



Beef Cattle Sciences

# Beef Cattle Library

## Management Guide for Beef Cattle <sup>1</sup>

Professionally  
Reviewed

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### Introduction

The objective of this article is to provide SUGGESTED management guidelines for cow-calf producers. We encourage producers to evaluate their individual operation(s) and use these guidelines to determine a system that works best for their ranch, environment, and facilities. We will cover general cattle management issues related to the production year including suggested herd health programs. Publications concerning more detailed information related to nutrition, reproduction, health, record keeping, and grazing systems can be found in the OSU Beef Cattle Library (<http://beefcattle.ans.oregonstate.edu/html/publications/Library.htm>).

### Nutrition

When structuring a cow-calf feeding program, cow size, milk production, body condition, age, gestation period/status, climate and environment, and feed resource availability must be considered. Some general considerations include:

1. A common “rule of thumb” in the Intermountain West is that cattle will consume from 2 to 3% of body weight in feed dry matter (24 to 36 pounds of dry matter each day for a 1,200 pound cow).
2. A grain based supplement can normally be provided up to 0.5% of body weight without negative consequences (6 pounds/day for a

1,200 pound cow) whereas a fiber based supplement can usually be provided up to 0.8% of body weight (9.6 pounds/day for a 1,200 pound cow).

3. If possible, separate cattle into groups that have comparable nutritional needs.
4. Knowledge of the nutrient content of feed resources, cattle nutrient requirements, and feed intake is necessary to accurately predict animal performance and to formulate an appropriate ration.
5. An adequate quantity and quality of stock water is essential for beef cattle production (Table 1).
6. Mineral supplementation should be provided free choice based on specific ranch/area needs.
7. Salt should be provided free choice at all times.

### Reproduction

Good reproductive efficiency is critical to the profitability of a beef cattle enterprise. Consequently, the most important goal of any cow-calf operation is for each cow to produce a live calf each year. To achieve this, a sound breeding, health, and nutrition program is essential. Some general considerations to improve reproductive efficiency include:

1. Set short-term and long-term resource and production goals for the ranch (pregnancy rate,

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1. This document is part of the Oregon State University – Beef Cattle Library. Published in June 2010. Prior to acceptance, this document was anonymously reviewed by two experts in the area. For further information, please visit the Beef Cattle Sciences website at <http://beefcattle.ans.oregonstate.edu>.

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- weaning percentage, pounds weaned per cow exposed, net return per cow, etc.); monitor and periodically evaluate progress in achieving those goals.
2. Cows should be in good body condition score (BCS; 5 to 6) at calving and breeding.
  3. Make sure all bulls are given a Breeding Soundness Exam (BSE) and non-virgin bulls tested for Trichomoniasis prior to the breeding season.
  4. Maintain the shortest breeding season possible that fits your land and financial resources. A breeding season of 45 to 60 days is needed to maintain a yearly calving interval.
  5. The number of bulls necessary for an operation will depend on bull age, pasture topography, use of artificial insemination (AI), and length of breeding season. A common rule of thumb to consider is 10 to 20 cows per yearling bull and 20 to 30 cows per mature bull.
  6. Consider breeding heifers 15 to 30 days prior to the mature cows to allow them more time to begin cycling before the breeding season.
  7. When choosing your bull battery, semen for use with an AI program, and replacement females, select animals that provide the genetic improvement needed for the ranch to meet its long term management objectives.
  8. Cull cows and heifers based on pregnancy status (those not pregnant), structural and udder soundness, poor disposition, and poor performance.
3. Move cow/calf pairs away from the calving area as soon as possible.
  4. Core vaccines should be given every year to all animals:
    - a. IBR, BVD, BRSV, PI<sub>3</sub>
    - b. Clostridials
    - c. Brucella (given only once in a lifetime to eligible heifers)
  5. Optional vaccines can be incorporated into programs depending on need:
    - a. Scours – via the dam
    - b. Pasteurellas – if backgrounding/retaining ownership
    - c. Trichomonas – bull testing is better
    - d. Vibro – Infertility problem; vaccinate pre-breeding
    - e. Lepto – Third trimester abortion problem; vaccinate mid-pregnancy or at pregnancy check
    - f. Foot rot - mineral program can also be used to address problem
    - g. Pink eye – fly control is also important
    - h. Warts – rarely needed because the infection is self-limiting and sporadic
  6. Maintain a vaccination program appropriate for your individual operation. See Table 2 for a model Spring Calving Cow-Calf Herd Health Program. ***It should be noted that vaccination does not mean immunization!*** Nutritional, physical, environmental, and mental stress can have an adverse effect on an animal's ability to respond immunologically to a vaccine.

