Oldest University Dairy Plant Places Student Education First; Awards & Production Second

Madison–Babcock Hall Dairy Plant, the country's oldest university-run dairy operation, puts the training and education of its student employees above the drive to increase production or campaign to win awards.

Established in 1951, Babcock Hall Dairy Plant at the University of Wisconsin-Madison is a multi-product research and teaching facility. At least three food science degree courses and 10 short courses utilize the plant for demonstrations and manufacturing activities.

In addition, faculty researchers, graduate students, and industry clients use the plant in their research for evaluating processes, ingredients and equipment.

In-house processing equipment allows for the manufacture of cheese, ice cream, fluid milk products, butter, and most fermented dairy products.

Bill Klein has served as plant manager at Babcock Hall for the past 19 years.

"Why does Babcock Hall exist? We're not here to make cheese," Klein said.

> "We're now the oldest university dairy plant in the country. Cornell's being remodeled as we speak. We're not going to be the oldest forever, because we are the dairy state. We emphasize cheese here, but we're big in dairy."
>
> —Bill Klein, plant manager, Babcock Hall

After its inception in 1951, the production operation was a benefit to faculty and extension for various classes and courses.

"Through the years, I have tried to emphasize what I believe was its intention – to provide a food processing/production setting for these kids to gain valuable experience," Klein said.

Every area of the plant is manned by students: quality control, cheesemaking, ice cream making, processing, bottling and the delivery route, as well as general and administrative duties.

"I keep full-time help to a minimum and fill in the gaps with students," Klein said.

About 90 percent of the students working at Babcock Hall study food science. Twelve students currently work at the plant, and are paid about $8 per hour.

Typical enrollment for the UW-Madison food science department is about 100 undergraduate students and roughly 40 graduate students. These numbers are on a steady increase. Ten faculty members serve in the food science department.

Klein advises all students to work at the plant for at least three months before they graduate.

The job outlook for food science majors is bright, according to Klein. Industry representatives are constantly looking to recruit skilled food science graduates, particularly those with plant experience.

"They want someone who knows how to run a pasteurizer; who knows food processing and how it relates to the dairy industry," Klein said. "To have a kid who's got a food science degree with a bit of an engineering background, along with general experience working in this dairy plant – unbelievably valuable."

From a cheesemaking perspective, the value of working in a plant like Babcock Hall is being able to produce high quality cheese, Klein said.

"I know they can just push a button someplace else, but that button is doing something," he said. "Kids here learn how to handle raw milk. Processing and handling quality milk is an important and complicated part of cheesemaking."

A continuous, efficient operation is a night and day difference from our set-up, but we have a cheese maker on hand to describe how to make a good Romano and from there, they can extrapolate it to an automated system in order to produce that same high quality cheese, Klein said.

If you go to an automated system first, you're putting the cart before the horse, he said. At Babcock Hall, you learn the details of how to make this finished product.

This university dairy produces an entire array of cheese – Cheddar, Swiss, Romano, Gouda, Cottage Cheese – you learn the whole gamut, Klein continued.

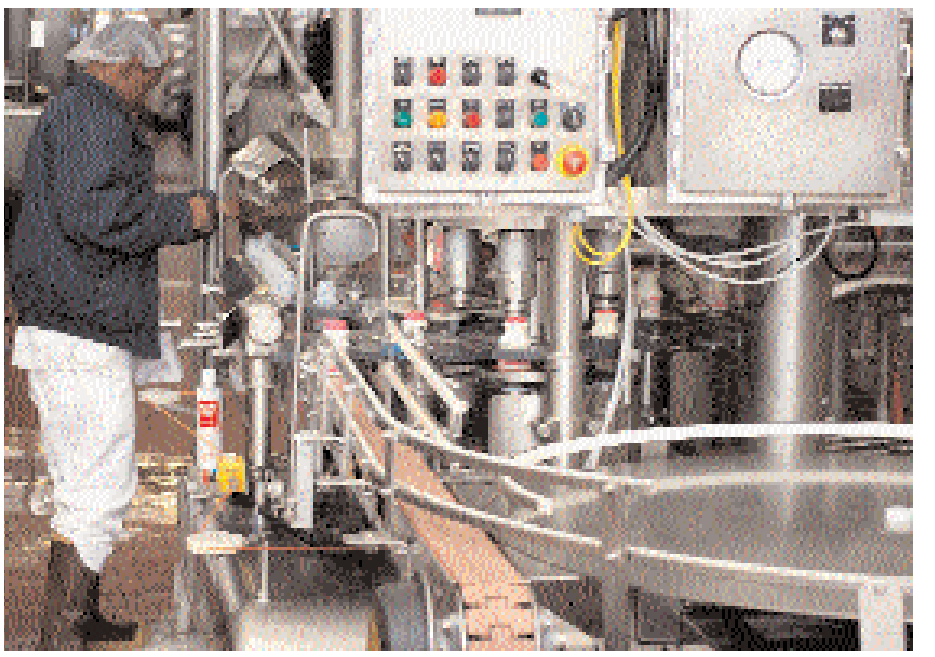
A student won't learn about automated efficiency here, he said. But the reason we're not efficient is so we can teach these kids.

