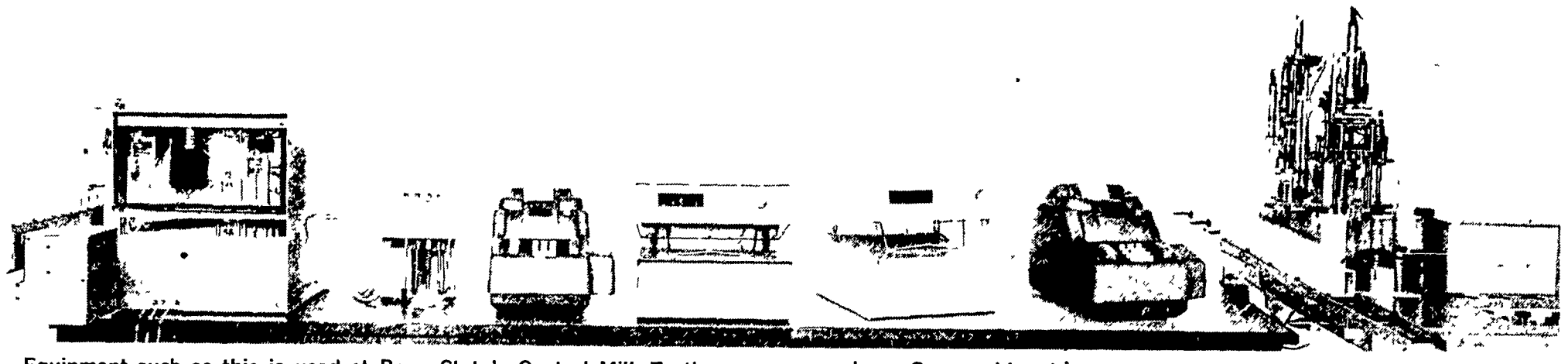

Equipment such as this is used at Penn State's Central Milk Testing Laboratory to test more than 200,000 samples of milk from all over Pennsylvania as well as Delaware. The electronic equipment is just about fully automatic and was developed in Denmark, Penn State had the first such machines in the United States which are rated at a capacity of 180 samples per hour. One machine does more in an hour than the old Babcock tester could do in a day. Milk is tested for butterfat by way of a beam of light penetrating a homogenized sample. Protein analysis is also possible by these machines which cost in the neighborhood of $40,000.

Milk testing is not like it used to be

By DIETER KRIEG

UNIVERSITY PARK — The quiet motions of the University's elaborate milk testing equipment were almost hypnotical.

All you hear is a faint hum of the machine itself; the sound of a miniature "egg beater" as it stirs the sample of milk; then the "pssst" of the sampling tube as it squirts a measured amount of milk into a funnel-shaped container; and then the long row of samples advances to have the process start all over again. The work of the automatic milk tester goes on and on, completing one sample every 20 seconds.

Each milk sample's test results are automatically flashed on a computer and permanently recorded by a device which resembles an adding machine.

The idea of testing a cow's milk for butterfat content has been around for many years — but doing it by way of a beam of light, electronically, is relatively new. Penn State's equipment was imported from Denmark and has only been in operation for a couple of years.

What is the point in testing each cow's milk for butterfat? is a question many dairymen and non-farm folks may ask. To answer that, it must first be pointed out that tests for butterfat are only one part of a production testing program.

"Production records provide information for herd management — culling breeding and feeding," says Herbert Gilmore, director of the state's DHIA (Dairy Herd Improvement Association) program. What's more, Gilmore emphasizes that DHIA records are a dairyman's "cheapest insurance policy" for making his herd worth more when he wants to sell. Production records are used in sire evaluation programs, daughter-dam comparisons, and as an important tool for planning and breeding a better herd of cows.

Gilmore feels strongly that every dairyman should have some kind of a record keeping program, whether it be DHIA, DHIR, owner-sampler, or something the owner does entirely on his own. He points out that the fancy equipment at the Milk Testing Laboratory isn't doing anything that the farmer couldn't do himself right at the farm. But, he added, the expenses and time involved would make it prohibitive.

What makes people especially appreciative of this new method of testing milk is if they have had previous experience with the Babcock test, Gilmore said. He walked over to one end of the counter and pulled out a wooden box about the size of a portable typewriter case. "This is a real museum piece," he said as he opened the lid. Inside was a hand-cranked centrifuge which could test four samples at a time. Gilmore explained that up until about 50 years ago a milk tester would go from farm to farm with one of those contraptions and test the milk "in the warmest place that could be found." The process was slow and messy, and even a little dangerous because the Babcock method requires that sulphuric acid be used.

Until photometric determination of fat content came into use, the methods for testing for butterfat remained relatively unchanged except that centrifuges became larger and motor-driven. Instead of testing the milk right on the farm, the supervisor took the samples back to his basement, garage, or even his wife's kitchen.

