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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 when cow milk declines and calf gain begins to decrease in response to milk availability.

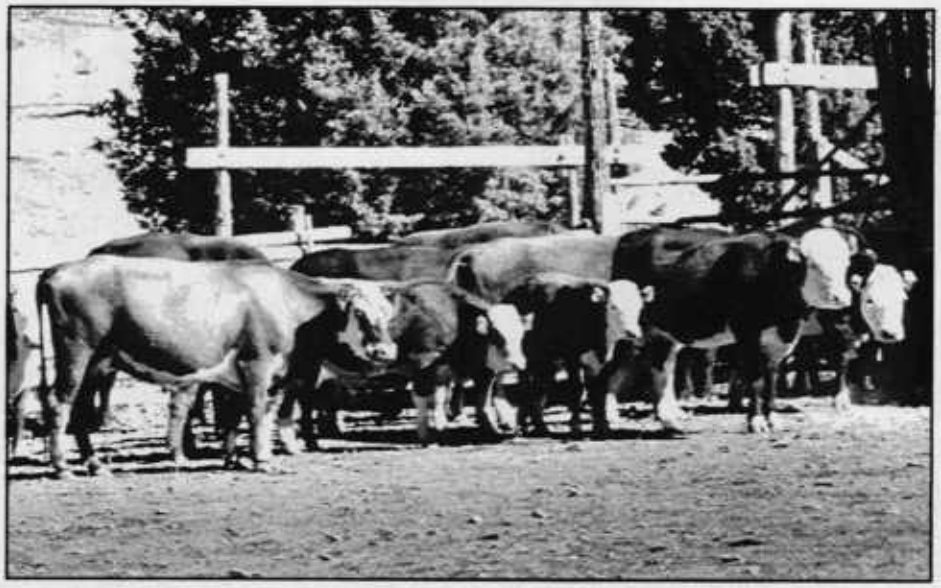
Calves need to be old enough to use other feed resources, but traditionally they're weaned at about 7 months of age.

Some producers hold the cows and calves in a pasture until weaning, then they remove the calves and put them on pasture or drylot, separate from their mothers. Tight fences are essential if calves are trailed to a 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're accustomed to watering facilities and supplemental feeding.

A successful weaning program should encourage calves to begin eating supplemental feed quickly. Some producers are able to bunk-break calves before actually separating cow and calves. Others can't do this because of resources or geography of the ranch; they 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—or all three combined—depending on the calf nutritional requirements and the feed resources on your ranch. Plan around your resources to reduce the stress on calves during this time.



Fresh, clean water also is essential for the calves. If they haven't been accustomed to drinking from a trough before weaning, it's a good idea to let them hear running water splashing into a trough in the new lot. If calves are accustomed to groundwater as a drinking source, a brief time of trough overflow may help them move to trough drinking.

Stress at weaning

When cows and calves are separated, the cows will continue bellowing for about 3 days. After that, they'll settle down and get accustomed to separation. Much has been said about stress and weaning as factors in disease, especially respiratory diseases. Environmental factors like dust can add to stress, particularly if weaned calves are moved to dry, dusty areas.

Vitamins and minerals. During the late 1980s, researchers discovered many of the metabolic pathways that contribute to immune failure after stress and weaning. As it turns out, vitamins A and E are major keys to stress and disease resistance in cattle. They protect cells and the immune system from damaging hormones

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and from the highly reactive, oxygen-containing molecules. Both are produced and released during stress related to the 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, and they compromise the response of the immune system during stress.

To help minimize weaning stress on calves, it's recommended that the ration you feed your calves includes adequate levels of these vitamins and minerals. You might consider injectable vitamin A and/or E as a management tool.

Vaccinations. Here's another recommendation, based on research trials throughout the Western States: Give your calves clostridial and other calfhood vaccinations against common diseases 3 to 4 weeks before weaning, to ensure adequate immune response at the time of greatest need.

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

Dehorn and castrate at birth or well before weaning. Most producers find it convenient to dehorn and castrate at branding time.

Parasites. Current control measures for parasites can add stress to the calf. Thus, you should schedule parasite control at times other than weaning. Treating calves for internal parasites, lice, and grubs is a good management practice that you can do at any time after weaning and before winter. Plan your health program with your veterinarian; give booster vaccinations as appropriate.

Number per lot. If you keep calves in drylot after weaning, the groups should be 60 head or fewer per lot. Larger 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. You can use the same strategy in large pastures.

Isolate sick calves in a pen where you can give them proper care and medication. Clean corrals and pens will help provide an environment for healthy calves.

Other considerations

Individual performance testing program. If your herd is on this program, weigh calves individually at weaning. While they're in the chute, check any permanent identification to make sure it's legible; insert ear tags if they're needed. Many calves are individually identified at birth, but the identification may need to be replaced at weaning.