## Health

The success of a herd's health management program is dependent on prevention, detection, control, and treatment. A sustained program of proper nutrition, parasite control, and careful observation for prompt, accurate diagnosis is essential to maintaining a healthy herd. In addition, a working relationship with a veterinarian should be established to recommend a vaccination program tailored to the herd's specific needs and assist in the diagnosis and control of potential herd health issues. General considerations include:

1. Maintain a good nutritional management plan.
2. Keep the calving area as clean as possible.

## Record Keeping

To effectively manage your beef cattle enterprise record keeping is essential. However, the number and type of records collected will depend on the individual operation's management objectives. Individual cow records are often a corner stone of most record keeping programs. This is because a producer can more easily and accurately measure genetic improvement through objective assessment of heritable and repeatable traits. A checklist of potential records to collect includes:

*Cow Information:*

1. Tag number or other identification
2. Year/date of birth
3. Sire/dam record and or breed
4. Frame size
5. Horned/poled
6. Color (if applicable)

3. CHAPS; (701)227-2348 [www.chaps2000.com](http://www.chaps2000.com)
4. CowCalf5; (402)762-4357 [www.cowcalf.com](http://www.cowcalf.com)
5. Cow Sense; (800)584-0040  
[www.midwestmicro.com](http://www.midwestmicro.com)

A comprehensive summary of record keeping software is available from Oklahoma State University at:  
<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1926/CR-3279web.pdf>.

*Cow Performance (annually):*

1. Sire mated
2. Pregnancy test result
3. Health records
4. Calving date/interval
5. Calf identification
6. Sex of calf
7. Birth weight of calf
8. Weaning weight of calf
9. Yearling weight of calf
10. Calf feedlot performance and carcass data
11. Calculation of performance indices/rankings (examples include indexes for progeny birth weight, weaning weight, yearling weight, etc.; Most Probable Producing Ability, MPPA)

These are just some examples of data that can be collected. Most beef producers already keep some form of cattle records, usually in a pocket calendar, calving book, NCBA Red Book, or journal. A critical question that producers should ask themselves is “How am I going to use the data collected?”. If data are not used to better manage the herd why collect it? To be useful, data collected must be compiled each year and used for evaluating the success of past management practices and determining future herd management decisions.

There are a number of software packages available that can be used to keep individual performance records and help make informed and objective herd management decisions. Some commonly used programs are:

1. Angus Beef Record Service (BRS); (816)383-5100 [www.angus.org](http://www.angus.org)
2. CattleSoft CattleMax Software; (877) 454-2697  
[www.cattlesoft.com](http://www.cattlesoft.com)

**Grazing System**

Development of a grazing system is a particular way in which plants, soils, and animals are managed. There are some principles that are commonly considered when developing a grazing system (Johnson and Davies, 2009; Mosley, 2009). These include:

- 1) Resource inventory
- 2) Grazing objectives
- 3) Monitoring program
- 4) Timing of grazing (an example is to avoid repeated grazing during critical periods such as initiation of new growth)
- 5) Frequency of grazing
- 6) Severity of grazing
- 7) Season of grazing (an example is to avoid grazing an area at the same time of year, year after year)
- 8) Type of cattle (cow/calf pairs, weaned calves, yearlings, etc.)
- 9) Number of cattle
- 10) Cattle distribution
- 11) Grazing selectivity

These principles need to be addressed by all operations; however, how they are addressed should be unique to each operation and the available resources. A well designed grazing system will need to be evaluated both short-term and long-term to determine how well the plan is meeting the operation’s objectives. In addition, a grazing system will need to be flexible in order to adapt and respond to changing plant, animal, and economic conditions. For example, management decisions need to be based on the resource evaluated and the operation’s objectives, not a calendar date.

