

Beef on Grass from Start to Finish

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According to the 2007 USDA Ag Census, beef cattle are raised on nearly 15,000 farms across Wisconsin. This publication provides an introduction to beef cattle production and care using managed grazing. Resources for more in-depth information are listed in the resources section of this guide.

Beef production systems are generally described according to the life stage of the beef production cycle on which they focus:

- *Cow-calf* systems focus on production and sale of beef calves from a herd of beef cows.
- *Seed stock* systems use artificial insemination extensively and produce bulls and heifers for use in cow-calf systems.
- *Stocker* systems typically purchase weaned/lightweight feeder calves from a cow-calf producer and raise them up to the pre-finishing weight phase.
- *Finishing* systems focus on the feeding phase to produce cattle that are ready for market.



Depending on your goals and the farm's human, capital, and natural resources, you may decide to concentrate your efforts on just one beef production stage as you develop and refine your managed grazing operation. Expanding to multiple beef production stages may come later as your skills grow.

Cattle breed characteristics vary and choosing the right breed for your type of operation is a critical decision. Whether you are a cow-calf producer, stocker-grazier, or finish cattle on pasture you'll need to do some research and choose a beef breed or crossbred that will meet your production and marketing goals. Prior to starting a beef enterprise, invest some time in research and talk to experienced producers or breeders to identify which breed option is right for you. General characteristics to consider include: frame size, maternal traits, maturation speed, tenderness & carcass traits, feed efficiency, temperament, longevity, adaptation to the local climate.

If you don't already own stock, you can buy animals a couple of different ways. Beef cattle are commonly sold through public livestock auctions or by private transactions between producers. If you are an inexperienced buyer find a knowledgeable friend or a professional buyer to advise you. Take the time to go to pasturewalks and ask questions of a variety of farmers. A current listing of pasturewalks is found at www.grassworks.org. Research and visit auction barns and don't spend too much on expensive animals until you have learned how to manage them and pasture well. Buy more expensive stock once you've got the kinks worked out of managed grazing and your farm operation. Also, recognize that animals not bred for pasture may not do as well as those whose genetics are proven on pasture.

Auction barn animals can sometimes bring disease home to your farm so use caution. Breed associations, local newspapers, and the Internet are good sources of contact information for buying cattle directly through private transaction. Since bio-security and health of purchased livestock are very important, private sales have the advantage of allowing you the opportunity to make personal contact with sellers, question them on their production methods, and observe their livestock care firsthand. It may cost more to buy beef cattle privately from a recognized breeder

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or producer, but you are also buying that individual's good business reputation and sound production and health protocols.

Facilities & housing

Compared to other livestock, beef cattle generally have minimal housing needs. Table 2 provides general guidelines to ensure that adequate pasture carrying capacity is available for grazing. Drylot, feeding, and resting space guidelines are also provided to help farms plan for inclement weather conditions when animals may need to be removed from pasture to prevent sod damage or provide shelter during severe weather conditions.

Table 2. Pasture and housing space requirements for beef cattle, per animal.

	Pasture acres needed	Drylot space (ft ²)	Feeding space (inches)	Resting space (ft ²)
Cow with calf	1.0–3.0	350–800	24–30	40–50
Weaned calf/stocker	0.5–1.5	300–600	18–22	20–25
Yearling or finisher	1.0–2.0	400–800	22–26	30–35

Many beef herds are housed outdoors during Wisconsin winters using natural or constructed windbreaks for protection from harsh weather. Nutrient demands of out-wintered livestock may be 30 – 50% higher during extremely cold and windy winter conditions, so pay close attention to providing some form of shelter as well as ensuring adequate feed and reliable water sources are available.

Cattle Handling Facilities

Beef cattle occasionally need to be sorted, loaded, and/or restrained for vaccinations, breeding, and other husbandry procedures. Well-constructed cattle handling facilities can reduce stress and ensure safety for both humans and animals. Simple handling facilities, consisting of one or more small holding pens with a narrow alley leading to a headgate or chute for restraining cattle, can be integrated into drylot and feeding facilities at the farmstead. A lane system between paddocks and back to the handling facilities will be sufficient in most situations to move beef cattle when needed. For pastures areas away from the farmstead, a small corral (temporary or permanent) can also be used in a corner of the pasture to handle animals. Placing salt, other minerals, feed, or water in the corral on a regular basis allows cattle to become accustomed to the confined space and makes them easier to catch when necessary.



Out-wintered Murray Grey beef cattle use windbreak; photo by Will Halser.

Nutrition & feeding

Aside from the purchase of animals, feed is the largest beef cattle expense, often representing 70% of production costs. In Wisconsin, beef cattle kept through all seasons will require stored forages as well as pasture. Some producers feed grain depending on cattle life stage and production goals. Salt and other minerals and fresh water should be readily available to all beef cattle on a daily basis.