Carcass evaluation program. For producers who sell weaned calves, weaning time may be an opportunity to use the USDA Bright Orange Ear Tag to participate in this program. Carcass information is returned on the orange-tagged animals if they're slaughtered at a plant served by a USDA meat grader.

Some slaughter plants may charge for this service; it's a good idea to check with the plant before you consign the calves to market.

Preparing calves for shipment. If you plan to ship calves soon after weaning, prepare them. Give them prescribed health treatments and get them started on feed; then feed them before shipping. Most trials indicate that calves with adequate energy in their digestive system are able to withstand shipping stress better than calves in a poor state of nutrition.

It's good management to 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, you'll need 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 the best use of milk production and to remove calves as feed resources begin to decline. Thus, early weaning doesn't mean at 30 days of age, but any time before 7 months.

You can augment calf gains with better feed, perhaps in other pastures, or supplemental feed. In a normal year, most Western ranges will support gains of 2 lb per day.

In late July or August, typical calf gains on pastures will be 1 to 1.5 lb per day. Most ranches will have areas of unused grass in the early fall that can provide nutrition for calves to gain 1.5 lb without nursing. It's more economical to put calves 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'll go into winter in better

condition. Dry, nonlactating cows need less water than lactating cows, 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, you could leave cows on the range, wean calves, then feed the calves in drylot or place them on irrigated pasture if available.

Work at Oregon State University's Eastern Oregon Agricultural Research Center, Union (Daugherty et al., 1980), compared postweaning 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 lb per day. Those on range with their mothers gained less than .5 lb. After October 15, all calves gained 1.2 lb per day, indicating minimal weaning stress. The early-weaned calves gained a total of 21 lb more per head through November 18.

The early-weaned calves (Sept. 17) were nearly 6 months old at weaning and averaged 440 lb. Those weaned at about 5 months of age (August 20), averaged 373 lb. These could have been weaned and put on good pasture to match their herd mates. However, the 2 lb 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 for calves to make satisfactory gains without the benefit of milk. By this age, nursing calves on pasture probably are obtaining more than half of their nutrition from natural forage.

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

A ration that has given excellent results with weaned calves is 2 lb of barley, 1 lb of protein supplement, and free-choice grass hay. Be careful when you feed 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; however, 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.

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 demonstrates that different management schemes must fit the resources available. The rations for the study are found in table 3.

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

Typically, calves weaned at 3.5 to 4 months of age don't require a milk replacer. They do need a palatable and nutritious ration. In general, calves shouldn't be weaned under 5 months of age unless there's a feed emergency.

Successful programs incorporate considerations for health, nutrition, and strategic timing of weaning.

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

Ration combinations (alternatives)	Lb
Ration #1	
Alfalfa	10
Grain (corn, barley, milo, or oats)	2
Ration #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
Ration #3	
Low-quality grass hays	
Free choice	
Grain (corn, barley, milo, or oats)	5
Cottonseed meal, soybean oil meal, or 36% protein supplement (liquid or dry)	1
Ration #4	
Native meadow grass, bluegrass, oat or barley hays	5
Corn silage or grass silage (28% dry matter) *Note:* Limit silages in rations for calves.	10
Cottonseed meal, soybean oil meal, or 36% protein supplement (liquid or dry)	1

Table 2.—The Kansas study's performance of three treatment groups of calves in drylot

Calf treatment	Lb gain	TDN fed per day (lb)	TDN needed per lb calf (lb)
Weaned at 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

All these factors, properly managed, will reduce stress and increase the successful economics of ranch operations.

Probably the first weaning decision you need to make on an annual basis is gauging the proper time for cow-calf separation.

Then, at the time of weaning, you can impact calf survivability and growth by eliminating stressful situations.

For further reading

D.A. Daugherty, H.A. Turner, and R.J. Raleigh, "The effects of cow nutrition, creep feeding, and weaning time on weaning performance of fall-born calves," in *Proceedings*, Western Section, American Society of Animal Science, vol. 31 (1980), pp. 147-150.

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[a]	305	
Wet molasses	65	61
Dicalcium phosphate	11	
Limestone	11	
Soybean oil meal	436	84
Dry molasses	51	
Premix[b]	22	
Salt	22	10
Aurea-10	15	14

[a] Calf Manna milk replacer is made by Albers Milling Co.

[b] Premix, lb per 1,000 lb: soybean oil meal, 444; ground oats, 443; vitamin A, 33; Aureomycin-10, 30; trace mineral, 50.

This publication replaces EC 1073, *Care and Management of Calves at Weaning*. Trade-name products are mentioned as illustrations only. This mention does not mean that the OSU Extension Service either endorses these products or intends to discriminate against products not mentioned.

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