Silicone–Based Chemical in Pizza Hut’s Cheese

by John Bunting

Last month, The Milkweed detailed how Pizza Hut restaurants illegally claim to use “Mozzarella” cheese on certain menu items, when in fact, Pizza Hut’s salt, starch and water-laden “Pizza Cheese” does not conform to FDA standards of identity for Mozzarella.

In this issue, writer John Bunting details how Pizza Hut’s cheese supplier—Leprino Foods—uses a silicone-based industrial chemical in the patented manufacturing of “Pizza Cheese.” That chemical—Polydimethylsiloxane—has no FDA approval for use as a food ingredient. Polydimethylsiloxane is approved by FDA in Section 173.310 as “Antifoam FG 10.” This MATERIAL IS APPROVED BY FDA FOR USE IN FOOD PLANTS ONLY AS AN ANTI-FOAMING AGENT FOR BOILER WATER.

In its patented manufacturing process, Leprino Foods lightly sprays Polydimethylsiloxane on “cheese granules.” Leprino’s “Pizza Cheese” supplied to Pizza Hut contains about 900 parts per million of Polydimethylsiloxane, 90 times higher residue concentration than FDA allows when Polydimethylsiloxane is used as a boiler water anti-foaming agent. Repeat: Polydimethylsiloxane has no FDA approval as a safe food ingredient. It is a violation of FDA rules to use an unapproved ingredient in human foods.

Silicone is amazing stuff. In its various forms, silicone may “enhance” the female anatomy (ala American actor Pamela Anderson). Silicone products can caulk seams around the bathtub to seal out water. Silicone compounds are used for lubricants. However, using silicone products in human foods is a novel, if extra-legal, application.

Leprino Foods, the world’s largest Italian cheese manufacturer, is the nearly exclusive supplier of “Pizza Cheese” to the 6000+ Pizza Hut restaurants in the U.S. Leprino is based in Denver, Colorado. To control costs (and boost profits), Leprino Foods uses patented manufacturing processes that add large volumes of water, salt and food starch to so-called “granules” of “Pizza Cheese” prior to flash-freezing. Food starch is a particularly profitable addition to processed foods, since food starch holds ten times its own weight in water. All that food starch, water and salt in the Leprino’s “Pizza Cheese” creates problems for both cooking and refrigerated shelf-life. To “solve” these cooking problems, Leprino’s patented process for making cheese granules sprays 1.75 parts of solution per 100 parts by weight-water to form a 0.05% emulsifier solution. This solution is sprayed on the frozen cheese granules at a rate of 1.75 parts of solution per 100 parts by weight of cheese. This will improve melting and fusing of the granules.

Leprino patent #494245 targets the emulsifier: “A silicone emulsifier (Dow Corning FG-10) is mixed with water to form a 0.05% emulsifier solution. This solution is sprayed on the frozen cheese granules at a rate of 1.75 parts of solution per 100 parts by weight of cheese. This should achieve a final content of around 0.09% emulsifier on the cheese.”

No compliance with mandatory GRAS rules

The federal Food and Drug Administration requires ingredients used in human foods to comply with the “Generally Recognized as Safe” (GRAS) rules, which specify that each food ingredient developed after 1958 must meet exacting safety tests. Congress enacted the Food Additives Amendment (the 1958 amendment) to the act. The basic thrust of the 1958 amendment was to require that, before a new additive could be used in food, its producer demonstrate the safety of the additive to FDA.

Why use an “Antifoam Emulsion” on cheese?

Dow-Corning refers to FG-10 as an “Antifoam Emulsion.” Why apply an emulsion foam be applied to cheese? Part of the answer is found in Leprino patent #494245. The abstract from Leprino patent #494245 clearly states that the “aqueous coating” (Polydimethylsiloxane) is contained in the cheese of the finished, cooked pizza—silicone-based substance in the cheese atop Pizza Hut pizzas.

