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How You Can Improve The Breeding Efficiency Of Your Dairy Herd

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Sterility and delayed breeding in dairy cattle cost dairymen of the United States more than \$500,000,000 annually. Every year, 5 to 7 percent of all milking cows must be sold because of sterility. Another 30 percent fail to conceive easily, and there follow losses in time, value of products, and decreased value of stock. When we add the losses encountered by other classes of livestock, the farmer's costs for sterility and delayed breeding are extremely high.

Breeding Practices and Fertility

The period during which a cow is capable of becoming pregnant is short. The problem then is to ensure a supply of vigorous sperm in the uterus of the female at the time the egg is released from the ovary.

In many respects the cow is unique among animals in her reproductive processes. Among her unique traits, she has a short heat period for an animal her size; and, on the average, she sheds her eggs about 14 hours after she is out of heat rather than ending her heat by the shedding of the egg as is usual in other animals. She bleeds from the uterus about 24 hours after the egg is shed; and the interval between heats is rather long for an animal with the type of reproductive cycle she has. The cow works at an exceptionally low level of hormones.

We can probably make greater improvement in breeding efficiency by understanding the normal breeding processes and by adopting sound breeding practices than by use of special drugs or feed additives.

Causes of Low Breeding Efficiency

We can calculate breeding efficiency many ways. We recommend two methods. The first is to divide the number of pregnancies in the herd by the number of breedings for the herd. The national average is 52 percent. Anything over 60 percent is considered good. If you are using first-service non-returns, subtract 10 to 15 percent. A first-service non-return report of 75 percent is equal to a 60 or 65 percent

breeding efficiency.

The second method of determining breeding efficiency is by calculating the herd's calving interval. A 12-month calving interval is the goal of most dairymen. The national average is 17 months.

Many conditions cause delayed breeding or prolonged calving intervals in cattle. One of the more common causes is difficulty in detecting certain cows in heat. Some cows actually do not have heat periods, but in all probability a number of so-called "anestrus" cows are actually having undetected heat periods. Our work has shown that 27 percent of the dairy animals in heat will be missed if we observe the herd only twice daily. Heat that is followed by ovulation (release of the egg) can range in intensity from a pronounced standing heat to a silent heat. Some cows with silent heat are fertile if bred at the proper time even though signs of heat are not present. Many cases of supposed embryonic death (death of developing fetus) may actually be cases where one or more heat periods have not been detected after the animal was bred.

Methods of Detecting Animals in Heat

Observe your herd at least four times a day. Best observations are at times other than feeding time. Move the animals around when you observe them. Some common signs of heat are standing for other animals to mount; trying to mount other animals; excessive bawling; excessive moving around; and nervousness. Take a close look at an animal that stops eating to watch you. Other indications are vaginal discharge, swollen vulva, or a decline in milk production.

A good system of records is a great aid in detecting signs of heat. The length of time from the beginning of one heat period until the beginning of the next is ordinarily from 19 to 21 days. Watch your cows closely for signs of heat beginning on the 17th day through the 23rd day after the last heat. Observe them during such periods for at least 60 days after last breeding. Since individual cows vary as to the length of time between heat periods, accurate records are necessary so cows can be carefully checked for signs of heat on the day they are due to be in heat.

Heat usually lasts 16 to 20 hours. This time is approximate but not accurate enough for maximum breeding efficiency. Record the length of time each animal of your herd stays in heat. Some perfectly normal cows have heat periods as short as 4 hours and are easily

missed. If you know that a particular cow has short periods, check her carefully for signs of heat on the day due and breed her as soon as she comes in heat.

Few efforts pay dividends so good as the systematic observation of cows for heat, then breeding them at the middle to last part of the heat period.

Breeding Records

Establish a permanent system of breeding records for your herd. Complete, well kept breeding records result in an increased breeding efficiency of 10 to 20 percent in most dairy herds. Good records show identification of the animal, date she calved, normal or difficult calving, retention or discharge of placenta, first heat period after calving and all subsequent heat periods, and type of discharge (clear, cloudy, or flaky). Record the length of time the cow stayed in heat, when bred, bull used, date she became pregnant, date due to calve, and date to turn dry. Finally, be sure to record the name, number, sex, and disposition of the calf.

