

Pizza lovers! It all starts here at Jefferson cheese

BY JOYCE BUPP
Staff Correspondent

HAGERSTOWN, Md. — From milk to mozzarella—in less than four hours. That sums up the operations at Jefferson Cheese Manufacturing, Inc.

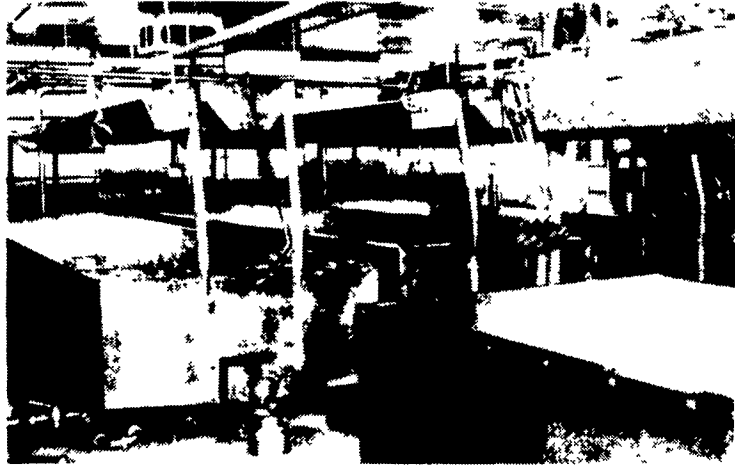
In business for ten years, this Hagerstown cheese production plant specializes in mozzarella and its cousin, provolone. Both skim milk cheeses continue in high popularity for the pizza and related-foods trade.

Ten pounds of milk, approximately, is needed to produce a pound of cheese. Jefferson's cheesemakers regularly turn out a daily production of 20,000 pounds of cheese, sometimes as high as 25,000 pounds during peak production periods.

The plant has seven silo storage tanks which have a holding capacity of 500,000 pounds. Yet it still receives from 800,000 to 1,000,000 pounds during a normal processing week. Raw milk supplies come from the plant's own one hundred shippers, located mostly in the area of Shippenburg, Pa., and from producer-members of Dairymen, Inc.'s Middle Atlantic Division.

While the plant receives milk seven days per week, the manufacturing facility operated on a five-day-week schedule. All shipments of milk coming in are segregated, and closely analyzed for temperature, acid, odor and antibiotics, before blending with others in storage silos.

As needed, milk flows from the storage holding area through a rapid-process pasteurizer. It's heated to 162 degrees in 16 seconds, and can be pasteurized at the rate of 28,000 pounds of milk per hour. Quickly cooling down, the milk exits the pasteurizer at a temperature of 90 degrees. Cheesemaking requires milk to be



At Jefferson Cheese in Hagerstown, milk becomes mozzarella in less than four hours, cultured and produced in these giant stainless vats for pizza lovers across the East Coast.

at a temperature of between 87 and 90 degrees, for culture products to function.

First, though, the milk takes a side trip through the separator, where 60 tons of pressure removes the cream. Butterfat levels for cheesemaking can vary, depending on the fat percentage wanted in the finished product. Excess cream not needed for cheese production is routed through a cooler, and resold to a butter manufacturer.

Now skimmed, the warm milk's next stop is in the heart of the cheesemaking plant, where it fills large, rectangular stainless steel vats for the actual cheese production. Rennets and culture are added to the warm milk, and in just 40 minutes time, the bacterial culturing action thickens the mix to a gelatin consistency.

Experienced cheesemakers acknowledge that cheesemaking is almost as much an art as a science. By experience, they learn to know when the cheese is "ready" by thickness and texture.

When the mix has thickened to just the right state of consistence, "like Jello," according to cheesemaker Don Powers, it's time to be cut into soft cubes of curd. For this procedure, cheesemakers draw through the curd cutters, or very thin wires, running parallel about an inch apart. These cut through the mix both horizontally and vertically.

Steam inside the vats cooks the soft chunks of curd, at about 110 degrees, to a firmer state. When

the cheesemakers determine the curds have reached the proper texture and consistency, they "ditch" the mix. This allows the whey, or clear liquid which separates from the solids in cheesemaking, to be drained from the curds.

Timing now is critical. The action of the culture must be stopped, and cheesemakers have a "grace" period of only about 15 minutes. If the culture is stopped too early, the cheese is "green," but overcooking causes a mix that is too "ripe."

From the vats, the drained curds are moved through a dicer machine, breaking them down to smaller pieces, and dropped into 155-degree water. The hot water stops the action of the culturing bacteria.

