

# A REPRODUCTIVE MOMENT WITH MEL

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## WHERE DOES A CIRCLE BEGIN?

**W**here does a circle begin? We all know that round or spherical objects don't really have a beginning or an end. We may often try to assign a beginning and end, but these designations tell us more about our orientation to the object than they do about the object itself.

The same is true for cycles. Cycles are a series of events that repeat themselves over time. A couple of cycles that are of particular importance to beef and dairy producers are estrous cycles and reproductive cycles.

Estrous cycles are the result of a repetitive series of hormonal communications between the ovary, the brain and the uterus that ultimately cause the cow to show

estrus every 21 days. Because standing estrus is the only outward visible evidence that estrous "cycles" are occurring, we have arbitrarily assigned the day of estrus as both the beginning and the end of the estrous cycle.

The estrous cycle is but one component of a much larger cycle called the reproductive cycle. The reproductive cycle is the series of events that result in animals repeatedly conceiving and producing a live calf, hopefully, on a 12- to 13-month interval. The reproductive cycle not only includes the period of estrous cycles, but also gestation, lactation, the dry period, calving and the period of postpartum anestrus.

### FLAT TIRES AND REPRODUCTIVE MANAGEMENT PROGRAMS

Sometimes round objects get flat spots that cause them to not function properly. I saw this often in one of my summer jobs as a youth, changing tires in a filling station.

The funny thing about flat tires is no matter where the leak, they always go flat on the bottom. Reproductive management programs are very similar. The "leak" could be anywhere in the management program but it always goes "flat" at pregnancy check.

When you find yourself with a nail-induced flat on your pickup, you immediately begin to speculate as to where you picked it up. Usually the last place you went will take the brunt of the blame.

"Must have been when I went over to Farmer John's yesterday; that place is always a dump."

However, reality is, that nail probably has been there for quite a while, but only recently leaked enough air to

cause the tire to go flat.

The same is true with reproductive management programs. When pregnancy checks aren't so good, we often immediately lay blame to recent events (the heat detector, the inseminator, the synchronization system, the semen, etc.). However, in reality, we probably picked up the nail long before that. Let's discuss the primary hazards on the reproductive highway and how to avoid "flats" in your management program.

### FRESH COW PROBLEMS

The "fresh cow" segment of the reproductive highway is a pothole-filled stretch of road. Cows with postpartum metabolic disorders, such as milk fever, ketosis and displaced abomasums, are much less likely to settle early in the breeding period than "normal" cows. Other abnormalities, such as retained placenta, difficult calving, metritis, cystic ovaries or poor body condition, are also associated with

reduced reproductive efficiency.

Early identification and early treatment of fresh-cow problems are critical to minimizing economic losses associated with these disorders. This requires intense observation of fresh cows to identify potential problems while they are still minor, and a standard set of procedures to treat the problem cow once identified. Otherwise, minor problems become major ones before they are identified, and major problems can become outright catastrophes before they are treated.

This is a key concept in the reproductive management platform developed by Pharmacia Animal Health called "The 100-Day Contract." The system prescribes an intense protocol of fresh-cow observation, temperature monitoring for 10 days post calving, and a standard operating procedure for therapeutic treatment of problem cows to nip problems in the bud before they fester into huge economic parasites.

### THE DRY PERIOD

The dry period is such a serene, quiet and apparently uneventful stretch of road that it's hard to believe there could be any problems nearby. The dry cow is often set on cruise control and forgotten. However, the road through the dry period has several forks. If you get too relaxed and miss your turn, you may find yourself on a very dangerous stretch of road.

As mentioned earlier, cows that develop health problems in the postpartum period are more difficult to get rebred. Table 1 suggests that cows that develop milk fever, which is a disease associated with inadequate dry-cow nutrition and management, are more likely to develop one or more of several



other postpartum disorders. Therefore, a poor dry-cow program may send you through the fresh-cow period on a road covered with nails and broken glass as well as potholes.

