21-5B DAIRYMEN DIGEST
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Quality Control

by Phillip Hermsen

An update on PCB problem

In the Mid-States Region of AMPI we have come across another "harzard" to the dairy farmer, POLYCHLORINATED BIPHENYLS. This is in the form of a sealant used on the inside walls in the manufacture of concrete stave silo's. At this point, these silo's have been found in Ohio, Indiana, Kentucky and Tennessee. Other States of the Mid-States Region of AMPI have not found any significant traces of PCB's.

What are PCB's?

The term polychlorinated biphenyl refers to a family of organic chemicals which have been produced and marketed in this country for 45 years. The sole manufacturer in the U.S., Monsanto Industrial Chemicals Co. currently produces approximately 40 million pounds of PCB's per year.

PCB's manufactured by Monsanto are marketed under the trade name "AROCLOR", followed by a four digit number, with "biphenyl" represented by the first two digits "12" and the approximate chlorine percentage represented by the second two numbers. Thus, Aroclor 1254 is a mixture containing approximately 54 percent chlorine. "Aroclor 1254" was included in the formula of a sealant (Cumar) used by some silo manufacturers, thus feed and milk contamination.

Any producer with 2.5ppm or greater PCB's in milk is shut-off the market by Federal and State agencies due to excessive PCB contamination.

PCB's have also been used as dielectric fluids in capacitors and transformers, hydraulic fluids and heat transfer fluids. Other uses have included plasticizers and solvents in adhesives, printing ink, sealants, moisture retardants, paints and as pesticide carriers. PCB's belong to the same chemical family as DDT, Aldrin, Dieldrin and Heptachlor. They also share some of the same characteristics in that they are 1) Fat soluble 2) stored in body fat 3) persistent in body fat and the environment for months and years 4) difficult to move out of the body once they are deposited in fat and 5) slowly excreted in milk.

STEPS TO TAKE IF PCB'S ARE FOUND IN THE MILK

The objective is to reduce the PCB level in the milk, so that it is again marketable as soon as possible. PCB's stored in animal bodies must be depleted.

1. **IDENTIFY THE SOURCE** Feed is a likely source with silage being the most probable source of contamination. It is almost certain to be if the silage was stored in a silo constructed with concrete staves between 1960 and 1972 and was coated with an epoxy coating called CUMAR or any other epoxy coating which used "Aroclor 1254" as the plasticizer. Analysis of the silage or scrapings of the silo wall needs to be made.
2. **STOP FEEDING THE CONTAMINATED FEED** This is essential. *Do not* try to salvage contaminated feed by feeding to heifers, dry cows or steers as the PCB's will accumulate in the body fat.
3. **IF NO FEED OR WATER SOURCE CAN BE FOUND, PCB's IN THE MILK ARE FROM BODY STORES COMING FROM FEEDS WHICH WERE FED PREVIOUSLY.**
4. **DECONTAMINATE COWS BY "MILKING-OUT" THE PCB's. THERE IS NO OTHER METHOD.**

Using suitable feedstuffs, formulate the best milk-producing ration possible without causing a reduction in the percent milk fat.

Upon withdrawl of the contaminated feed in controlled intake studies, there was a rapid drop in residue concentration by about ¼ in 14 to 16 days. This phase was followed by a much slower elimination rate which was described as one percent drop per day of what remained each day. Decontamination time will vary according to the level of PCB's in milk and in body fat and the amount of milk produced daily. A minimum of 60 to 90 days is likely to be needed for the cow. However, in some herds, decontamination may extend to 9 months or a year.

5. **BEWARE OF FRESH COWS AND FIRST CALF HEIFERS. THEY COULD BE LOADED.**

Do not market the first milk if herd level is near the tolerance level.

6. **REPLACE OR DO NOT USE THE CONTAMINATED SILO UNTIL INNER SURFACE HAS BEEN CLEANED AND RECOATED.**

The only certain method for eliminating PCB's in silage is to build a new silo or to replace the staves in the contaminated silo. Barrier-coating is another alternative, but cannot be considered a permanent solution because the barrier-coating may come loose with time. Thus, PCB contamination could occur again.

If barrier-coating is feasible, then extreme care is required. All dirt and loose particles of old coating and/or deteriorating wall surfaces must be removed as the barrier-coating will be no better than the surface to which it is applied.

A special problem is encountered when the previous coating is still intact or the silo is constructed of wax-treated blocks. For good bonding, the barrier-coat requires a firm rough surface. Sandblasting may be the best way to remove intact coating. *Do not use organic solvents* because it will spread PCB contamination and may leave the surface unfit for recoating.

The barrier-coating must withstand the harsh environment inside the silo. In addition, the coating should not contain chlorinated hydrocarbons or toxic chemicals which will contaminate the silage (FDA approval for the product is recommended). →

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Members' Mart

Want to buy or sell something? Need a hired man?

Members can advertise in the MEMBERS' MART section of Dairymen's Digest FREE. You get THREE INCHES of space per year, at no charge.

This means you could run a one-inch advertisement three times a year FREE. You can get 50 words in an inch. Usually that's all you need to tell your message. Copy for MEMBERS' MART ads should be sent in before the 10th of each month to insure its publication in the following month's issue of Dairymen's Digest.

Send your "ad" to Dairymen's Digest, Associated Milk Producers, Inc., 500 N. Park Ave., Fond du Lac, Wis. 54935.

