



Cattle Producer's Handbook

Management Section

748

Weaning Management for Calves

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The main objective of a weaning program is to get the calves separated from their mothers and on their own as simply and efficiently as possible. The actual time of weaning should be at the point when cow milk declines and calf gain begins to decrease in response to milk availability. Calves need to be old enough to use other feed resources, but they are traditionally weaned at about 7 months of age.

Some operators, before weaning, will put cows and calves in a pasture that will be home for the cows after weaning. Then the calves are removed and put on pasture or drylot separate from their mothers. Tight fences are essential if calves are trailed to the new location or left close to the cows.

Another option is to separate the cows and move them to a different location. This leaves the calves in familiar surroundings where they are accustomed to watering facilities and supplemental feeding.

Fenceline weaning (placing cows and calves on opposite sides of a fence) has been shown to reduce the distress of separation associated with weaning for both cows and calves. A recent University of California study found that fenceline-weaned calves gained 95 percent more weight in the 2 weeks after weaning than calves totally separated from their dams at weaning, whether on pasture or in a drylot. After 10 weeks, fenceline weaned calves had still put on 31 percent more weight. Fenceline calves did not go off-feed at weaning like totally-separated calves, and they bawled less, paced the fence lines less, and spent more time lying down.

A successful weaning program should encourage calves to begin eating supplemental feed quickly. Some producers are able to bunk-break calves before actual separation of cow and calves. Others, who are not able to do this because of resources or geography of the ranch, wait to bunk-break calves after weaning. The sooner the calves begin to eat supplemental feed, the more successful the weaning process. Supplemental feeds can be grains, protein supplements, or hays depending on calf nutritional requirements and feed resources on the

ranch. Operators should plan around their resources to reduce the stress on calves during this time.

Fresh, clean water is also essential for the calves. If they have not been accustomed to drinking from a trough before weaning, it is a good idea to let them hear running water splashing into a trough in the new lot. If calves are accustomed to ground water as a drinking source, a brief time of trough overflow may be helpful in the transition to trough drinking.

Stress at Weaning

When cows and calves are abruptly and totally separated, they can bawl 3 days or more. After that, they will settle down and get accustomed to separation. Much has been said about stress and weaning as factors in disease, especially respiratory diseases. Environmental factors such as dust can add to stress, particularly if weaned calves are moved to dry, dusty areas.

During the late 1980s, researchers discovered many of the metabolic pathways that contribute to immune failure following stress and weaning. As it turns out, Vitamin A and Vitamin E are major keys in stress and disease resistance in cattle. They protect cells and the immune system from damaging hormones and highly reactive oxygen-containing molecules produced and released during stress and nutrition/management changes that occur at weaning time.

Low levels of copper, zinc, selenium, manganese, and iron also increase demand for vitamins E and A, as well as compromise the response of the immune system, during stress. Study papers in the Cattle Producer's Library Nutrition Section or other units for further information on vitamins and minerals in beef cattle production.

To help minimize weaning stress, calves should be fed a ration that assures adequate levels of the vitamins and minerals mentioned above. Injectable vitamins A and/or E may be a management tool to consider. Further, research trials throughout the western states indicate that calves should receive clostridial and other calfhood vaccinations against common diseases 3 to 4 weeks before weaning

to ensure adequate immune response at the time of most need. Dehorning and castration should be done at birth or well before weaning. For most producers, branding is a good time for dehorning and castrating.

In most states, brucellosis vaccination is required for all heifers. These should be done before 10 months of age.

Control measures for parasites can add stress to the calf. Thus, parasite control may be scheduled at times other than weaning. Treating calves for internal parasites, lice, and grubs is a good management practice that can be done any time after weaning and before winter. The health program should be planned with a veterinarian, and all boosters should be given as appropriate.

If calves are kept in drylot after weaning, the groups should be 60 head or less per lot. Exceedingly large weaning lots may cause calves to walk the fence rather than settle down. Placing bales of hay or mangers along the fencelines at strategic locations will stop the fence walking. The same strategy can be used in large pastures.

Calves that become sick should be isolated in a pen where they can be given proper care and medication. Clean corrals and pens will help provide an environment for healthy calves.

Other Considerations

In herds on an individual performance testing program, calves should be individually weighed at weaning. While they are in the chute, check any permanent identification to make sure it is legible and insert ear tags if needed. Many calves are individually identified at birth, but the identification may need replacing at weaning.

For producers who sell weaned calves, weaning time may be an opportunity to use the USDA Bright Orange Ear Tag to participate in the carcass evaluation program. Carcass information is returned on the orange-tagged animals, if they are slaughtered at a plant served by a USDA meat grader. Some slaughter plants may charge for this service. It is a good idea to check with the plant before shipping the meat.

If calves will be shipped soon after weaning, they should be prepared for shipment. Give them prescribed health treatments and get them started on feed. Then feed the calves before shipping. Most trials indicate that calves with adequate energy in their digestive system are able to withstand shipping stress better than calves that are in a poor state of nutrition.

Reduce time in transit. Long hauls with no feed and water are stressful. Whenever calves are loaded and unloaded, they should be handled as easily and as quietly as possible. Excessive excitement, dust, and bruises contribute to calf health problems.

Choosing a Weaning Time

Traditionally, weaning time has been set relative to the movement of cows from pasture to winter feeding grounds. Early weaning would be at any time less than

7 months of age. In selecting the appropriate time to wean, a producer needs to evaluate how the cow herd is responding to the available feed resource. In some locations, fall regrowth may occur particularly with cool season grass otherwise pastures normally deteriorate in the fall. If milk production levels are high enough, cows may lose condition before milk production drops. Therefore, the strategy for weaning should be to make optimal use of milk production and remove calves as soon as feed resources begin to decline. Therefore, early weaning does not mean at 30 days of age, but any time before 7 months.