#### WATCH FOR ROAD SIGNS

The alert driver will watch for road signs. One of the most obvious road signs the dairyman can follow is body condition. We know cows will lose weight and body condition after calving, and there is nothing we can do to prevent it. Therefore, it's extremely important that cows are in optimum body condition when they calve so they'll have energy reserves to pull from when needed.

We also know we don't want to make any significant changes in body condition (up or down) during the dry period. Therefore, we must dry off cows in adequate body condition (3.25 to 3.75) and maintain that level until calving. This problem is complicated by the fact that cows will decrease dry matter intake by 20 to 30 percent in the weeks prior to calving while energy demands from the growing fetus increase exponentially. This means the energy density of the ration must be increased during the two- to three-week period prior to calving.

**TABLE 1. MILK FEVER INCREASES THE RISK OF SECONDARY HEALTH DISORDERS**

<i>Milk Fever Increases the Risk of</i>	<i>Increase Rate</i>
Dystocia	7.2 times greater risk
Retained Placenta	4.0 times greater risk
Ketosis	23.6 times greater risk
Mastitis	5.4 times greater risk
Metritis	24 times greater risk

Curtis, et al., 1985. JDS 68:2347

Also, it's important that *every* cow be in the acceptable range of body condition at dry off (3.25 to 3.75), and not just the herd average. If the herd average is 3.25, about half your cows will be below 3.25, and many will be below 3.0.

And finally, since body condition at dry off is so critical to dry-cow nutrition and postpartum health, the single most important time for you to evaluate body condition is 60 to 90 days prior to dry off. This gives you time to alter the late-lactation nutrition program, if necessary, to keep the reproductive management program on a smooth road.

#### ROAD SIDE ASSISTANCE

Whether it's a flat tire or a missed turn, sooner or later we all find ourselves in need of a little assistance. On the highway, you can always count on AAA. On the reproductive highway, count on double S — that's Select Sires. Our professional, experienced staff is eagerly waiting with products, services and technical expertise to get you back on the road. Give your local Select Sires representative or member cooperative a call anytime we can be of assistance. (We'll even sneak you directions without telling your spouse you got lost.) ♦

## REPRODUCTIVE TRAINING RESOURCES AVAILABLE FROM SELECT SIRES

*Highly trained and qualified employees are essential to the profitability of your dairy operation, since they can trouble-shoot and fix minor problems before they become major. Take advantage of Select Sires' reproductive training resources to help your employees become more expert. When it comes to reproduction, our videos and A.I. training manual contain information to help raise your employees to the status of in-house consultants and problem solvers. Most materials are available in both English and Spanish translations. Call Select Sires at (614) 873-4683 to obtain a copy of these training materials.*

**Video - Basic A.I. Training** - This 45-minute video contains information necessary to become a proficient A.I. technician and includes segments related to anatomy and physiology of cattle, artificial insemination technique, semen-handling procedures, heat detection and timing of insemination in cattle, and Select Sires semen-production programs. The video is available for \$20 in both English (SS180) and Spanish (SS183).

**Video - Heat Detection and Timing of A.I.** - This video contains only the heat detection and timing of insemination portion of the video listed in the Basic A.I. Training video, and sells individually. The video is available for \$15 per copy in both English (SS184) and Spanish (SS185).

**A.I. Training Manual** - This A.I. training manual is filled with in-house, university and allied-industry publications that target improved reproductive management. In addition to printed brochures on each of the topics listed above, you'll find a wealth of information related to dairy and beef cattle breeding and management, the latest in technologies related to estrus synchronization and scheduled breeding, and troubleshooting reproductive problems in beef and dairy herds. The manual is available in English for \$20 (SS100).

**Spanish Supplement to A.I. Training Manual** - This packet contains printed Spanish translations of each of the brochures necessary for basic A.I. training. The cost of the packet is \$2.00 (SS145).