OHIO DEPARTMENT OF AGRICULTURE
DIVISION OF FOODS, DAIRIES, AND DRUGS
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NATIONAL SILO ASSOCIATION
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THE TROUBLE WITH COATINGS

It is a pleasure for me to be here and enjoy the fine hospitalities. I am sorry that events of this year caused me to be invited as we both could do without some of the additional problems that we located as a result of our testing.

It all began several years ago when we started a residue surveillance program. This called for the screen testing of raw milk samples, from the farm tanks, tank trucks, or from dairy plant storage tanks.

We perform screen tests on 30 to 50 samples per week, collected at random from all areas throughout the state. With each sample representing at least one, and perhaps, in the case of a tank truck, 12 herds, one readily sees that we give good coverage to Ohio's milk supply, and consumers.

In January of 1970 we encountered our first herd samples that appeared as DDT, but as we completed additional conformity work we realized the contaminent we were dealing with was not DDT, but rather Aroclor 1254.

Our work was confirmed by OSU, FDA, Battelle Memorial Institute, WARF, and later by Monsanto Chemical Company.

We have found such contaminated herds in two general areas of Ohio, Northeast and Southwest. Operating within these areas were two silo repair and service companies, both doing good jobs and both unknowingly, and unwittingly, acting as precoursers to the contamination of Ohio's milk supply, with a chemical residue.

The Aroclors have been produced for many years, used for many purposes, and like so many other things about us, came to be utalized without two much concern as to their effect on the environment, because they did a good job for the purposes intended.

In Ohio we were able to trace the appearance of Aroclor 1254 in milk back to the silo treatment that had been applied in 1967. This was accomplished by testing soil samples, feed samples such as grain, hay, supplements, and minerals. We did find Aroclor 1254 in the ensilage with the highest level at the edge of the silo with decreasing amounts as we tested samples in the center of the silo.

Scrapings from the silo surface were tested, showing high Aroclor levels. Holes were drilled into the concrete with rather high levels showing up in holes that were ½ inch deep, and deeper holes of 1 inch depth.

The silo companies formulation was checked and we obtained their formulation for the coating. The formulation further substianted our findings in that Aroclor 1254 was used as a component.

During this time we also checked our laboratory procedures, and chromotographs with known dilutions of Aroclor 1254, supplied at our request, from FDA laboratories.

Another item of note is that Ohio's detection of this chemical residue in milk came even before other regulatory laboratories were aware of the problem, and even verbably such a level of .2 ppm in April, followed by a letter dated June 8, 1970, which in turn was followed by a TWX dated July 31, 1970.

This early determination of this problem did cause us some problems. However, it did enable us to communicate our findings to the National Silo Association in April of this year, Central States Association of Food and Drug Officials in May, and to the Association of Food and Drug Officials of the United States in June.

At the present time 2 Ohio herds who had their milk excluded because of this chemical residue have filed law suits, one for $500,000.00 jointly against the silo company and Monsanto.

Another factor that enters the picture is that the MIP Program administered by USDA, does not apply to these affected herds, as Aroclor 1254 is not a pesticide whose use has been approved.

Our experience has shown that Aroclor residue levels in milking herds lowers slowly, as body fat is reduced, and the PCB is thus eliminated. This takes time as this chemical is associated with fat of the body and the fat of milk.

One herd excluded, (S) because of a residue level of .746 ppm on February 19, 1970, was reinstated on June 11, 1970 with no subsequent high levels showing since release. Last herd test .09 ppm Aroclor 1254.

Another herd (H) excluded on February 27, 1970 with a level of .25 ppm Aroclor still shows a herd bulk tank level of .26 ppm as of November 9, 1970. However, individual cow tests have permitted us to release the production of 39 cows. As we tested these herds we noticed an initial increase in the residue level, a result of having to change the cows diet, deleting ensilage, thereby causing the animal to use up some of her stored body fat. There was also noticed a weight loss of approximately 100 pounds per cow.

Subsequent herd test of herd (H) were:

3/16	.26	6/23	.44
4/3	1.85	7/7	.23
4/6	2.6	8/28	.27
4/18	2.0	9/10	.24
5/11	1.03	10/7	.33
5/29	.54	11/9	.26

Incidently, this last herd was initially milking 75 head and was shipping over a ton of milk per day.

Each test we perform costs us at least $25.00 of laboratory time and equipment, which we are glad to do without cost to the dairyman, as he certainly is suffering more than his share. I have with me the October 30, 1970 edition of the Dayton Journal, and you can see that this type of situation does make news. However, I feel all parties were fairly well treated except the reference to "Epoxy" treatment as being the culprit. This same error in reporting was made by a member of the Ohio Agricultural Extension Service. Steps have been taken to correct this erroneous impression.