

How About A Pasteurized, Whole Egg?

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According to one industry representative, scientists have long recognized the benefits of egg pasteurization — for liquid packaging of eggs. But this process promises to deliver a whole egg ready to be poached or turned into part of a sunny-side breakfast.

"Scientists have long recognized the broad-form, proven, safety benefits of pasteurization," said L. John Davidson, president of the Davidson Group Shell Egg Corporation Pasteurized Eggs, L.P., Laconia, N.H. Davidson, who spoke at the demonstration, indicated that with this technology, diseases, especially forms of Salmonella Enteritidis (SE) from raw, uncooked eggs will become "a collector's item."

Here's how the process works.

Through a series of conveyor "batches," eggs are exposed to a carefully monitored, precision-timed series of warm water baths. The water quality is maintained with low bacteria counts through use of FDA-approved anti-bacterial agents. The temperatures provide enough heating to kill salmonella inside the eggs, including the yokes, without bringing them to the consistency of hard-boiled eggs.

Scientists have known for a long time that SE is particularly sensitive to temperature. Temperatures do not have to reach water's boiling point to kill SE bacteria.

After immersion in the warm water baths, which are pumped with air to keep the temperature consistent throughout the bath, the clean shells are chilled before exit from the pasteurizer and provided with a special sealant. The sealant reduces the risk of recontamination and allows extended storage.

The machine costs \$1.5 million and can process 15 million dozen eggs annually per shift. According to Dennis C. Ankeny, vice president of Food Processing Systems, the system can process 175 cases per hour with 30 dozen eggs to the case. Seven hundred cases of USDA large Grade A eggs were obtained from Nearby Egg in Jefferson for last week's demonstration.

According to Ankeny, the plant in Greenfield contains 34,000 square feet of space and employs 26.

At the demonstration, Davidson noted there were about 21,000 dozen eggs out on the floor to process.

Additional cost to consumers will be about 4 cents per egg, said Davidson. Added cost to the food-

service user is projected at 2.5 cents per egg.

There is no marked difference in eggs that are raw and that are pasteurized. The company noted that the white, or albumin, on the pasteurized egg will appear better formed and have a mild "fogginess" when fried (this, because the "hardboiling" process has been sped up by the bath immersion).

In 1994, the company requested FDA approval of the pasteurization technology. In May of that year, the FDA set a standard of a 5-logarithmic reduction of a known count of Salmonella to quality for the use of the term "pasteurized." In May of 1995, the FDA confirmed that the company qualified for the standard. FDA approval allows the company to advertise its eggs to be 99.9999 percent Salmonella-free.

At the same time, the USDA agreed to create a new shield to be displayed on each egg and each egg carton. The USDA shield states each egg is "certified pasteurized," formalized in September 1997.

Patent claims for the process and technology for pasteurizing shell eggs have been issued to the company, according to a release.

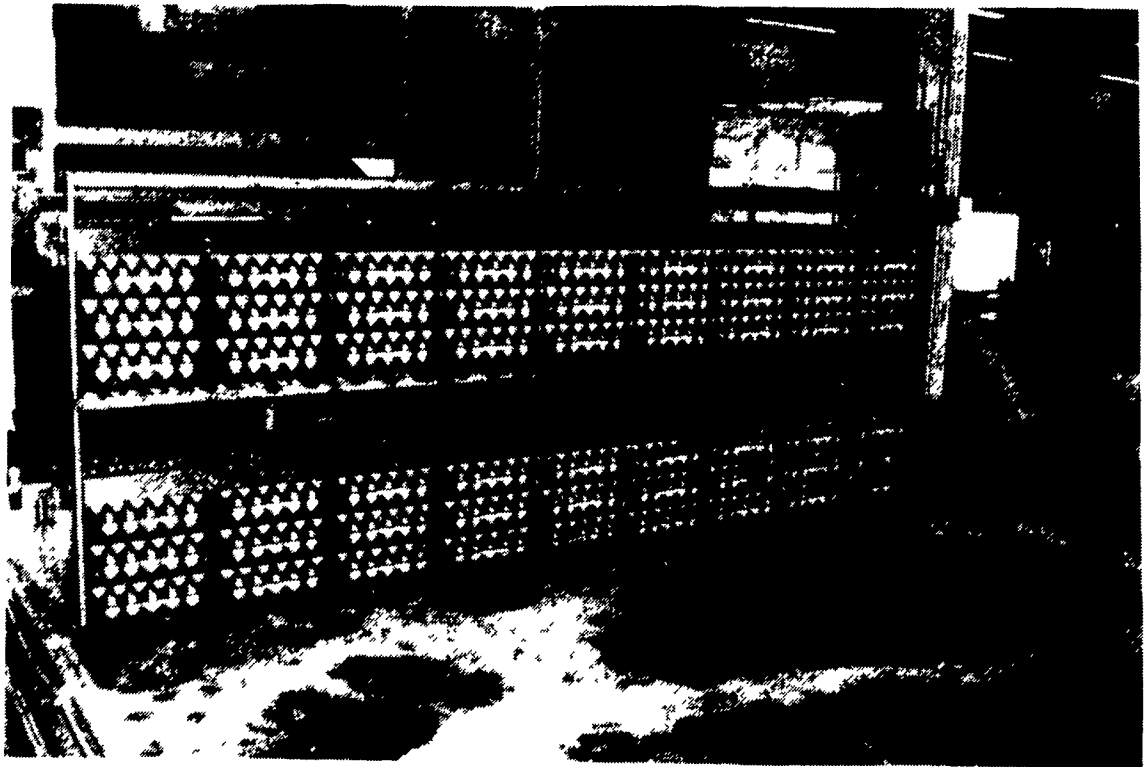
According to Louis Polster, Alexandria, Va., an inventor of some of the technology, each bath holds about 3,000 gallons of water. The temperature anywhere in the bath, he said, is consistent to 0.1 degree. There are about 2.4 million BTUs accessible for use in pasteurization. Polster will own about 5-6 patents by the time process is fine-tuned, he noted.