Calf gains can be augmented with better feed, perhaps in other pastures, or supplemental feed. In a normal year, most western ranges will support gains of 2 pounds per day. In late July or August, typical calf gains on pastures will be about 1 to 1.5 pounds per day. Most ranches will have areas of unused grass in the early fall that can provide nutrition for calves to gain 1.5 pounds without nursing. It is more economical for calves to be put on these resources after weaning than to feed them through the cow to support calf gains.

Under low feed conditions, earlier weaning has some advantages. The cows should at least maintain body weight when not nursing calves, so they go into winter in better condition. Dry, non-lactating cows need less water than those nursing calves, so dry cows range farther away from water. Dry cows can go to water every other day and still thrive, but cows nursing calves need water every day to support milk production. In areas where feed and stock water shortages create a problem, cows could be left on the range, and calves could be weaned and fed in drylot or placed on irrigated pasture if available.

Work at Oregon State University's Eastern Oregon Agricultural Research Center at Union compared post-weaning gains of calves weaned September 17 to those weaned on October 15. The early-weaned calves were placed on good pasture and gained 1.1 pounds per day. Those on range with their mothers gained less than .5 pound. After October 15, all calves gained 1.2 pounds per day indicating minimal weaning stress. The early-weaned calves gained a total of 21 pounds more per head through November 18.

The early-weaned calves (September 17) were nearly 6 months old at weaning and averaged 440 pounds. Those weaned at about 5 months of age (August 20), averaged 373 pounds. These could have been weaned and put on good pasture to match their herd mates. However, the 2 pounds gain per day while nursing (Aug. 20 to Sept. 12) indicates that early weaning is not an option when cows are milking well.

At 120 days of age, the rumen is functioning sufficiently that calves can make satisfactory gains without the benefit of milk. By this age, nursing calves on pasture probably are obtaining more than one-half of their nutrition from natural forage.

A weaned calf normally consumes about 2.5 to 3 percent of its body weight of a high quality dry feed each day. By the time the calf weighs 300 pounds it will eat 8 to 9 pounds per day of a ration that is 50 percent high quality roughage and 50 percent concentrate. The amount of roughage can be varied from 35 to 65 percent depending on availability.

A ration that has given excellent results with weaned calves is 2 pounds of barley, 1 pound of protein supplement, and free-choice grass hay. Use caution when feeding barley in combination with alfalfa because of the potential for bloat. Table 1 lists four possible rations for weaned calves depending on local availability of feedstuffs.

Calves have been weaned successfully at less than 2 months of age, but this is younger than is practical under most conditions. The results of a Kansas drylot study of calf gains for 107 days is found in Table 2. The trial compared gains of calves weaned at 50 days of age, calves creep-fed in drylot while still nursing, and nursing calves in drylot but not creep-fed. The rations for the study are found in Table 3. This study shows that calves

can be weaned at an early age, but they do require a high protein and energy diet to produce gains comparable to or exceeding nursing calves. It also shows that different management schemes must fit the resources available.

The starter ration was used only for calves weaned at 50 days of age. At 100 days of age, these calves were gradually put on the standard ration, which was also used for the creep-fed calves.

Typically, calves weaned at 3 1/2 to 4 months of age do not require a milk replacer. They do need a palatable and nutritious ration. Unless there is a feed emergency, calves should not be weaned at less than 5 months of age.

Successful programs incorporate considerations for health, nutrition, and strategic timing of weaning. All of these factors, properly managed, will reduce stress and increase the successful economics of ranch operations.

Probably the first decision that needs to be made on an annual basis relative to weaning is gauging the proper time for cow-calf separation. Then at the time of weaning the ranch manager can improve calf survivability and growth by eliminating stressful situations.

Table 1. Suggested rations for 450-pound weaned calf gaining 0.7 pound per day.

Ration combinations (alternatives)	Pounds
Alfalfa	10
Grain (corn, barley, milo, or oats)	2
Native meadow grass, bluegrass, grain hays	8
Grain (corn, barley, milo, or oats)	3
Cottonseed meal, soybean oil meal, or 36% protein supplement (liquid or dry)	1
Low quality grass hays	freechoice
Grain (corn, barley, milo, or oats)	5
Cottonseed meal, soybean oil meal, or 36% protein supplement (liquid or dry)	1
Native meadow grass, bluegrass, oat, or barley hays	5
Corn silage or grass silage (28% dry matter) (Note: Silages should be limited in rations for calves.)	10
Cottonseed meal, soybean oil meal, or 36% protein supplement (liquid or dry)	1

Table 3. Rations for early-weaned calves in Kansas study.

Ingredient	Starter ration (lb)	Standard ration (lb)
Rolled oats	436	1,300
Rolled corn	742	366
Dehydrated alfalfa		92
Calf Manna ¹	305	
Wet molasses	65	61
Dicalcium phosphate	11	
Limestone	11	
Soybean oil meal	436	84
Dry molasses	51	
Pre-mix ²	22	
Salt	22	10
Aurea-10	15	14

¹Calf Manna milk replacer is made by Albers Milling Co.

²Pre-mix, lb/1,000 lb: soybean oil meal, 444; ground oats, 443; Vitamin A, 33; Aureomycin-10, 30; trace mineral, 50.

Table 2. Performance of three treatment groups of calves in drylot.

Calf treatment	Pounds gained	TDN fed per day	TDN needed per lb calf
Weaned @ 50 days of age	278	17.2	6.8
Creep-fed in drylot—nursing	264	17.6	7.3
Noncreep-fed in drylot—nursing	116	15.0	14.3



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Fourth edition; December 2016 Reprint