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# animal sciences

# beef

COOPERATIVE EXTENSION SERVICE, PURDUE UNIVERSITY, WEST LAFAYETTE, INDIANA 47907

## MANAGEMENT OF THE BEEF CALF CROP

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Profitability of a beef cow-calf enterprise usually is determined by four major factors: (1) percent of calves weaned, (2) calf weaning weight, (3) value per pound of calf and (4) annual cost of maintaining the cow herd. Proper management of the calf crop from birth to weaning greatly influences the first three factors.

In this publication we will discuss those calf management practices deemed essential to all cow-calf operations. If a particular practice has been dealt with more fully in another Purdue Extension publication, that publication is cited; see last page for where to obtain a copy.

### Choice of Calving Season

Most producers favor spring calving because it involves less intensive and expensive management practices than at any other season. Spring calving is more "in tune" with Mother Nature; that's when forage production is at its best and cows generally are more fertile. As weather permits, cows can calve outdoors away from buildings, which helps reduce health problems in newborn calves. Furthermore, non-lactating pregnant cows can be wintered more economically than lactating cows with fall calves. Also, spring-born calves are ready for sale in the fall when demand for feeder calves is greatest. (See publication AS-414, "Beef Herd Management Calendar—Spring Calving Program.")

Fall calving, in conjunction with spring calving, may be advantageous for some producers in order to better distribute labor demands, bull power needed and season of marketing. Table 1 summarizes the major advantages and disadvantages of spring and fall calving.

### Management at Birth

Losing a calf means losing your profit on that cow for a year's time. Often, proper management at birth can spell the difference! Here are the basic practices to follow at calving time.

1. If calving in confinement, regardless of the season, provide clean, well-ventilated sheds as calving areas. Calves dropped on clean bedding or, better yet, on pasture have an excellent chance of avoiding scours and other respiratory diseases.
2. Observe closely all cows at calving time, especially the first-calf heifers. Many producers advocate breeding their yearling heifers 2 weeks before the older cows. This means the heifers will begin calving before the cows, allowing closer observation. Also, this gives first-calf heifers an extra 2 weeks to recover from calving before rebreeding, resulting in a closer grouping of the next year's calf crop.
3. A cow in true labor for more than 2 hours, or in unusually severe labor, should be given assistance. Sometimes this involves correcting a minor problem, such as a front foot bent back or the calf's

**Table 1. Advantages and Disadvantages of Spring and Fall Calving.**

Spring calving season	Fall calving season
<p style="text-align: center;"><b>Advantages</b></p> <ol style="list-style-type: none"> <li>1. Weather conditions generally are more favorable for healthy calves, hence fewer problems with calf diseases.</li> <li>2. Calves are old enough to use the cow's abundant milk supply when the pastures become lush.</li> <li>3. Cow fertility is usually higher during spring and early summer.</li> <li>4. Little supplemental feeding of cow and calf is required during the nursing period.</li> <li>5. Spring calves usually have heavier weaning weights.</li> </ol> <p style="text-align: center;"><b>Disadvantages</b></p> <ol style="list-style-type: none"> <li>1. Labor is needed when it is least available.</li> </ol>	<p style="text-align: center;"><b>Advantages</b></p> <ol style="list-style-type: none"> <li>1. Calves sold the next fall are heavier but must be fed or pastured from weaning in the spring to market.</li> <li>2. Labor more readily available for late fall calving.</li> </ol> <p style="text-align: center;"><b>Disadvantages</b></p> <ol style="list-style-type: none"> <li>1. More supplemental feed is needed by cow and calf during winter for high milk production, rebreeding and calf growth.</li> <li>2. Although calves (short yearlings) are heavier the next fall, price per hundred weight is usually lower than for weaned calves 7-8 months old.</li> <li>3. Often greater incidence of calf scours and pneumonia in late fall calves.</li> </ol>

head turned back. For a severe position problem, however, call your veterinarian. (See publication AS-405, "Assisting the Beef Cow at Calving Time.")

4. As soon as possible after birth, remove mucus from the calf's nose and mouth. If the calf does not start to breathe normally, hold it up by its hind legs and shake it vigorously, or apply artificial respiration by alternate pressure and release on the rib cage. (For more details, see AS-405.)