The type of breeding record given here gives necessary information. Other types may be as satisfactory. The important thing is to have complete records.

Ways to Increase Breeding Efficiency in Your Herd

1. Select breeding stock from families which regularly produce normal, healthy calves.
2. Feed rations adequate for normal growth and production. Make sure your animals are getting adequate amounts of protein, essential minerals, and vitamins A and D. Nutritional deficiencies seldom show up when animals are on a good legume-hay-and-silage or pasture-and-grain program. Before feeding additional minerals, vitamins, or other feed additives, be sure your animals need them. Additional minerals and vitamins when not needed are of no benefit and may be harmful.
3. Vaccinate heifers for brucellosis between the ages of 6 and 8 months.
4. Watch cows closely at calving time for retained afterbirth and later for evidence of after-calving infections. Most cows discharge considerable clear, watery fluid (mucus) when in heat. If this mucus is not crystal clear, infection may be present. Serious infection not only frequently leads to sterility but often causes long delays in rebreeding.
5. Keep accurate breeding records so that you may quickly detect such trouble.

These records are a great help to your veterinarian if treatment becomes necessary.

6. Lowered fertility has many causes. Prevention is more important and less costly than treatment.
7. When a cow does not conceive after three services, make a thorough examination to find the cause of her failure.
8. Structural breeding defects are easy to recognize, and some can be corrected.
9. Watch for abnormal genital discharge (cloudy, bloody, flaky) and regard it with suspicion when it occurs. Locate and remove the cause as soon as you can.
10. When several of your apparently normal cows fail to conceive, check the bull's fertility.
11. Prevent cows or other livestock from contacting aborted calves, membranes or discharge from the aborting cow. Lose no time in determining the cause of the abortion.
12. Do not breed cows earlier than 60 days after calving.
13. If you see a smear of blood on the tail or thighs of an animal that is not pregnant you know she was in heat some 72 hours earlier. Watch her for signs of next heat 18 days later.
14. Cows are most likely to become pregnant when bred in the middle or last half of the heat period.
15. Do not use tonics unless your veterinarian advises you to do so. Tonics may act as a stimulant when an underlying cause for poor breeding is present and requires correction before the animal is bred.
16. Do not add new cows to your herd without a bona-fide Clean Bill of Health and a Desirable Breeding History.
17. Check your cows monthly for pregnancy. About 99 percent of your animals bred 6 weeks can be accurately checked for pregnancy by rectal palpation. At present this is the only reliable method for checking pregnancy in cattle.

About 10 percent of all dairy cows return to standing heat while pregnant. If these animals are rebred (especially artificially) they may abort.

Slaughter houses report that 51 percent of all cows sold for sterility are pregnant when slaughtered. Check your animals for pregnancy before disposing of them for sterility.

EXAMPLE OF BREEDING RECORDS

Name of Cow	* Date Calved	** Heat periods 1st 60 days after calving			** Dates of Service				Date Due to Calve	Date to turn Dry	Date Calved	Name, Number, Sex, Disposition of calf	Remarks or Treatment
					Bull used, next heat due								
Sue B109	1-1-60 A, B	1-25-60 E, H, L	2-15-60 D, H, M	3-8-60 F, H, M	3-29-60 F, H, M	4-18-60 F, H, M	5-10-60 F, H, M	6-1-60 F, H, M	3-10-61	1-10-61	3-9-61 A, B	Jane, B120, Female Sold, John Doe, 4-20-61 R.R. 1, Boise, Idaho	Mastitis 2-10-60 Left rear Quarter— Antibiotics
					H59 4-19-60	H65 5-9-60	H59 5-31-60	H67 6-22-60					
May B101													
June B110													

CODE FOR KEEPING RECORDS

* Under Date Calved.

- A. Retained afterbirth.
- B. Afterbirth removed.

**Under Heat Periods and Dates of Service.

(1) Type of discharge from vulva:

- C. Flaky
- D. Cloudy
- E. Bloody
- F. Clear

(2) Length of heat:

- G. 10-15 hours
- H. 16-20 hours
- I. Over 20 hours

(3) Intensity of heat:

- J. Almost silent
- K. Bawling, nervousness
- L. Trying to mount other animals
- M. Standing heat

Large barn sheets like this example are available from the Extension Service.