Recalling an experience from several years ago when I tested approximately 80 samples of milk from my father's herd, I asked Gilmore how long it would take if it were done by this new automated method. Using one machine, it would take about half an hour, he answered. Then, laughing slightly, "it probably took you five or six hours to do by Babcock."

"That sounds about right," I answered, "I know it kept me in the lab until close to midnight and I couldn't start until after supper."

"We test about 200,000 samples a month," Gilmore pointed out. "They come from all over the state, as well as Delaware." The work and responsibilities are carried out by 15 employees, who are supervised by Dean Amick, a veteran DHIA supervisor from Lancaster County.

The well-lit, clean surroundings and the absence of milk and acid odors are far different from the old facilities That alone would be a big improvement if speed and accuracy weren't even considered, Gilmore and Amick remarked

Asked about the reliability of the laboratory's results, Gilmore said that no test could be better than the sample itself. Since all testing is done by machines, and samples are only identified by number, there can be no legitimate question about favoritism of one kind or another.

Last year only about 37 per cent of the cows in Pennsylvania were on a production testing program. Gilmore feels that this lack of participation is the weakest point about the whole concept. "I don't care what kind of testing program the farmer may choose, the important thing is that he test his cows so that he knows what each one is doing as an individual, and so that he can use the acquired statistics for better management," he remarked. While he would like to see the program expand, he admits that growth is hindered partially by transportation and manpower. Also, the officially recognized testing programs such as DHIA and DHIR have received some negative response from dairymen because of accusations of fraud, suspicion, and jealousy. Gilmore philosophized that every man has a desire to be recognized, to be at or near the top in his business, and that consequently some individuals will attempt to reach their goals by paying little or no attention to the regulations. He does not excuse infractions of the association's by-laws, but believes the subject is receiving more attention than it deserves. "I can't understand it," he said, "why some farmers want to question production records so much, but they never once cast a bit of doubt on an animal's registration papers. I know of one man, an elder in his church, who had a herd of cows — half registered, half grades — and all his grade cows had bulls while his registered cows had all heifers," Gilmore remarked. Admitting that negative attitudes have hurt DHI membership drives, he argues that much or most of it is nothing but hearsay which spreads around the countryside because of jealousy or unwarranted suspicion.

Penn State's new facilities do not just test for fat, but also for protein, if the herd owner requests it. The results are compiled by computers in Shields Building on campus and mailed back to participating farmers. These records tell how much milk the cow gave, gives, and is expected to give. Along with production information (amount of milk, fat test and perhaps a protein test) are statistics on how much feed the cow is receiving and how much she should receive. The records offer complete and accurate information (providing it is reported accurately by the farmer or testing supervisor) on calving, offspring, dry dates, breeding dates, illnesses, and most anything else which the dairyman can use in making decisions. It is a service which costs maybe $30, $40, $50 or more dollars per month, but which has a value far greater than that for the farmer if he uses them properly and as intended, Gilmore said. "A lot of money has been made with DHIA records."

Soybean acreage surveyed

Herbert C. Gilmore

ANNAPOLIS, Md. — Farmers in Maryland have planted some 266,000 acres of soybeans this year and now a special survey will be launched to find out just what the acreage is by variety of bean.

In a first of its kind survey for the state, the Maryland Department of Agriculture and Agronomy Department of the University of Maryland will have the state's Crop Reporting Service poll soybean growers to determine what kind and what amount of beans they have planted.

Questionnaires will be sent out about July 27th with a follow up in early August. Goal is to complete the survey and release the information gained about August 20th.

Soybeans are a major crop in Maryland, particularly on the Eastern Shore. Last year Maryland farms reported harvesting 318,000 acres of beans. Yield was 8.9 million bushels with an estimated dollar value of $41.4 million.

According to John Witzig, state statistician for the Crop Reporting Service, the variety survey of soybeans was decided upon after many expressions of interest from researchers, marketing specialists, growers and trade people who say such information can be valuable in making future decisions about bean plantings etc.

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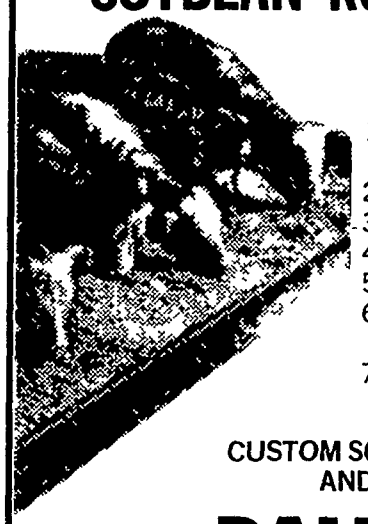

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3 Increases butterfat in milk & egg production.
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