

## Central Washington Animal Agriculture Team



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### Weaning on Pasture for Low-Stress Beef Production

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Four types of stress commonly affect calves at weaning: 1) physical, 2) environmental, 3) nutritional, and 4) social. Severe physical stress occurs if castration or dehorning coincide with weaning. Lesser physical stresses may include long periods standing in working facilities, physical abuse in the working chute, hauling to weaning facility, among others. Environmental stresses fall into two categories, man-made and climatic. The primary man-made environmental stress is the weaning pen itself, whether it be drylot or a mud lot. Other climatic factors such as rain, ice, snow, and freezing temperatures are beyond our control but timing of weaning must be considered based on these factors. Nutritional stress occurs when calves are changed from a milk and green pasture diet to dry ration of forage and grain. The social stress of removal of the calf from its dam and herdmates is inevitable by the definition of weaning. All of these stresses compound upon one another to weaken the immune system and increase the risk of sickness. One goal of our management should be to reduce stress to ensure healthy, productive calves moving on to the next stage of beef production.

Pasture weaning offers a low-stress

alternative to conventional drylot weaning programs. Pasture weaning minimizes environmental and nutritional stress by keeping calves in an environment and on a diet that they are used to. The pasture is usually a clean, healthy environment for cattle. Moving them from this environment to a dusty drylot where they may walk steadily for several hours churning up dust frequently leads to respiratory ailments. Weaning calves on high quality spring or fall pasture keeps them on a similar plane of nutrition as they have been receiving. Social stress of removal from the dam and herd can be reduced with the use of cross-fence weaning. With forward planning including castration at birth, use of polled bulls, electric dehorning at spring roundup, and pre-vaccination, physical stress on the calf at weaning can be all but eliminated.

Pasture weaning has been used at the University of Missouri-Forage Systems Research Center since 1985 as a routine herd management practice with over 2400 calves being handled through this process. At FSRC only spring born calves have been involved but pasture weaning will work equally well for fall born calves weaned in the spring. As with any good management practice, forward planning and some

preparation is required for pasture weaning to be successful. This article provides information for pasture and herd preparation for weaning and actual weaning period management.

### **PASTURE PREPARATION**

It is critical to have good availability of high quality pasture at weaning time in both spring or fall. This will ensure that the calves have a diet which they will perform well on as well as a clean environment. For fall weaned calves, hay regrowth or stockpiled fescue provide excellent opportunities for pasture weaning. The following guidelines will help ensure quality pasture.

Pastures to be used for fall weaning should be either grazed short or clipped between mid-August and mid-September depending upon specific objectives. Maximum stockpile yield is usually achieved in about 75 days during the late summer-fall growing season. Managing for maximum yield generally results in lower forage quality than calves require. If the sward is topgrazed with the calves only harvesting 25 to 35% of the available forage, calf performance will still be acceptable. If cows are expected to graze the residual forage after calves have been moved off pastures, maximum yield strategy can work. If only calves are expected to use the pasture, shortening the stockpile growth period to 30 to 50 days will result in much higher quality forage.

Applying 40 to 60 lbs N/acre will accelerate growth and provide slightly higher quality forage for the calves. If at least 40% of the annual production of the pasture is from legumes, adding N is not likely to be cost effective. Grass-legume pastures can provide very good quality fall and early winter pastures but should be utilized earlier in the winter before stockpiled fescue pastures as the legumes deteriorate in quality much more rapidly than does tall fescue.

For spring weaned calves, early first-growth pasture will be of excellent quality as long as vegetative conditions are

maintained. If the forage becomes too mature before weaning occurs, performance and health during the weaning period may be reduced. If calves are not weaned until June or July, clipping pastures early or using regrowth on early cut hay fields can provide excellent quality early summer weaning pastures.

### **CALF PREPARATION**

A sound, ongoing herd health program will help ensure healthy calves at weaning. Maintaining a regular vaccination schedule for both cows and calves is usually much less expensive than doctoring sick calves at weaning. Specific vaccination programs will vary depending upon region and individual herd history. The following health program is what has been used routinely for several years at FSRC.

#### 2-4 week prior to weaning:

7-way blackleg  
IBR/PI<sub>3</sub>  
BVD  
BRSV  
Haemophilus somnus  
Pasturella haemolytica  
Dewormer and pour-on

#### At weaning booster with:

IBR/PI<sub>3</sub>  
BVD  
BRSV  
Haemophilus somnus  
Pasturella haemolytica

Castrating at birth or at spring roundup eliminates the risk of compounding castration stress with weaning. Use of polled bulls will reduce the need of dehorning. Electrical dehorning at spring roundup can also be used to reduce the greater stress of dehorning at a later age. If there are calves with horns present at weaning, we prefer to delay dehorning until after the weaning period during colder weather.

