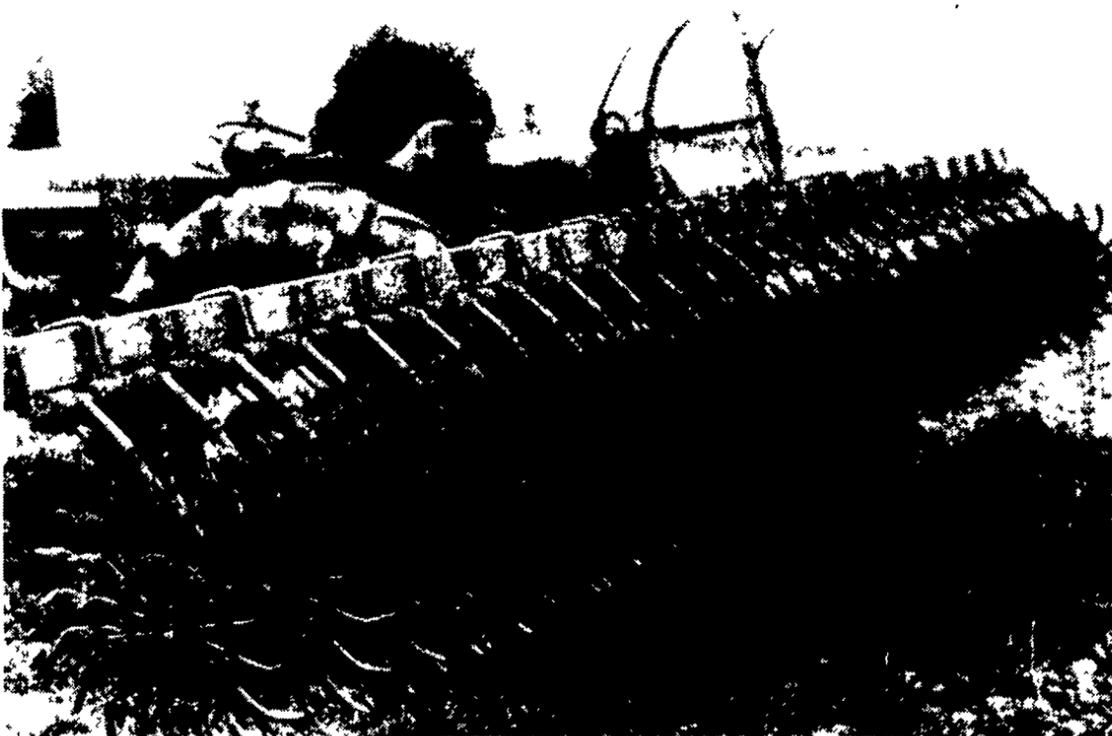
"Manure is a bonus but it's also a negative," said Don Weaver. "On our farm, it's a problem to know how to manage it. We just get too much. We get neighbors to do the hauling."

What he recommends to his clients is the "best thing you can do is put mattresses in" for cow comfort, he noted. "I've heard guys say, take my mixer, I'll keep my mats." Don said that the best cow comfort doesn't come from the regular rubber stall mats, but "mattresses."

Overall, the use of more length of forage together with a special cow TMR program has garnered the grade Holstein herd an average of 21,847 pounds of milk on DHIA at 775 pounds of fat and 695 pounds of protein. Milking is from a tiestall to a pipeline twice a day. The Weavers are cooperators with Land O' Lakes.

As for the improvements, Don is uncertain of the results.

"We don't know if we did this and the water is better," he said. "We really don't know how the problems happened." But, he noted, many farmers are using these practices and all may have contributed to the improvements.



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Nelson Weaver works the fields with a rotary hoe.

