Farmers understand water's value

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— Aly Shady, vice president of the International Water Resources Association

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Tom Hafer, above, is a fifth-generation Amity farmer who worries that despite implementing "best management practices" on his Clover Leaf dairy farm, development upstream may be cutting off his limited supply of groundwater. That's serious business when you consider that the average cow drinks 75 gallons of water a day. With close to 400 cows on the farm, one of whom takes a big drink at left, those numbers can add up fast. What is left over after the cow is finished with the water can add up fast as well. But Hafer's farm has a state-of-the-art collection system for cow manure, part of which is seen below, that helps keep the manure out of the streams and makes it available for fertilizer in the next growing season.

Photos by Kevin Hoffman/The Mercury

AMITY — After five generations in Berks County fields, you might say the Hafer family knows a thing or two about farming.

Brothers Terry and Tom Hafer run Clover Leaf dairy farm on Limekiln Road and you don't need to tell them the value of water.

Terry Hafer estimates that their dairy operation uses about 19,300 gallons a day —14,000 gallons for the milking cows to drink and another 300 gallons for "washing up." And this is for a farm that does not irrigate its fields, but relies on the average 42 inches of rain Pennsylvania receives each year.

Interviewed in late June during a dry spell, the brothers were keeping their eyes peeled skyward for storm clouds.

This summer was Pennsylvania's 20th driest in 112 years of record-keeping.

"We're doing horribly right now," said Tom Hafer. "We haven't had any rain in three weeks and everything is withering up. I've got $100,000 worth of seed and fertilizer burning up out there in the fields."

So why not irrigate?

"Can't afford it," said Tom Hafer as he fed feed onto a conveyor belt aimed into a barn full of

hungry heifers.

The two wells on the farm produce only about eight gallons of water per minute and “with gas running $2 per gallon,” running a pump to boost the yield makes no economic sense.

Besides, “nobody irrigates around here,” Tom Hafer added.

That’s not true elsewhere in the world, where irrigation accounts for vast usage, and waste, of water.

Although only about 11 percent of farmland in the U.S. is irrigated, in places like Pakistan and Egypt, irrigated acreage accounts for between 80 and 100 percent of all land used in farming.

China and India alone account for more than one third of all irrigated surfaces on Earth. That is not surprising, considering they are among the planet’s most populated countries.

Projected population growth rates for the next 30 years will require an increase in food production equal to 20

percent in developed countries and 60 percent in developing countries. Yet, per capita irrigation peaked in 1978, making the effective management of Earth’s water resources that much more vital.

Aly Shady, vice president of the International Water Resources Association and president of the International Commission on Irrigation and Drainage, puts it pretty bluntly.

“The survival of the human race in the next millennium will be tied to the success of managing fresh water,” were his words.

Irrigation consumes 70 percent of the fresh water used in the world and two-thirds of all water from rivers, lakes and aquifers.

Sadly, about three-fourths of this water is lost to evaporation. Irrigation also transports salts into the soil, eventually making them unusable for farming.

Water at Clover Leaf Farm, however, is reserved mostly for the cows, which, it turns out are not just hungry, but awfully thirsty as well.

The average cow drinks 75 gallons of watera day and with close to 400 cows on the farm, those numbers add up fast.

Water is also used to wash the cows off and is pumped through a mister to keep them from overheating on scorching hot days.

“Every time they put a development in, it changes where the water goes,” said Tom Hafer. “That’s that much less water going into the ground.”

A tributary stream of Monocacy Creek, itself a tributary of the Schuylkill River, runs through the main farm, but Tom Hafer said his fields are not near it.

Farming practices are identified by many studies as being a primary cause of stream pollution when rain washes natural fertilizers like cow manure, as well as man-made fertilizers, into streams.

But if the “best management practices” promoted as the best fix for such contamination really work, then the Hafers are not part of the problem.

“We participate in a manure management program,” Tom Hafer said. The program determines — based on each farm’s soil, topography and crop — how much manure can be spread on each acre of fields.

“There are people who come out and test the manure to determine how many gallons per acre we can apply,” said Tom Hafer. “And obviously, they test the soil as well.”

The program, with some help from state funds, also helped to pay for a massive one-million-gallon concrete pit into which the manure from the Hafers’ heifers is dumped each day after it is collected in the barn.

Rain water collected from the barn roof is routed into a trench that leads to the manure pit, keeping it in a partially liquid state.

“None of the manure goes into the stream,” Tom Hafer said, adding that “we had that stream water tested and it’s high in coliform (bacteria) before it even gets to our property.”

“We empty the pit twice a year and apply it to the fields,” he explained as he stood beside the pit, seemingly unaffected by the stifling odor.

The brothers also do not “till” their land, which is to say, they do not break up the soil each spring.

Instead, they use a “seed planter” that inserts seeds into the ground, a “best management practice” that greatly reduces soil erosion.

“We’re 100 percent no-till farming,” said Tom Hafer, who farms acreage throughout eastern Berks County and has devoted 380 acres to corn, 120 to alfalfa and grass for feed.

“We do not plow the ground, but there are still some guys around here who do that and when you get a hard rain, you wouldn’t believe how much erosion you get off those farms,” Tom Hafer said. “It’s no wonder those creeks are muddy.” After 20 years of farming — their father Earl Hafer still farms as well — the brothers say it’s not getting any easier.

And aside from the cost of equipment, rented acreage, the price of milk, the cost of complying with such “best management practices” described above, one of the things putting pressure on them is water.

“We’re worse off than we were in 1999,” Tom Hafer said.

“They keep putting the developments down, and they say they’re getting the water from a company, or an authority, but they’re still getting it from somewhere.”