Beef cattle diets are primarily composed of roughages—pasture and stored forages. Most beef cattle spend all or a portion of their time on pastures during the grazing season, since pastures are by far the most economical method of feeding cattle. Mature beef cows and their calves will require only water, salt, and mineral supplements during the primary grazing season and can utilize mature pastures and long pasture rotations.

Stockers and finishing animals require high quality legume-grass pastures and intensive management to achieve desired gains of 2 or more pounds/head/day during the grazing season. They benefit from frequent rotations (daily or several times per week) to fresh grass to maintain the high dry matter intakes and forage quality needed. Growing animals may also require grain for energy unless the pasture is very high quality. If you are interested in strictly grass-fed finishing systems, be sure to consider breed differences when selecting your animals since some beef cattle breeds will finish more easily than others with little or no grain supplementation.

Feed all classes of beef cattle stored forages whenever adequate pasture is not available—during winter months, drought, and muddy conditions, or whenever animals may need to be pulled from pastures for other reasons. Stored forages can be grown on the farm or purchased.

Beef cattle may drink 10–25 gallons of water or more daily, depending on body size and air temperatures. A good rule of thumb is to supply at least 1-2 gallons per 100 pounds of body weight during cool and hot weather conditions, respectively..

Animal health & bio-security

Managed grazing production systems optimize animal health and bio-security by minimizing stress, disease and parasite issues. You will still need to manage animals' health by working with your local veterinarian to develop an appropriate vaccination program. Two diseases of concern are:

Clostridial diseases. Many of the bacteria responsible for these diseases naturally exist in the soil and intestines of animals. Clostridial diseases often result in sudden death due to the development of bacterial toxins in infected animals. Vaccine combinations to prevent clostridial diseases are commonly available and should be administered according to label directions.

Pinkeye is a bacterial eye infection that occurs primarily during mid to late summer and may result in blindness. Pinkeye is spread by animal to animal contact, flies, and even seed heads of tall pasture grasses. Vaccination, fly control, and clipping pastures can help manage pinkeye outbreaks. Affected animals should be treated in early stages to prevent blindness.

In general, to minimize disease and illness outbreaks:

1. Keep livestock equipment, feeding areas, and housing clean and comfortable
2. Develop an area to safely keep new additions or sick animals quarantined from the rest of the herd.
3. Develop facilities that provide safe and efficient cattle handling
4. Provide adequate feeding and resting space in the barnyard or sacrifice pasture when animals are removed from paddocks during inclement weather periods and/or the winter feeding season
5. Scout pastures regularly to identify and control or remove noxious and toxic weeds and avoid purchase of weedy hay or other forages
6. Keep records to identify management issues that increase incidence of disease or health problems and work with your veterinarian and other advisors to find solutions
7. Develop a plan to management potential ***bloat*** problems on legume-grass pastures

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Bloat results from an accumulation of excessive gas in the rumen, and is frequently the cause of sudden death on pastures. The condition occurs when foaming proteins found in some legume species are rapidly digested and gas bubbles remain trapped in the rumen contents. It is most commonly seen on lush pastures containing high percentages of immature legumes (alfalfa and clovers), often in spring or fall months, and less commonly with other forages. Bloat prevention strategies include providing dry hay prior to turnout, avoid turnout during wet conditions (including heavy dew), transitioning animals onto pastures, feeding of a poloxylene (an anti-foaming product available in block or powder form) supplement and care observation, removal and treatment of animals exhibiting signs of bloat.

Parasites represent special challenges in pasture-based systems that may result in reduced animal health and production. Many *internal parasites* thrive on pastures and depend on ingestion of eggs by grazing animals to complete their life cycle. *External parasites* such as flies and other biting insects also irritate animals and spread diseases like pinkeye. Understanding parasite life cycles in relation to pasture management can be used within a livestock IPM strategy to help manage internal and external parasites. Pasture rest periods, rotation, clipping or dragging pastures, and management of winter feeding and manure concentration areas can help decrease parasite loads. A parasite treatment plan that includes strategic use of chemical de-wormer products should be made in consultation with your veterinarian.

Economics & marketing

In addition to managing animals you should take stock of your skills as a business person. Go to your local extension office to find help with entrepreneurial skills like writing a solid budget and business plan, and a sales and marketing plan. These skills will be important in order to be profitable for any and all phases of pasture-based beef production. There are many other business resources listed in this grazing guide. Attend conferences and learn about the pros and cons of selling beef under various labels like organic, local, grass fed, and natural markets. If you plan to direct market beef or transport live animals across state lines you will have to pay attention to additional regulations and licenses as well.

People have been raising cattle on grass pastures for centuries. Whether your interests lie in pursuing specialized markets, caring for a piece of land, researching types of pasture plants, fostering a special breed or simply hanging around animals, the opportunities and challenges of your beef enterprise are likely to be very enjoyable and rewarding.

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