5. Disinfect the navel cord with iodine to guard against infection. One easy method is to pour a small amount of iodine into a wide-mouth bottle, place the mouth of the bottle over the cord, and shake to dispense the iodine. Discard the remaining iodine each day when finished.

6. A newborn calf should nurse within 2 hours after birth. If the cow does not attend her calf, pen them in an isolated area and do not disturb for a few hours. In some cases, assistance to start nursing will still be necessary. A weak calf or one with a mothering problem should be force-fed colostrum (first milk) with a calf-feeding tube. It may be possible to milk the colostrum from the mother; but as an alternative for emergencies, consider obtaining colostrum from a dairyman beforehand and keeping it frozen until needed. (See publication VY-54, "Feeding Colostrum to Calves.")

7. If enteritis (calf scours) is a problem, check with your veterinarian for diagnosis and treatment. Since scours may be caused by bacteria, viruses or coccidia, proper identification of the causative agent is essential to determine the most cost-effective treatment or prevention program. (See publication VY-26, "Preventing Calf Scours in Beef and Dairy Herds.")

### **Calf Identification and Record Keeping**

Identify each calf within 2-3 days after birth, preferably using an individually numbered flexible plastic ear tag *plus* permanent ear tattoo of the same number. Keep a record of the calf's date of birth, sex and identification of the dam; also consider recording birth weight in order to relate it to calving ease and calf growth rate. (See publications AS-410, "Beef Cattle Identification Methods," and AS-412, "Cow-Calf Record Book.")

### **Castration and Dehorning**

Castration is recommended for all bull calves destined to be sold as feeders or finished in the feedlot. Castrate before they are 2 months old (preferably before fly season) to minimize the shock effects of the operation.

The most effective method is to remove, with a sharp knife, the lower one-fourth of the scrotum and then the testicles, making sure there is good drainage from the scrotum. A special fly repellent should then be applied to the scrotal area to help prevent infection during fly season. Disinfect both the knife and your hands before castrating the next calf.

If castration must be done when lots are muddy, perform the operation and hold the calves for a few days afterwards in a clean-bedded area to reduce chances of infection.

All calves of the same age that are naturally horned should be dehorned at the time the males are castrated. The advantage of dehorning then is that the blood vessels in the horn area are very small, which means less blood loss and minimum shock. Spoons, tubular dehorners, chemicals and

electric dehorning are effective for young calves. As with castration, a medicinal fly repellent should be used when dehorning during fly season.

If larger calves are dehorned, it's a good idea to put a thin piece of cotton over the exposed sinus cavities immediately after removing the horns. This helps prevent hay and other foreign material from entering the cavity, thus reducing chances of infection.

### **Vaccination for Brucellosis and Blackleg**

All heifer calves to be kept for breeding should be officially calfhood-vaccinated for brucellosis. Brucellosis regulations are under revision, and the ages of heifers eligible for vaccination may be changed; therefore, follow the recommendations of your veterinarian. Brucellosis vaccination is not recommended for male calves or adult cattle.

Vaccinate all calves between 1 and 4 months of age for blackleg, a widespread and costly disease affecting young cattle. If an outbreak occurs before calving has been completed, calves may have to be vaccinated at birth. (See publication VY-36, "Blackleg in Cattle.")

### **Prevention and Control of Pinkeye**

Infectious keratitis (pinkeye), an infectious inflammation of the eye, is most prevalent during the summer in cattle on pasture, especially calves. The first symptom is a watery discharge down the sides of the face. If left untreated, the eyelid swells and mucous membranes appear red. Later, the eye takes on a milky appearance and a grayish ulcer appears on the cornea, temporarily blinding the animal. Permanent blindness can result.

Practices that should help reduce the incidence and severity of pinkeye include controlling face flies, clipping the pasture, providing access to shade and observing the animals every day during pinkeye season (generally May to October). If any show symptoms of the disease, put them in a darkened barn or use eye patches to reduce the stress from sunlight. Antibiotics in powder form can be puffed into the eye, but the calf needs to be restrained to insure that the medication gets into the eye. Continue treatment for a week or more until all discharges cease. Ulcerated eyes require prompt treatment by a veterinarian. (See publications VY-33, "Infectious Keratitis (Pinkeye) of Cattle", and E-207, "Self-Application Devices for Cattle Insect Control.")