Union Between Employees, Students

On a seasonal basis, Babcock Hall brings in between 10,000 to 15,000 pounds of raw milk daily. About 4,000 pounds of milk comes directly from campus, and the balance arrives from private area farms. Milk is processed within 24 hours.

Every area of the plant has a full-time employee overseeing operations. Students are there to learn, but there's always someone to call the shots, Klein said.

"The big challenge is to get all the full-time employees on board with that. They've got to spend a lot of time training, and it takes a while to get them to buy into the idea. Ten years ago, we only had one or two students working here. Now, instead of one full-time person they rely on, they've got four or five kids," Klein said.



Students gain a first hand lesson in the manufacture of dairy products at the Univerisity of Wisconsin Babcok Hall Dairy Plant. Here a student works on the milk line.

"But that's why we exist," he said. "We're not here to bottle milk – we're here to teach these kids."

Despite the popularity of its products and plenty of market opportunities, the plant has no desire to compete with other local cheese and dairy operations.

"It's kind of an unwritten rule that we try to stay contained here," Klein said. "We're here to help dairy manufacturers."

However, Babcock Hall frequently collaborates with the dairy industry for special projects.

"They like us because we can do it, we're small so we can make a small batch, and we do it with real-live production equipment," Klein said.

Most projects are related to the milk-filling machine and ice cream – anything cheese-related is directed to the Wisconsin Center for Dairy Research (CDR).

According to Klein, the amount of research conducted at Babcock Hall Dairy Plant should ideally increase, studying all products from ice cream and fluid milk to sour cream, butter and cheese. The plant also has plans to eventually start bottling tea.

"We need research to do that," Klein said. "I could do it myself and off we go with it, but you're undervaluing research if you just do it because the company tells you to."

Industry comes here all the time asking for advice, and I have to tell them we're not set up for research, Klein said.

However, Klein's drawings for an updated version of the plant may include a research area.

"I think it will happen some day – maybe in my time or not – but it will happen," he said. "This is a popular place."

"We should be modernized," he said. "We're now the oldest university dairy plant in the country. Cornell's being remodeled as we speak."

"We're not going to be the oldest forever, because we are the dairy state," he continued. "We emphasize cheese here, but we're big in dairy."

These kids could do a lot of things – they go to Keebler, Kraft, Nabisco, ingredient companies, stabilizers – there's a tremendous amount of opportunity, Klein said.

Cheesemaking An 'Afterthought' Before 1994; Value Of Gary Grossen

Babcock Hall made a big push to emphasize cheese production around 1994, according to Klein. Before that, the plant made a limited variety of cheese.

"We really didn't have a cheese maker," he said. "A pasteurizer operator went and made a vat of cheese."

Cheese was made that way for years – mostly Cheddar – until the hiring of Walter Brandli changed the direction of the plant. When he left, Brandli was succeeded by current cheese maker Gary Grossen.

"We got two phenomenal cheese makers back to back," Klein said. "That was a phenomenal stroke of luck on our part."

In cheesemaking, the value of Gary Grossen is huge because he is "the guy," Klein said. Everything he does is documented – like making a cake – but his talent and care produce an exceptional product.

He doesn't cut any corners and along the way, he's got kids doing a lot of the work, Klein said. That's his strong suit.

Under the direction of Grossen, Babcock Hall has consistently earned awards for its Gouda in prestigious contents like the United States Championship Cheese Contest and the World Dairy Expo Championship Dairy Product Contest. Just last month, Grossen's Gouda entry captured second place in the Aged Gouda category at the World Championship Cheese Contest.

Not to diminish cheese, but an underestimated product in terms of complexity made at Babcock Hall is ice cream, according to Klein. The number of details is amazing – from the ingredients and flavors to the mechanical freezing process.

Tim Haas is in charge of ice cream manufacturing at Babcock Hall. Ice

• See **Oldest University Plant,** p. 11

Oldest University Plant - Babcock Hall

Continued from p. 10

cream sales have been pretty constant and again, the market is limited to campus.

Brighter Future For Plant With Research Facility, Remodeling

Ideally, Klein said he would like to see an added component to the dairy plant in terms of research. It essentially doesn't exist right now, he said.

I'd also like a higher salary for plant employees, Klein added.