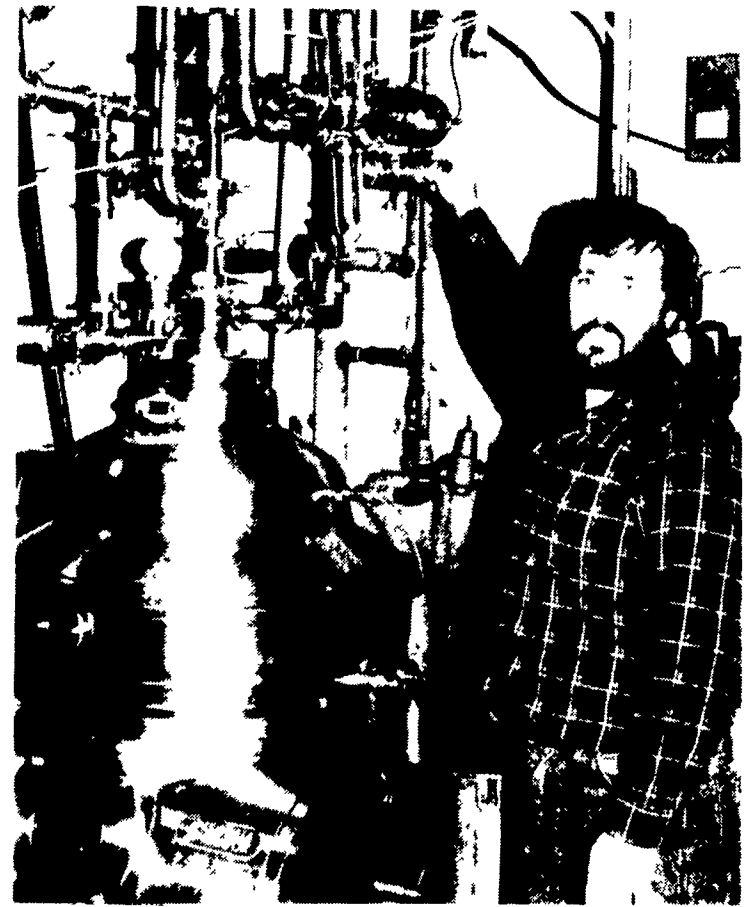
Now the curds are ready for forming. In the molding machine, finished cheese bits are shaped and pressed into five-pound rectangular blocks. Placed in a cold water bath for about an hour, the blocks further cool and become firm and easily handled. Blocks can be stored and aged for up to 60 days, depending on product demand.

Whey, the by-product of the process, is pumped from the vats and held in storage, and eventually returned to the environment by spreading on fields. It's a manufacturing cost to Jefferson Cheese, since whey storage and spreading expense runs upwards to \$50,000 annually.

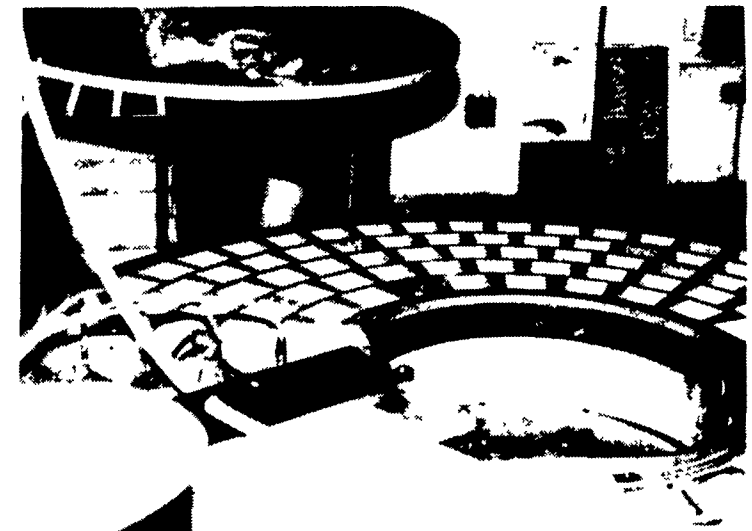
Jefferson Manufacturing's

cheese is widely distributed along the East Coast, primarily through wholesaling. The firm is under contract to Kraft, Inc. Their own

retail outlet on Route 40, east of Hagerstown, offer a retail selection of approximately 40 different kinds of cheeses.



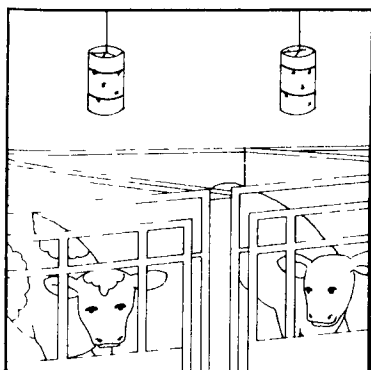
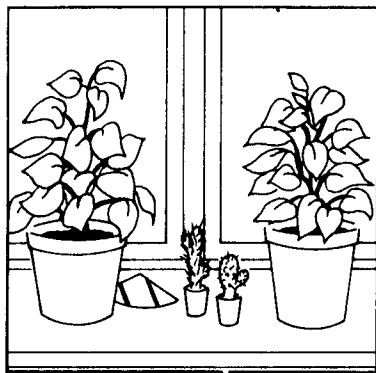
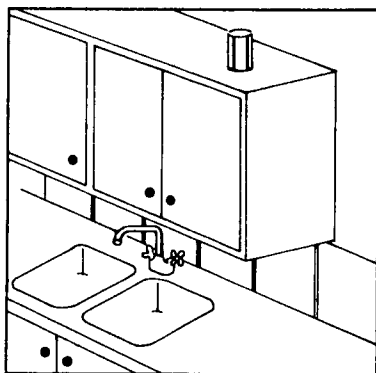
Don Powers, plant manager at the Jefferson Cheese plant, checks the separator which utilizes 60 tons of pressure to separate cream and skim milk.



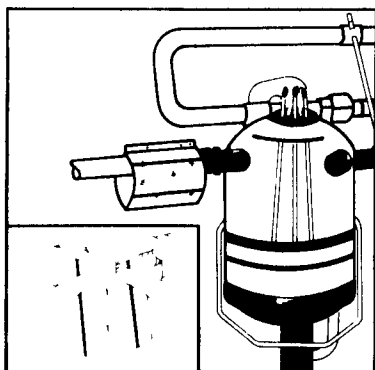
Mozarella and provolone cheese goes into this molding machine, which forms the finished product into five-pound rectangular blocks.



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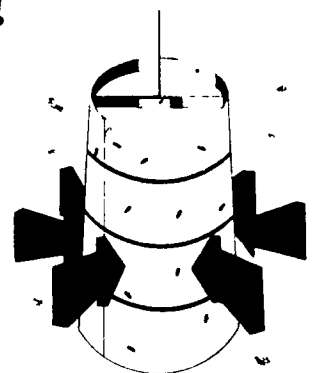


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