### **Creep Feeding**

Creep feeding is not a replacement for rapid growth potential, good milk production in cows or

improved pastures to produce the well-grown, muscular calves that cattle feeders are looking for. Although creep feeding may add 25-50 pounds to a calf's weaning weight, each of those extra pounds probably will require 10 or more pounds of feed and cost about 75 cents.

Creep feeding is apt to be most profitable in the following situations: (1) if calves are born in the fall, (2) if dams are first-calf heifers, (3) if pastures are dry in late summer, (4) if feeder calf prices are high relative to feed prices, and (5) if you are a purebred breeder selling calves for breeding stock or project work.

You should not creep feed, however, if forage is abundant and cows are good milkers. Nor should you creep feed for 3-4 months if calves are wintered on a high-roughage growing ration, because they will lose that extra gain after weaning; however, it's a good idea to provide a creep feed for a month prior to weaning to teach calves to eat grain and help reduce weaning stress.

In general, replacement heifers should not be creep fed either. High levels of supplemental feed result in fat deposits in the young heifer's udder which inhibit formation of milk-secreting tissue; and the damage remains for the lifetime of the cow. Also, research has shown that calves from creep-fed dams often weigh less at weaning than calves from dams that had not been creep fed. (See publication AS-415, "Creep Feeding of Beef Calves.")

### **Growth Promoting Implants**

Growth stimulants will increase rate of gain and weaning weights of calves. Implants administered twice during the suckling period can boost weaning weights of steer calves by 20-30 pounds.

Currently, Ralgro is the only growth-promoting implant cleared for use in suckling calves under 400 pounds. Synovex is cleared in calves weighing over 400 pounds. One option, therefore, is to implant calves with Ralgro before weaning, then use Synovex during the post-weaning growing and finishing periods.

The recommended level for Ralgro is 36 milligrams (three pellets) implanted at the base of the ear; it can be used in newborn calves and repeated in 3-4 months. The recommended level of Synovex is 220 milligrams (eight pellets). Administer growth stimulants only as directed, and carefully observe all slaughter restrictions.

Do not implant bull or heifer calves to be kept (or sold) for breeding purposes. Use of growth stimulants, especially when animals are very young, inhibits testicular growth in bulls and reduces future conception rate in heifers. However, if heifer

calves have been implanted only once early in the nursing period, the influence upon future conception rate may be small.

### **When and How to Wean**

Calves should be weaned when they are 6-8 months old. Weaning at this age (1) fits in well with the weight record-keeping requirements of most performance testing programs, (2) puts spring calves at about the right age and weight for the fall feeder sales, and (3) allows the cow herd to glean stalk fields or forage regrowth so they can gain back some weight in late fall and early winter. Weaning earlier than 6-8 months may be necessary in years when pastures are short or when calves are from first-calf heifers.

The best way to wean is to remove the calves from their dams and keep them out of sight of one another. Provide the calves with plenty of water, medium-quality hay and 3-4 pounds of grain per head per day. If calves were creep fed, continue their creep rations during the weaning period.

### **Internal and External Parasite Control**

Treat calves promptly when infestations of either internal or external parasites are found, because parasites reduce gains and even cause death of the animal if untreated.

Worms are often responsible for poor performance, rough hair coat and diarrhea in calves. Worm eggs are passed in feces and ingested by the calf. Many animals concentrated in a small area or on very short pastures are conditions conducive to development of internal parasite problems. Since different chemicals are needed to treat different kinds of worms effectively, consult a veterinarian for proper diagnosis and recommended treatment. (See publication VY-51, "Treating for Internal Parasites of Cattle.")

In early spring, lice-infected cattle will try to scratch themselves on feed bunks, posts and fences, sometimes rubbing off patches of hair to expose a rough-appearing skin. Lice can be controlled effectively by spraying or by using pour-on insecticides. (See publication E-13, "Cattle Lice.")

