

## Caleb Williams of Tioga County

# Wearing many hats: dairyman, cheese maker and marketer

BY WENDY WEHR

WELLSBORO — Dairy farmers wear many different hats in a day. From agronomist to mechanic, to herdsman to business manager, the dairy farmer takes on many roles in running a successful operation.

But when it comes to manufacturing or marketing their own product, most dairymen are more than willing to just tilt their hats back on their heads and let somebody else take over.

There's one dairyman, though, up in the hills of Tioga County, who is literally and figuratively wearing the hats of dairy farmer, cheese maker and dairy product marketer. Visit him while he's milking, and you'll see him wearing a frayed and chaff-covered Pennsylvania DHIA hat.

But when he steps through the door from stall barn to cheese-making room, he switches hats and switches roles. Off goes the dusty DHIA hat and on goes a new, clean hat. Caleb the "cowman" becomes Caleb the cheese-maker, producer and marketer of healthy, delicious farm cheeses.

Caleb Williams and his wife, Billie, own and operate Bingham

Farms outside of Wellsboro, Tioga County. What began in the early 70's as a simple interest in making good-tasting, natural cheeses, is now a full-fledged dairy business and cheese-making and marketing operation.

Caleb's idea of cheese making was conceived in 1970, when he spent a school year in Sweden and discovered the flavorful world of European farm cheeses.

"I was amazed personally by this whole new world of fermented dairy products of the Europeans," says Caleb.

"I had been raised on mild Cheddar and Velveeta cheese," he adds, but when he returned to the States after his travels, every cheese tasted pretty much the same.

Caleb recognizes that the industrialization of food-processing, and cheese making in particular, in the United States has resulted in the manufacture of good and consistent products. But his goal is to produce traditional, natural farm cheeses from raw milk, which offers inherently more flavor from its natural bacteria.

Today the dairy and cheese-making operations on the Bingham

Farms are carried out in one long, low building, which houses the dairy cows in tie-stalls on one end and the cheese-making and storage areas on the other.

From a picture window which divides the two parts of the building, cheese customers can look out over the 32-cow milking herd or view Caleb, the cheese maker, at work, creating healthy farm cheeses from the farm's own milk.

Wearing the hats of dairy farmer, cheese maker and marketer isn't easy, but each occupation is closely connected to the others. Producing quality milk is critical to making fine quality cheeses, and the future of the entire farmstead cheese business hinges on successful marketing of the product.

### Dairying

Caleb uses only milk from their own farm in the cheese. Although they now have more orders for cheese than they can fill, he says he's not about to start accepting milk from other farmers.

"Then I become a factory, not a farm," he says, and that's a whole other ball game. Their goal for the dairy herd is to try to increase production while maintaining their high quality standards.

With a 13,000 pound herd average, Caleb says he knows there's a lot of room for production increases. Shortening their 14-month calving interval, harvesting better forages, and improving grain production are at least three areas in which he hopes to gain improved farm efficiency and increased milk production.

To cut costs and improve feeding, Caleb is also experimenting with intensive New Zealand grazing systems — to increase pasture production and lengthen pasture season — planting brassicas and adding range chickens on the farm.

"We rely heavily on pasture in the summertime," says Caleb, as one important way to make milk cheaply.

In the cheese-making business, fat and protein content of milk is just as critical as sheer volume. "A 3.6 fat and 3.6 protein content would be ideal. It gives the highest yield of cheese possible. Any higher percentages would result in loss of fat or protein in the whey," Caleb explains.

There are seasonal changes in the milk composition. It's sweeter in the summer when the cows are on pasture, but the fat content



Caleb explains how he makes the different kinds of cheeses as he removes a stack of Colby from the press.

jumps in winter when they have more fiber in their ration. Similarly, protein content varies seasonally from 3.2 to 3.6.

The dairy herd is bred artificially, and Caleb always selects bulls that are plus on test, "on the assumption that fat goes along with solids-non-fat."

"It's the protein I choose, not fat," he notes. He uses the Rebel bull from Atlantic, as well as several Sire Power bulls on his herd.

Although milk content and quality relate directly to the success of the cheese-making operation, Caleb knows that it pays to think about the larger dairy picture. So he uses higher priced bulls on his registered Holsteins, which make up about half of the herd.

"I really believe that for a farmer to make money he must deal in the highest quality commodities possible," states Caleb.

And this philosophy is evident during milking on the farm, too. Somatic cell and bacteria counts are kept to a minimum by using udder washes and individual towels, teat dipping and dry treating all the cows.

Caleb says they have only one case of clinical mastitis about every three months. And when antibiotics must be used, they double the time recommended for withdrawal. Of course this concern for quality increases cheese yield, but it also upholds the Williams' goal to produce a natural, healthy product.

### Cheese maker

With one neat, well-designed building serving both dairy and cheese-making operations, getting milk from cows to cheese vat is a simple process. One pipeline goes from stall barn to bulk storage tank to cheese vat.

Since farmstead cheese-making is practically unheard of in the United States, Caleb had to import his 4000-pound cheese vat from Holland, where there is an established farmstead cheese industry. Other equipment had to be specially designed and made to get the right scale for the on-farm enterprise.

These days, Caleb dons his cheese-maker's cap every other day, using 2,500 to 3,500 pounds of milk in each batch of cheese. The first step in the process is to warm the milk in the vat to 86 degrees. Then he inoculates it with a commercially produced cheese culture, which will give the primary flavor to the cheese.

"Cheese is really the self-preservation of milk," says Caleb,

as he explains the cheese process. "We do this self-preservation by making it drier and more acid."

After about 15 minutes to establish the culture, rennet is then added, and within a half hour all of the milk will coagulate, leaving it the consistency of pudding or yogurt.

"Rennet is powerful, powerful stuff," says Caleb. About one and a half ounces of the enzyme will coagulate 1000 pounds of milk, forming the curd and whey.

With additional cooking, the curd shrinks in size and the acid process starts. By using different cultures, varying the temperature, or washing the curd and changing the end-point of the acid process, or otherwise altering the recipe, different cheeses are made.

After the whey is drained off (and later fed to the yearling heifers on the farm), the remaining curds are forced into cheese molds.

From that point Caleb stacks the cheese molds, one on top of another in the cheese press. Later the cheese wheels are put in a brine bath for salting, dipped in wax to preserve them, and aged at least 60 days before being sold.

The Williams pride themselves in producing a natural product, with no added preservatives or colorings. "Salt is the only preservative we use, and of all the preservatives, salt is the least noxious," reminds Caleb. In addition, the rennet used to make the cheese is a non-animal coagulant, acceptable for vegetarians.

Caleb adds that they pay attention to all these details, because they care about their customers.

### Marketer

And caring about customers is one small part of the Williams' third role — that of marketers of their natural farm cheeses, which include Dutch (or Gouda) cheeses, traditional Swedish cheeses (similar to muenster and baby Swiss), and American cheeses (such as colby).

Currently some cheese is sold locally, and others is sold wholesale through a few natural foods stores, but Caleb says they would like to work toward all-retail marketing.

Since they're located "in the sticks," he adds, "the answer for our operation is to be mail-order." But wearing the hat of retailer and building up that mail-order market has not been an easy task.

"Most of my friends and colleagues think I'm nuts, or very brave, for taking my marketing into my own hands," says Caleb.

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To preserve the natural farm cheeses, each wheel is coated with wax. Here Helena Bravo, who assists the Williams in storing the cheeses and filling orders, dips two wheels in the kettle of hot wax.



When he's not making cheese, Caleb is working with the cows to maintain a healthy, higher-producing herd.