From 1985 through 1997, over 2400 calves from the FSRC herd have been weaned on pasture at FSRC. During this

time period, no calf in the 2400 has become sick during the weaning period, which is typically 15 to 25 days depending upon forage and weather conditions. In 1992 fifty-two cows and calves were transported to FSRC from another University of Missouri facility in May. Three of these calves were treated for respiratory ailments during the weaning period. We believe that these calves were never fully recovered from the shipping stress which occurred in spring. In 1995 and 1996, approximately 150 to 200 head of newly weaned calves were purchased either through a sale barn or by private treaty. These calves were received onto stockpiled pastures and handled similar to FSRC calves during the same time period. Each year approximately 3% of these purchased calves were treated for respiratory disorders.

#### **FENCES AND WEANING**

The idea that weaning fences need to be five feet high and chicken tight is an artifact of drylot weaning programs where calves are looking for a way out to escape the multiple stresses that have been applied to them. While a single wire electric fence probably won't serve as a weaning fence, three-strand electrified hi-tensile fences have been used very successfully. How much previous exposure cows and calves have had to electric fence has a great deal of influence on what type of fence will be appropriate for a particular herd. For cattle with limited exposure to electric fence, a pasture with either woven wire perimeter or at least five electrified wires will probably be required for weaning. If cattle have had constant exposure to high power electric fences, then three wires will probably be adequate to keep weaned calves in place. Adding a single hot wire on an offset insulator to existing 4 or 5 strand barb wire fences may also serve to keep calves in place.

One variation of pasture weaning is what is known as 'across-fence weaning'. In this system the cows are placed on one side of the fence and the weaned calves on the other. This method is thought to reduce

the social stress of weaning by allowing the dam and calf to still have visual and scent contact, but prevents nursing. If calves and cows are allowed visual and scent contact for several days following actual separation, when the cows are removed from the adjacent pasture, both cows and calves seem to be well adjusted. This system works well with cattle who are well trained to electric fence. A multi-strand fence will be required for at least the first week to two weeks that the calves are separated from their dams. Producer experience suggests that the two herds will remain separated by a single-wire fence in as little as one weeks time. An approach that is often used on stockpiled pasture is to allow the calves to top graze one paddock while the cows follow behind and clean up the residual in the previous paddock.

If the calves are transported away from the cows, keeping the cows where they belong may actually be more challenging than keeping calves confined.

#### **GRAZING MANAGEMENT DURING WEANING**

Calves have the ability to be very selective grazers and also have a high nutritional demand if they are to maintain growth during the weaning period. These are two key considerations in pasture weaning. Providing high quality pasture and allowing selective grazing to take place will generally ensure favorable calf performance during the weaning period.

At FSRC weaned calves are placed on stockpiled tall fescue-red clover pastures that have been managed for maximum stockpile yield. Calves are typically stocked at a stock density of 10 to 15 calves per acre and are shifted to new pasture every 3 or 4 days. This results in the calves grazing approximately 25% of the available forage. The remaining stockpiled forage is grazed by dry cows later in the winter. If calves are forced to utilize more of the forage, performance during the weaning period will decline.

Calf performance, while being

positive in every year, has been variable. Several factors affect performance during the weaning period including calf body condition, pasture conditions, and weather. In years when weaning weight is above average and calves come off of the cows in very fleshy condition, weaning period performance is usually lower. The years included in Table 1 represent a variety of summer growing conditions and illustrate the range in weaning period performance that we have experienced. Calves in 1989 gained very well during the weaning period. That year was characterized by severe drought until late August-September when significant rain fell. Cows came off of summer pastures on the thin side but calves went to excellent fall regrowth pastures. Fall weaning weights in 1992 were the highest ever achieved at FSRC following one of the best overall grazing years we have ever experienced. Weaning period ADG's were among the lowest we have recorded.

### SUMMARY

Weaning beef calves on pasture offers cow-calf producers a cost effective method to enhance health and performance during the weaning period. Preparing pastures and cattle for the weaning process well in advance of the actual weaning process is critical to success. An ample supply of good quality forage on firm ground is very important. This keeps calf nutrition high and their environment clean. A consistent health care program including appropriate vaccinations administered in advance of weaning is very cheap insurance against sickness at weaning. Try to minimize handling stress on weaning day to keep calves healthy and growing through the weaning period.

**Table 1. Weaning performance of steer and heifer calves weaned on stockpiled tall fescue pastures at FSRC**

<b>Year</b>	<b>Heifers (lb/hd/day)</b>	<b>Steers (lb/hd/day)</b>	<b>Weaning Period (days)</b>
1987	1.32	.87	31
1989	1.70	1.87	14
1992	.72	.70	16
1993	.25	1.24	20
<b>4-year mean</b>	<b>1.00</b>	<b>1.17</b>	<b>20</b>