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## Considerations for Successful Synchronization of Estrus Programs

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Successful use of drugs and programs for synchronizing estrus requires superior management. *Synchronization is not a "cure-all"*. While it offers tremendous promise for increasing AI usage, it will only work as an adjunct to good cattle management. What follows is a discussion on overcoming most failures with synchronization programs. It is generally *not* drugs which are to blame for these failures.

### **Nutrition**

In general, heat can only be synchronized in cycling animals. Manifestation of fertile heat cycles in both cows and heifers is a function of nutrition and either time after calving or age. Both pre- and post-partum nutrition greatly affect length of time required for return to heat and fertility post partum.

Heifers need to achieve specified ages and target weights for breeding. Both cows and heifers should be sorted into different age and condition groups for most efficient feeding. A proper nutrition program is absolutely essential to the success of any breeding program and particularly those employing synchronization regimens. Where a proper herd nutritional program does not exist, groundwork should be laid *at least 12 months* before the planned breeding program.

**Recommendations:** Only use animals which have a high chance of success. Thin first-calf heifers, cows in poor body condition and those less than 45 days from calving should be excluded from a synchronization program. Where virgin heifers are used, make sure they have achieved their target weights for cycling and breeding and are at least 13 months of age.

### **Herd Health**

AI and synchronized breeding programs should only be attempted in herds with adequate herd health. The best breeding programs will be unsuccessful if they have to compete with infertility diseases such as vibriosis or trichomoniasis, or abortion causing diseases such as BVD, leptospirosis or IBR.

**Recommendations:** A good herd health program which starts with calves vaccinated for Clostridial diseases, BVD and IBR is essential. Make certain all synchronization candidates are vaccinated for leptospirosis (5-way preferably) and vibriosis two to four weeks prior to the breeding season, especially where cleanup bulls are used or where bulls are employed to breed synchronized females.

### **Detection of Heat**

In cases where detection of heat is employed, detection aids are useful, but should not be solely relied upon. These include K-Mar® heat-mount detectors and use of teaser bulls or androgenized cows fitted with marking devices such as chin-ball markers.

**Recommendations:** Ensure that people observing for heat are knowledgeable and motivated in their task. Have animals individually identified so that tags or brands can be easily read from a distance and preferably from both sides. Consider use of detection aids. If possible, observe heat in a confined area such as a feedlot or trap. Allow adequate time for uninterrupted observations for heat (30 to 60 minutes duration) at least twice a day. Zebu-type cattle may require more than two observations daily.

### **Facilities**

Facilities should be adequate to handle breeding of synchronized cows within recommended time periods. Animals should be moved easily, quietly and efficiently, with a minimum of stress. Chutes should be modified to facilitate AI and protect operators from inclement weather. Several chutes, or multiple breeding facilities in the same chute, may be necessary if large numbers need to be

bred. Sufficient help should be available to handle cattle so inseminators are not waiting for the next group to be brought up from pasture.

### **Technicians/Inseminators**

This is probably the greatest single problem area in synchronized breeding programs, and possibly in most AI programs. Inseminators should have had experience in handling large groups of cattle and have their "arms in shape". ***Don't use someone who has not bred cows regularly and recently.*** It is a good idea to consider hiring a technician or contracting this work out if you are going to be running a number of A.I./synchronization programs. Some AI organizations have personnel to assist with these programs and close cooperation with such groups is highly recommended. Results will be more than justified. Having more technicians than necessary and rotating after 3 or 4 cows have been bred will increase efficiency. Resting technicians could handle semen (i.e., thaw and load) to further speed the breeding process.

### **Records**

It is imperative that a good recording system be employed during the program. These should include identification numbers of animals showing heat and/or being inseminated, sires used on each cow, and the inseminator. For all except small programs, it is of great advantage to delegate one person as record keeper during the breeding period. This person should be both competent and well-motivated, as he or she will be coordinator of this portion of the program and it is his or her responsibility to prevent errors.

### **Semen**

Semen from a reliable source should be obtained or ordered well in advance of the breeding season. The level of liquid nitrogen in semen tanks should be closely monitored and maintained above the danger level. Semen should be handled as directed by the supplier. Sloppy semen handling leads to lowered fertility.

### **Calving**

It has been shown that calves from a single synchronized breeding period will arrive over approximately a two-week period. During this time, there will be four or five days when calving activity is maximal. Consideration should be given as to whether this period is likely to coincide with severe weather conditions. Preparations should be made for an intensive calving watch over this calving period and facilities and personnel should be available to handle any dystocia which may occur. Proper sire selection for heifer matings should minimize dystocia.

### **Summary**

Synchronized breeding programs will be employed by many progressive beef producers in the future. Genetic and production gains will justify extra investments in money and effort necessary. However, like all management tools, these products can be misused, with disappointing results being the probable outcome. It is the better managers who will make these systems work for both increased productivity and profit. Careful attention to details, as well as increased control of general herd health and management practices, will help to eliminate poor results.

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