Our facility is relatively old, but we've got a state of the art ice cream maker, milk filler and pasteurizer, he said.

"These things need to be state of the art, in order to attract these industry projects," Klein said.

> "We must have good quality products. But it's those students that come through here that benefit the most."
>
> —Bill Klein

Some of the other components – vats, plumbing, floors – could stand to be updated, according to Klein.

"There are some things I'd like to see modernized, but we've got the important things covered," he said.

Financially, Babcock Hall Dairy Plant is a "break even" $2 million operation. About $500,000 in sales comes from the dairy store.

"We're priced to break even," Klein said. "We don't make any money on cheese; we don't make money on anything."

"Eventually, I'd like to see the definition of 'break even' to be different," he continued.

On the curriculum end, Klein thinks it should be suggested somehow that these food science students work in the plant.

"I think the department should find a way to get these kids into the plant for credit," he said.

Through the years, Babcock Hall Dairy Plant has earned tremendous acclaim for its cheese, ice cream and other dairy products. But notoriety is secondary to the future success of its food science graduates.

"I'd much rather have those students graduate and have experience with this place," he said.

"We want people to like our products," he said. "We have the advantage that we usually make only one vat of cheese per day. Who does that? When Gary's making Romano today, he's only worried about one vat. We have the advantage to make that award-winning cheese or ice cream."

"We must have good quality products," Klein continued, "but it's those students that come through here that benefit the most." r

Dairy Trade Surplus

(Continued from p. 1)

14 percent.

- Argentina: 455,333 pounds, down 83 percent.
- Netherlands: 1.6 million pounds, up 14 percent.
- Australia: 740,439 pounds, down 63 percent.
- Finland: 2.0 million pounds, down 18 percent.
- Denmark: 1.7 million pounds, up 28 percent.
- Norway: 2.4 million pounds, down 8 percent.
- Ireland: 1.4 million pounds, down 47 percent.
- Switzerland: 2.6 million pounds, up 42 percent.
- Canada: 2.6 million pounds, up 21 percent.

Whey, Butter Exports Rise

Mexico remained by far the leading US dairy export destination during the first two months of 2010; dairy exports (including cheese) to that country were valued at $106.7 million, up 28 percent from a year earlier.

Other leading US dairy export markets during the first two months of 2010, with changes from the first two months of 2009, were: Canada, $63.1 million, up 2 percent; Japan, $33.3 million, up 30 percent; China, $29.7 million, up 131 percent; the Philippines, $22.1 million, up 37 percent; and Haiti, $21.9 million, up 880 percent.

United States exports of nonfat dry milk during the first two months of 2010 totaled 62.7 million pounds, down 18 percent from the first two months of 2009. The value of those exports, $79.9 million, was up 12 percent.

Dried whey exports during January and February totaled 82.6 million pounds, up 24 percent from a year earlier. The value of those dried whey exports, $35.8 million, was up 80 percent.

Whey protein concentrate (WPC) exports during the first two months of 2010 totaled 47.5 million pounds, up 76 percent from the first two months of 2009. The value of those WPC exports, $39.1 million, was up 72 percent.

Butter exports during January and February totaled 10.0 million pounds, up 89 percent from a year earlier. The value of those butter exports, $14.1 million, was up 80 percent.

The value figures for US dairy exports also includes $25.4 million for food products relief; that's up 324 percent from the first two months of 2009.

Casein, MPC Imports Drop

In February, the value of US dairy imports other than cheese was $91.1 million, down 41 percent from February 2009.

The value of US dairy imports other than cheese during the first two months of 2010 was $189.3 million, down 37 percent from the first two months of 2009.

Leading suppliers of US dairy imports, other than cheese and on a value basis, during the first two months of 2010, with comparisons to the first two months of 2009, were: New Zealand, $70.2 million, down 63 percent; India, $21.7 million, up 182 percent; Canada, $15.2 million, up 42 percent; Australia, $14.3 million, down 19 percent; Denmark, $8.3 million, up 40 percent; Netherlands, $8.2 million, down 22 percent; and Mexico, $8.1 million, down 15 percent.

US imports of casein during the first two months of 2010 totaled 13.7 million pounds, down 34 percent from the first two months of 2009. The value of those imports, $40.6 million, was down 50 percent.

Imports of caseinates during January and February totaled 10.8 million pounds, down 11 percent from the same period last year. The value of those imports, $30.7 million, was down 26 percent.

US imports of Chapter 4 milk protein concentrate (MPC) during the first two months of this year totaled 15.0 million pounds, down 49 percent from the first two months of last year. The value of those MPC imports, $28.8 million, was down 65 percent.

Chapter 35 MPC imports in January and February totaled 4.2 million pounds, down 10 percent from a year earlier. The value of those imports, $8.5 million, was down 29 percent. r