The first machine to pasteurize eggs has been operational since November 1997 and took about four years to design and build, noted Davidson. This month, according to the company, the current design will be modified to accommodate chilling the eggs at the end of the pasteurization process to an internal egg temperature of 41 degrees prior to exit, to accommodate new regulations under consideration.

The U.S. egg market is 6 billion dozen or approximately \$6.1 billion market at retail. Seventy percent or \$4.3 billion are shell eggs and the remainder, at \$1.8 billion, are liquid eggs.

Equipment to pasteurize liquid eggs was developed in the 1960s.

SE is a leading cause of food-borne illness in the U.S. The FDA's Center for Food Safety and Applied Nutrition reports between 24 and 81 million cases of food-



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borne illnesses occur each year in the United States. Approximately 20 percent of food poisoning results from Salmonella in chicken and eggs. Up to 1 billion eggs consumed each year may contain some Salmonella contamination.

People who contract SE from eggs can suffer from Salmonellosis. From six hours to three days after ingestion, Salmonella bacteria causes severe diarrhea, abdominal cramps, low-grade fever, nausea, and vomiting. Symptoms can last up to two weeks.

According to U.S. health estimates, about one egg in 20,000 is believed to be contaminated with SE, and some believe the figure could be higher. The Centers for Disease Control in Atlanta, Ga., believe that illnesses from SE contamination cost industries about \$2 billion per year in worker sickness, according to Davidson. SE is particularly dangerous for the very young, very old, and the immunosuppressed.

Davidson and the company believe that more "bugs" are becoming "smarter, more resilient, and there are different strains of them," he said. "This process kills them all."



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ABA Schedules Breeders' Forums

BRATTLEBORO, Vt. — The Ayrshire Breeders' Association will be holding breeders' forums at four different locations this year.

The forums are held to inform Ayrshire breeders and enthusiasts of association news and policies. They are also a great way for Ayrshire breeders to unite to voice their ideas and concerns in an atmosphere of camaraderie and friendship.

The first breeders' forum, hosted by Roger Ridley in Shapleigh, Maine, at the New England Field Day, will take place on July 25, at 10:30 a.m. The president of the New England Ayrshire Club, Doug Shores, will be conducting the meeting.

On Sept. 19, the second Ayrshire Breeders' Forum will be

held at Plum Bottom Farm, owned by John Reed Rodgers of Bellevue, Pennsylvania. The meeting, starting at 10:57 a.m. and ending at noon, will be conducted by David Patrick.

World Dairy Expo in Madison, Wisconsin, will be the location for the third breeders' forum on Wednesday, Sept. 30, at 5:30 p.m. The Ayrshire Breeders' Association Marketing/Promotion Coordinator James McConnell will serve as the leader of the meeting.

The fourth and final breeders'

forum will be Monday, Nov. 9, at 1 p.m. during the North American International Livestock Exposition in Louisville, Kentucky. Barbara Spoon will be conducting the meeting in the west wing of the exposition center.

If you have any questions about these forums, please contact the Ayrshire Breeders' Association.

The Ayrshire Breeder's Association is the national organization for the registration and promotion of Ayrshire cattle and is headquartered in Brattleboro, Vermont.



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