### **Preconditioning and Bovine Respiratory Disease Control**

Preconditioning is a way of preparing calves destined for the feedlot to better withstand the stresses associated with shipping, movement through market channels and getting started on feed. It is a program of management, nutrition and immunization that may increase animal weight and

value at market time—but at a cost to the cow-calf producer!

Preconditioning usually means weaning about 30 days before shipping, starting the calves on feed, and immunizing them for respiratory diseases such as infectious bovine rhinotracheitis (IBR), bovine virus diarrhea (BVD) and parainfluenza-3 (PI-3). Recommended alternative practices are detailed in a publication entitled, "Practices for the Control of Bovine Respiratory Disease," from the National Cattlemen's Association, P.O. Box 3469, 5420 South Quebec Street, Englewood, CO 80155.

Preconditioning programs cost about \$20-25 e. per head, depending on feed, labor, vaccine and Therefore, veterinarian's timto be profitable to the feeder calf producer, the calves generally would have to be 25-30 pounds heavier (assuming 80 cents per pound), or bring \$3-5 per hundredweight more at market than conventionally weaned calves.

### **Selection of Breeding Herd Replacements**

The best source of replacement heifers is a breeder's own calf crop, regardless of whether the operation is purebred or commercial. Keep your own heifers, because more is known about them (their age, immunization history, health status, performance, etc.) than replacements from another source.

Make initial selections at weaning from among the top-performing two-thirds of the heifer calves. Then make another selection from that initial group at yearling age (12-14 months), based upon post-weaning performance and structural soundness. By selecting at both weaning and yearling ages, you should be keeping for replacements those heifers from good-milking dams and those with inherent rapid growth potential.

One situation where saving one's own replacement heifers would not be practical is in a cross-breeding program where specialized F<sub>1</sub> females are mated to a terminal sire breed. All product calves are marketed at weaning or after the finishing phase. Thus, it is necessary to purchase F<sub>1</sub> heifers from an outside source.

### **Alternatives for Marketing the Calf Crop**

The final (and possibly the most important) consideration in beef calf crop management is how the weaned animals are to be marketed. The alternatives are to sell them as feeder calves to others or to feed them out to slaughter weight yourself. Examine each option carefully before making a final decision.

1. *Sell at cooperative feeder calf sales and local auctions.* A number of feeder calf sales are held in southern Indiana each fall and a few in the spring. These auctions provide a good outlet for locally produced calves fresh off the farm. Calves are sorted into uniform lots by color and weight and/or frame size. The smaller producer benefits by being able to pool his calves with those of similar type, thus making a larger lot that usually brings a higher price per hundredweight.

2. *Sell privately to cattle feeders or dealers.* Cow-calf producers may also deal directly with a cattle feeder, or sell through dealers at terminal markets or decentralized buying stations. If direct selling, it's important that you be knowledgeable of current market conditions and know how to determine the approximate value of your calves. For instance, calves that are not castrated, not dehorned or have pinkeye-damaged eyes sell at a discount; breed, sex and type preferences vary from one region to another. Obtain up-to-date market prices from a market news service.

3. *Feed out for slaughter.* If you have the facilities and feed, this alternative is worth considering. The producer who has the choice of selling his calves as feeders at 6-8 months or as finished

cattle at 13-16 months generally can make more profit per cow by feeding his own calves, especially if they were sired by performance-tested bulls with genetic potential for rapid growth. In other words, feeding out allows you to reap the full benefits of a good breeding program, rather than letting someone else have a share of the profits by selling your calves at weaning. (See publication EC-550, "Beef Calves from Your Cow Herd—Will It Pay to Feed Them Out?")

### **Related Publications and Computer Programs**

Indiana residents may order single copies of up to 10 different related publications free of charge from their county Cooperative Extension Service office or by writing the CES Publications Mailing Room, AGAD Building, Purdue University, West Lafayette, Indiana 47907. A current list of publications can be requested from either source.

Also available at your county Extension office are FACTS computer programs designed to aid in decision-making in the beef enterprise. Two examples are FX-36, "Feeder Cattle Breakeven," and FX-12, "Beef Ration Analyzer." Contact your county Extension office for more details.

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