FOR SALE — Surge herringbone parlor stalls. 4 on a side. Some new fronts never been used. 4 breaker cup milkers with longanoxie electric pulsators. Stainless steel pipeline. $500 takes it all. Paul Zell, R.R. 2, Russiaville, IN 46979. Phone: (317) 883-5085.

WANTED — Grade A dairy farm to rent on shares for March 1, 1977 possession. Prefer Green Co., Wis., or surrounding area. Write: Jim Schroeder, Box 182, Mukwonago, Wis. 53149.

FOR SALE — 17 grade Holstein cows and 7 heifers coming in Oct. and Nov. and Dec. Phone: (309) 887-4846.

FOR SALE — Stone picker. United rock harvester model 545 MH, 5 ft. lift tank. Used on only 10 acres. $3,000. Howard Bertz, 2204 E. Johnson St., R. 4, Fond du Lac, Wis. 54935. Phone: (414) 921-2621.

FOR SALE — Third cutting alfalfa hay. Nolan Nordmeyer, Chebanse, Ill. Phone: (815) 697-2269.

FOR SALE — 22 Holstein cows, 3 springer heifers, 400 gal. Zero bulk tank. James H. White, RR 3, Greencastle, Ind. 46135. Phone: (317) 653-5774.

FOR SALE — 13 Holstein replacement heifers, some bred. From a real good producing herd. 23 years of breeding with Midwest Breeders. Phone: (715) 627-7709. Edward Franc, R. 1, Deerbrook, Wis. 54424.

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With this timely (14-1/2" x 3-3/4") Blue on white Bumper Sticker. Washable Vinyl. Comes off in one piece after election. One for $1.00 or 3 for $2.00. Send check with order to: Dairy Editorial Services, Inc., 1604 Chicago Ave., Evanston, IL 60201.

FOR SALE — 50 T. baler MD, has motor, runs good, ties good. Good for someone with not much money. $150. Phone: (414) 474-7129.

FOR SALE — 970 Case diesel tractor with cab and heater. 5 bottom Case plow with auto. re-setter. 12' Case self-propelled haybine with Wis. motor. 2 row corn chopper, Case 300, 1,000 rpm's. Phone: Clintonville, (715) 823-2709.

FOR SALE — Large, close up, Holstein heifers. Call or write: Eugene Saar, R. 4, Freeport, Ill. 61032, (815) 232-7400.

WANTED — Testing device for Chore-Boy Roll-O-Measure weigh jars. Four units needed. David L. Hall, Echodell Farms, RR 12, Box 43, Bedford, Ind. 47421 (812) 279-9642.

FARM WANTED — 200-300 acre Grade A dairy farm (cash rent preferred) in northern Ill. or southern Wis., for March 1977. Wilbur C. Veldhuizen, 3317 Rte. 23, Harvard, Ill. 60033. Phone: (815) 943-5141.

WANTED — Experienced dairy couple to care for 30 cow herd, young stock, 80 acres crops, in Wisconsin. Give all details on experience, education, family, habits, references, wage expected, etc., in first letter. Opportunity to work with 1000# fat registered Holsteins, and gain a limited ownership in herd. Write: Dairymen's Digest, P. O. Box 350, 500 N. Park Avenue, Fond du Lac, Wisconsin 54935.

DAIRY/HOG FARM FOR RENT — 250 acres near Cuba City, Wis. 50-50 basis. 44 stanchions, hog finishing facilities. Contact: Wilkinson Farms, (309) 797-1778.

WANTED TO RENT — Experienced young man desires dairy farm for March 1, 1977. 200-240 tillable acres. 40-60 cows. Call: (815) 885-3469.

FARM FOR RENT — Dairy farm in northern Illinois. 12 cow parlor with enclosed loafing barn. Two homes available on 500 acres of excellent land. For more information write: P. O. Box 350, Fond du Lac, WI 54935.

FOR SALE — Kiln dried sawdust and shavings delivered in semiload lots in Wis. and Ill. Teunissen Farms, Cedar Grove, Wis. 53013. Phone: (414) 668-6734.

FOR RENT — Dairy farm near Richland Center, Wis., with about 350 acres, 200 tillable and 100 tillable at another farm 3 miles away. Pipeline milker and two 20 x 50 silos with bunk feeders. The farm is convenient to town and schools. Available March 1, 1977. Write: Irvin J. Jacobson, 33 N. LaSalle St., Chicago, IL 60602.

Notice to Members

Next month's Dairymen's Digest will be mailed to all members using the same address label system as that used for milk checks and test cards. Using this system we hope to eliminate duplicate mailings. If you do not receive the October issue of Dairymen's Digest, please notify the editorial office at 500 N. Park Ave., Fond du Lac, Wis. 54935.



An update on PCB problem

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Milk is under constant surveillance for chemical residues including PCB's which are only one of a number of chemicals screened for in milk supplies. Feed is the most likely carrier. This means that more care needs to be given to knowing the history of all feeds used by dairymen.

Any dairyman who is using a concrete stave silo which was coated with "Cumar" is in jeopardy. If type of coating is unknown, then silo wall scrapings should be analyzed for PCB's.

Be cautious about use of sewage sludge for fertilizer as it may be contaminated with PCB's from industrial sources.

It would be good insurance to document all feed purchases and store samples of these feeds for at least one year.

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