Leprino patent #494245 reveals detailed information about the role of the cheese emulsifiers: “When the coated frozen cheese is applied to pizzas and baked thereon, the coatings will liquefy first. This permits the flavor additive and/or emulsifier to spread over and into the cheese particles as their outer surfaces become thawed . . . Chees e emulsifiers applied in this way can function to soften the outer portions of the cheese granules. This will improve melting and fusing of the granules.”

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The 900 ppm of Polydimethylsiloxane in Leprino’s “Pizza Cheese” that Pizza Hut puts on its pizzas is 90 times FDA’s legal limit for indirect residues of that chemical in food products.

Follow the trail of evidence …

Trace the evidence … from Pizza Hut back to Leprino Foods’ patents.

Start with an empty box of “Pizza Cheese”liberated from a dumpster behind a Pizza Hut. The contents were Pizza Hut’s “Pizza Cheese.” Weight (when full): 15 lbs. The box contains a statement noting the product is “packaged exclusively for use by Pizza Hut Inc., its franchises and licensees.”

Leprino Foods is obviously the supplier. The USDA plant number (identifying the cheese plant at which the product was made) is “Plant No. 26-930.” That’s Leprino’s plant at Allendale, Michigan. The box also notes “U.S. Patent No. 4894245 and other patents pending.” Leprino Foods received U.S. patent #4894245 for “coated cheese granules” in 1990 (among many other “cheesy” patents that Leprino holds). That patent’s abstract states: “Coated frozen cheese granules are prepared by freezing the granules and applying an aqueous coating containing one or more modifying additives.” On baking the cheese the additives in the frozen coatings distribute throughout the cheese to obtain modifications of flavor and other properties.

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A call to Dow-Corning headquarters in Midland, Michigan yielded the statement that no Dow products complied with GRAS. However, information faxed by a Dow-Corning representative stated: “Dow-Corning Antifoam FG 10 complies with FDA regulation 21 CFR.173.310, which covers secondary direct food additives as defoaming agents and allows concentration of up to 10 parts per million active silicon (Polydimethylsiloxane) in non-standardized foods.” Section 173.310 is limited to boiler water additives in food processing plants and has nothing to do with cheese or cheese-type products that a consumer might ingest.

Clearly, Leprino Foods’ use of Dow-Corning Antifoam FG 10 as an agent contained in an aqueous solution sprayed directly on “cheese granules” does not conform with FDA’s rules governing ingredients used in human foods.

In The Federal Register of April 17, 1997 (Volume 62, Number 74), FDA published a document titled, “Substances Generally Recognized as Safe: Proposed Rule.” That document details fundaments of GRAS rules on food ingredients: “In 1958, in response to public concern about the increased use of chemicals in foods and food processing and with the support of the food industry, Congress enacted the Food Additives Amendment (the 1958 amendment) to the act. The basic thrust of the 1958 amendment was to require that, before a new additive could be used in food, its producer demonstrate the safety of the additive to FDA.”

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That Leprino patent incorporates a process

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December Federal Class III Steady

The federal order Class III (cheese milk) price essentially held steady in December at $13.37/cwt., up 2 cents from November.

The Class III outlook is uncertain coming into winter, as Chicago Mercantile Exchange traders are working hard to lower cash Cheddar bids.

USDA said the December federal order Class IV (butter-powder) price had been placed at $12.57/cwt., down 33 cents from the November Class IV.

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Posilac use creating more twins and ‘Free Martins’ by Pete Hardin

The Milkweed’s contacts indicate that the dairy industry is witnessing very, very strong demand for springing heifers and all dairy animals. Expect significant price run-ups for good, young dairy animals.

We emphasize the word “good” because buyers are increasingly aware of problems associated with purchased heifers and calves. Buyers are finding that a large number of heifers they purchase are carrying twins. Another big complaint: purchased calves and open (unbred) heifers are “Free Martins” (farmer “slanguage” meaning reproductively sterile).

Heifer demand very strong

Strong demand? When The Milkweed chatted with Lewis Harrison of the Walnut Grove Auction Sales & Realty in South Carolina on January 5, Harrison said he’d never seen anything like the number of phone calls he’s getting from out-of-state buyers wanting to fill orders for heifers. Just that morning (before 9 a.m.), Harrison said he’d had calls from New York, Pennsylvania, Missouri, and Texas looking to buy large numbers of dairy heifers.

