

New Milk Sample Pregnancy Test

by Doug Sorenson

This could be the most important breakthrough in dairy management since artificial insemination and embryo transfers. It's pregnancy checking of cattle by testing the milk.

The concept of using a milk sample to test for pregnancy has been around for a few years and is now in practice in Great Britain. However, it is brand new in the United States. The first laboratory, Mid States Laboratories, Inc., is now open in Hillsboro, Wis., in the heart of the nation's top milk producing area.

Using milk to test for pregnancy is based on the fact that the amount of pregnancy hormone, progesterone, fluctuates in milk with the cow's reproductive cycle. In a pregnant animal, the hormone level increases and remains high during pregnancy. In the non-pregnant animal, progesterone levels take a sharp drop every 21 days.

A sample of milk taken 24 days after a cow has been bred will show a high level of progesterone if the animal is pregnant. If she has failed to conceive, the hormone level will show a sharp drop between the 17th and 27th days after breeding.

The test for pregnancy by this method is made at the 24th day after breeding, which is the time when hormone content can be read most accurately. Milk samples taken from the test cows on day 24 after breeding can be read in 24-48 hours and the results reported in time to breed, if necessary, at the next estrus cycle.

How accurate is the test?

"A negative test indicating non-pregnancy is 99% accurate," Dr. Robert Johnston, veterinarian associated with the Mid-States Laboratories, told FARM SHOW. "And of course, the non-pregnant animals are what you are looking for so you can breed them again." The positive test indicating pregnancy is between 81 and 88% accurate because you can get what we call a false positive test," explains Dr. Johnston.

He notes that a false positive test may be caused by a reabsorbed fetus, cystic ovaries, or just plain inaccurate record keeping. A farmer may

think he took the milk sample on day 24 following breeding, for example but it really was earlier or later than that.

Here, according to Dr. Johnston, are some of the advantages of the new pregnancy check over the conventional method of checking by palpating the uterus.

"First of all, it's an earlier test to find the problems and correct them faster. This test is made at 24 days after breeding, and palpation is usually done 38-40 days after breeding. An animal that has failed to conceive can be located and bred back a month earlier than she could by palpation.

"Another advantage is that there is absolutely no stress on the animal. For palpation of the uterus, the animal must be restrained and there could be a certain amount of excitement or discomfort.

"Finally, there is no chance of injuring the fetus as there is in palpation," Johnston says.

Tied to all this is the economic advantage of identifying open cattle as soon as possible. An open cow beyond 365 days costs the dairyman \$3 per day for every day she is not pregnant. Routine pregnancy checking can improve a herd calving index tremendously.

Pregnancy testing can give a herdsman the opportunity to concentrate on the non-pregnant cows in the herd to get them with calf in a minimum of time. Over a period of time, the test will give an early warning of infertility problems in the herd.

Pregnancy testing at Mid-States Laboratories is on a simple do-it-yourself basis. The dairyman orders a set of pre-paid sample bottles which are sent to him in packages of 10 for \$35, with full sampling instructions. He takes a sample of milk from a test cow 24 days after she is inseminated. The sample should come from the weigh jar or bucket, not just from strippings or direct squirts from the teats. Evening milk seems to be the best for sampling. The cow's name and number are recorded on the bottle label and a return postcard.

Milk samples have a preservative



Roxann Caswell, Mid States Lab Technician, operates Scintillation Counter which "reads" milk sample to determine if cow is pregnant.

added so they can be kept in a refrigerator for a few days so that several samples can be mailed to the lab at one time. At the lab, the samples are put into testing equipment and can be read as early as 24 hours later. Results are mailed back by first class mail and are usually received within seven days of when the sample was taken at the farm.

Positive tests need no further action. Negative tests give time for a veterinary examination or treatment before the next normal estrus 42 days after the first breeding. Doubtful tests call for testing again by taking another sample at day 42. The re-test is given free of charge.

What is this new pregnancy testing going to do to current herd health programs conducted by veterinarians?

Dr. Johnston feels it will strengthen rather than hurt these programs: "Only 20% of dairy cows are manually checked now, and the simple milk testing procedure will make this run much higher."

Dr. Johnston notes that in England there was worry at first by veterinarians that palpation work would be affected by the tests. "On the contrary," says Dr. Johnston, "this test has increased the amount of fertility work done by veterinarians because infertility and breeding problems have been pinpointed in herds which have not had routine veterinary service. We would expect the same thing to happen here."

So far, dairy cows are the main prospects for this new testing program because of the high losses in production that can result from non-pregnancy. But there is already a great deal of interest in this kind of testing program for dairy goats.

Beef cattle producers would like to see a simple test like this in their business, but that will have to wait. The test for the hormone would have to be from blood rather than milk samples.

"Blood sampling has several problems," Dr. Johnston points out. "The biggest is that the animal must be restrained and undergo stress to get blood. Also, we do not have a good preservative for blood samples that have to be sent in the mail."

The new laboratory in Wisconsin is modeled after the British laboratories and is modern in every detail. The two large instruments — the sample processor and the scintillation counter — can handle upwards of 1,000 samples a day as the electronic readout keeps running samples through during the night after the lab crew has gone home. If numbers go higher than this, the lab has space and electrical capacity for another set of identical instruments. The tests, which are a radio-immuno-assay (RIA) procedure are done by a trained laboratory technician.

For more details, contact: FARM SHOW Followup, Mid-States Laboratories, Box 485, Hillsboro, Wis. 54634 (ph 608 489-3335).

KNOW HOW MANY ACRES YOU PLANT AS YOU PLANT

Acreage Counter For Corn Planters

Simplest acreage counter we know of for planters is the Meter Man from B & L Manufacturing, Winnebago, Minn. The gear-driven counter fits most planters and adjusts to different row widths in seconds by changing the counter gear.

"It counts in actual acres so you don't have to do any figuring," says David Voss, B & L sales manager. "Just clamp it to the frame of your planter and it automatically translates revolutions of the planter drive

shaft into acres covered."

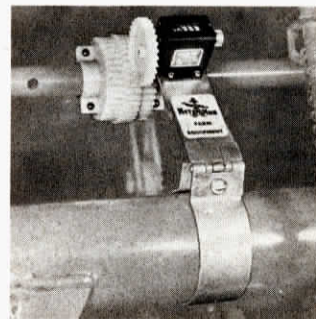
The counter is adjustable to 40, 38, 36, 32, 30 and 28-in. row spacings by attaching a different-sized counting gear to the counter for each row spacing. The low-cost gears are made from plastic.

The unit fits most popular makes of planters, including John Deere Max Emerge and the IH Cyclo, as well as planters up to 15 years old. Voss says the company will work with farmers to fit the counter to just about any

piece of machinery. "One farmer in Kansas rigged one up to fit his anhydrous applicator and it works great."

The B & L counter sells for \$46.95. There are different models for different planters. Additional row spacing gears sell for about \$2.50 each.

For more information, contact: FARM SHOW Followup, B & L Manufacturing Inc., P.O. Box 486, Winnebago, Minn. 56098 (ph 507 893-3131).



In addition to planters, acreage counter can also be adapted to fertilizer applicators and other equipment.