**Table 1.** Approximate Total Daily Water Intake (gallons) of Beef Cattle (adapted from NRC, 2000)<sup>a</sup>

Weight, lb	Temperature, °F					
	40	50	60	70	80	90
<b>Growing Heifers, Steers and Bulls</b>						
400	4.0	4.3	5.0	5.8	6.7	9.5
600	5.3	5.8	6.6	7.8	8.9	12.7
800	6.3	6.8	7.9	9.2	10.6	15.0
<b>Finishing Cattle</b>						
600	6.0	6.5	7.4	8.7	10.0	14.3
800	7.3	7.9	9.1	10.7	12.3	17.4
1,000	8.7	9.4	10.8	12.6	14.5	20.6
<b>Wintering Pregnant Cows<sup>b</sup></b>						
900	6.7	7.2	8.3	9.7	-	-
1,100	6.0	6.5	7.4	8.7	-	-
<b>Lactating Cows</b>						
900+	11.4	12.6	14.5	16.9	17.9	16.2
<b>Mature Bulls</b>						
1,400	8.0	8.6	9.9	11.7	13.4	19.0
1,600 +	8.7	9.4	10.8	12.6	14.5	20.6

<sup>a</sup> Water intake is considered constant up to 40°F.

<sup>b</sup> Heavier cows are assumed to be higher in body condition and will require less dry matter and, thus, less water intake.

## Summary

This management guide provides cattle producers with some basic information to consider in the annual management of their herd. Table 3 provides examples of management guidelines for a spring and a fall calving herd. Knowledge of cattle nutrient requirements, nutrient content of feedstuffs, and dietary intake is the cornerstone of a herd's management plan. Providing proper nutrition allows cattle to develop and maintain a functional immune system that will respond properly to vaccination programs and other stressors that can have adverse effects on cattle health. Likewise, providing proper nutrition, along with good reproductive management practices, will yield improved reproductive efficiency which translates to more total pounds of calves to sell. More specific information concerning nutrition, health, reproduction, record keeping, and grazing systems can be found in the OSU Beef Cattle Library (<http://beefcattle.ans.oregonstate.edu/html/publications/Library.htm>).

Setting resource and production goals, collecting accurate records, and periodic evaluation of those records for determining progress in meeting set goals are critical steps in improving the

performance, efficiency, and genetics of a cattle operation and its resources. Record keeping can be as simple as keeping note cards for individual or specific groups of cattle and recording the timing and utilization levels of pastures related to grazing or it can be a very detailed and comprehensive collection of information maintained in a database stored in a computer program specifically designed for cattle and grazing management records. The main point to remember is that data should be collected to determine herd and resource trends and issues that can be used to prepare future management plans that meet an individual operation's long-term objectives.

## References

- England et al., 2009. CL605. Cow-Calf Management Guide and Producer's Library.
- NRC, 2000. Nutrient requirements of Beef Cattle. Page 81.
- Johnson and Davies. 2009. CL518. Cow-Calf Management Guide and Producer's Library.
- Mosley. 2009. CL502. Cow-Calf Management Guide and Producer's Library.