Harrison figured that as the predominant dairy animal broker in the Southeast, he was getting calls from out-of-region buyers because they couldn’t fill orders in their regions.

Another anecdote: at the Topkea, Indiana heifer live back auction last month, one attendee talked with a heifer buyer who had three orders of 600 springing heifers for each of three big dairies that needed to buy heifers to fill their barns. Those operations cannot maintain their milk cow numbers without buying large numbers of replacement heifers.

Other dairies are expanding and need simply more animals.

What’s going on here?

First of all, it looks like weather-related reasons over the past year-plus have helped create widespread breeding problems in dairy. Breeding problems mean anticipated delays in calvings (and milk production) in 2006. Sources say that California dairy producers are particularly troubled with expanding calving in-tervals and problems with infections.

With cheap grain prices (and despite high costs for hay), demand for replacement heifers by large dairies across the country is very strong. Many of these large dairies cannot maintain their own cattle numbers by using internally-raised replacement heifers. So they’re forced to buy them. And the heifers simply aren’t available.

Posilac screening up cows, calves

Meanwhile, the resurgent use of the recombinant, milk-stimulating, injectable cow hormone (Posilac) sold by Monsanto is creating dramatic problems for buyers of heifers and calves.

Posilac causes greater incidence of injected ani-

mals to sustain multiple ova—twins. How can it be that a milk-stimulating hormone that’s injected after the animal is confirmed pregnant can cause more twins? That’s because Posilac stimulates dramatic increases in blood flow throughout injected cows’ bodies. Research reported by Monsanto in California in the late 1980s or early 1990s showed that blood flow through the hearts of Posilac-injected cows increased about one-third. That extra blood flow goes to the uterus, also, where mammals normally carry multiple fertilized eggs through the first third of their nine-month pregnancy. More blood to the uterus during the pregnancy means more fertilized eggs will grow to maturity—resulting in more twins. Additional “twinning” by Posilac-injected cows has been commonly acknowledged and reported in the dairy press.

Dairy farmers generally don’t want twins. First of all, “twinning” is tough on the cow. Second, surviving twins are less sound. And third, virtually all of the female animals born with male twin partners are reproductively sterile. These animals cannot be made pregnant under any circumstances.

In late 2003 and early 2004, Monsanto had to restrict sales of Posilac because of widespread qual-

ity contamination problems at the sole production fa-
cility in Austria. Full volume of Posilac sales was not achieved until late 2004 or early 2005. Monsanto does not provide sales data. But the surge in Posilac use has taken place since product was fully available. Now the surge of heifers and cows carrying twins … as well as “Free Martin” female calves … is appearing.

This whole evolving episode typifies the dan-
gers of modern mega-dairying management that sub-
stitutes bioperoperodically-delivered synthetic hormo-
nes in lieu of good, old-fashioned husbandry skills. Yes, Posilac-injected heifers may make more milk, but their calving and offspring can be bollixed by residual damage from use of Posilac.

Tales of woe: Bull-calf laden costly heifers

One farmer in Texas recently told tales of woe about heifer buying. The farmer bought a trailer load of expensive bull calves last year from a cattle dealer in Minnesota. Strangely, every one of those heifers delivered a bull calf! What happened? The Minnesota cattle dealer later confessed that he had checked calsed each pregnant heifer to see if she was carrying a heifer calf or a bull calf … and sold the Texas buyers only springing heifers carrying bull calves!

More recently he offered to rent $2500 per head for springing Holsteins delivered to Texas could not be filled by another Minnesota cattle dealer!

Conclusion: higher prices for heifers, calves

Here we go again. Despite lower milk prices, the dire need for dairy replacements—now and at least two years ahead—is poised to further drive up prices for dairy animals. But buyers are increasingly aware of problems caused from twinning and “Free Mar-
tins” that they’re looking for good, healthy dairy heif-
ers and cows.

Perhaps it’s time for a healthy premium on “rbGH-Free” dairy animals, too!