**Table 2.** Model Spring Calving Cow-Calf Herd Health Program (adapted from England et al., 2009).\*

Group; timing	Agent/Disease/Activity	Vaccine†	Route	Notes
<b>Calves</b>				
Branding; +/- 60 days of age	<b>5-way viral</b> <b>Clostridial, 8-way</b>	<b>MLV</b> <b>Bacterin</b>	<b>SC</b> <b>SC</b>	<b>MLV will immunize 40-60% of calves at this age</b>
Weaning	<b>5-way viral</b> <b>Clostridial, 8-way</b>	<b>MLV</b> <b>Bacterin</b>	<b>SC</b> <b>SC</b>	<b>Immunize those missed at branding; booster the rest</b>
	Pasteurella	Bacterin	SC	If backgrounding/retaining ownership
	Brucellosis (Bangs)	Bacterin	SC	If required
<b>Replacement Heifers</b>				
March	<b>5-way viral</b> <b>Clostridial, 8-way</b>	<b>MLV</b> <b>Bacterin</b>	<b>SC</b> <b>SC</b>	<b>Booster</b> <b>Booster</b>
	Vibrio & Lepto	Bacterin	SC	Optional
May	Turn in Bulls/AI			
October	Body Condition Score			
	Vibrio & Lepto	Bacterin	SC	Optional
	Rota/coronavirus/Ecoli	KV, Bacterin	IM	Optional
	<b>5-way viral</b> <b>Clostridial, 8-way</b>	<b>MLV</b> <b>Bacterin</b>	<b>SC</b> <b>SC</b>	<b>Booster</b> <b>Booster</b>
November	Pregnancy Check			
	Body Condition Score			
	Evaluate Nutrition Plan			
	Rota/coronavirus/E. coli	KV, Bacterin	IM	Optional
December	Body Condition Score			
	Rota/coronavirus/E. coli	KV, Bacterin	IM	Optional
February; Calving Begins	Dip Navels			
	Colostrum			Provide within 2-4 hours of birth
	BO-SE		SC	
<b>Cows</b>				
March-April	<b>5-way viral</b>	<b>MLV</b>	<b>SC</b>	
	Vibrio & Lepto	Bacterin	SC	Optional
	Scours vaccine	KV, Bacterin	SC	Optional
	Parasiticide	Pour-on		Control of lice & internal parasites
March; Calving	Dip Navels			
	Colostrum			Provide within 2-4 hours of birth
	BO-SE		SC	
June	Turn in Bulls/AI			
September-October	Pregnancy check			
	Scours vaccine	KV, Bacterin	SC	Optional
	<b>Clostridial, 8-way</b>	<b>Bacterin</b>	<b>SC</b>	
	<b>5-way viral</b>	<b>MLV</b>	<b>SC</b>	
	Vibrio & Lepto	Bacterin	SC	Optional

\* 5-way viral = IBR, BVD 1&2, BRSV, PI3; MLV=modified live vaccine; KV=killed vaccine; “Bold, italics and, boxed” indicates Core vaccines

**Table 3.** Spring and Fall Calving Management Calendars

Spring Calving Management Calendar												
February	March	April	May	June	July	August	September	October	November	December	January	
Heifers calve		Heifer breeding season			Weaning based on ranch resources & economic considerations; Preg check cows; BCS cows			Evaluate BCS of cows monthly; adjust nutritional mangment to obtain adequate BCS by calving				
Cows calve			Cow breeding season			Cull cows - open, smooth mouthed, and/or poor performing						
Prepare bulls for breeding season - proper nutrition, Breeding Soundness Exam, Trich test			Branding			Obtain nutrient analyses of feedstuffs; Plan winter feeding program; Select replacement heifers						
Plan Spring/Summer/Fall grazing program												
Fall Calving Management Calendar												
September	October	November	December	January	February	March	April	May	June	July	August	
Heifers calve		Heifer breeding season			Plan Spring/Summer/Fall grazing program		Wean based on pasture quality/availability and economic considerations; Preg check cows; BCS cows					
Cows calve			Cow breeding season			Cull cows - open, smooth mouthed, and/or poor performing; Select replacement heifers						
Prepare bulls for breeding season - proper nutrition, Breeding Soundness Exam, Trich test		Branding			Evaluate BCS of cows monthly; adjust nutritional mangment to obtain adequate BCS to achieve reproductive goals							
Obtain nutrient analyses of feedstuffs; Plan winter feeding program												
											Evaluate BCS of cows monthly; adjust nutritional mangment to obtain adequate BCS by calving	