

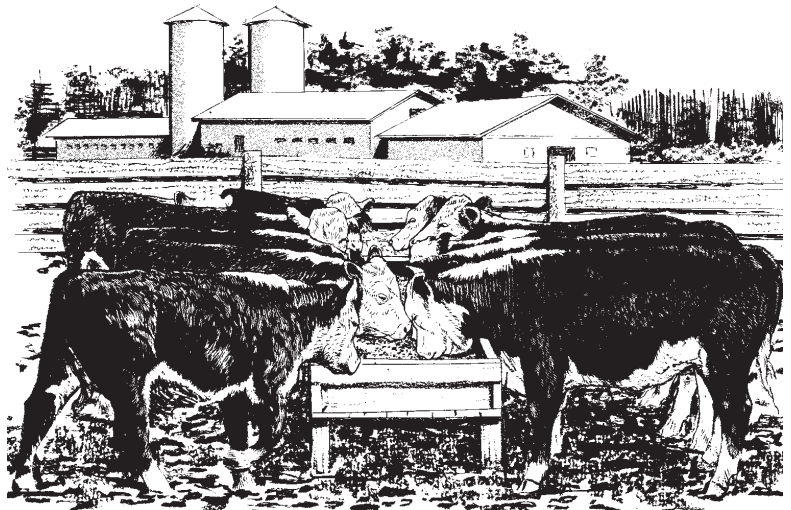
Beef Production for Small Farms

An Overview

G.J. Pirelli, S. Weedman-Gunkel, and D.W. Weber

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Beef production is a large and important segment of American agriculture and one of the largest industries in the world. Beef enterprises work well with grain, orchard, vegetable, or other crop operations. Cattle can make efficient use of feed resources that have little alternative use, such as crop residues, marginal cropland, untillable land, or rangeland that cannot produce crops other than grass.

For people who own land but work full-time off the farm, a beef enterprise can be the least labor-intensive way to utilize their land. A cattle enterprise can use family or surplus labor. Calving, weaning, vaccinations, castration, and weighing can be planned for times when labor is available.

Consider your resources, the land available, and your level of interest before deciding to engage in the cattle business. Identify why you want to raise cattle and set goals to achieve the most constant economic return or personal satisfaction. Your goals must be clearly defined, firmly fixed, achievable, and have a realistic time frame. Otherwise, your operation will lack meaning, objective, and focus.

Gene J. Pirelli, Extension livestock agent, Willamette Valley; Shirlee Weedman-Gunkel, graduate student in animal sciences; and Dale W. Weber, professor of animal sciences; Oregon State University.

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Production options

There are several types of small-scale cattle enterprises. Generally, they are grouped into three broad areas:

- *Growing and feeding operations*—In these operations, calves or yearlings are either raised or purchased and then are fed (fattened for slaughter). Included in this category are operations specializing in producing cattle for home use.
- *Breeding herds*—A breeding herd consists of cows and bulls that are used to produce calves for sale as breeding or feeder animals.
- *Combinations of growing, feeding, and breeding herds*

Success of your operation depends on adapting a strategy that fits your needs. After reviewing this publication and generating some ideas about what kind of operation you would like to have, contact your Extension agent and work out a detailed plan.

Growing and feeding operations

There are two main types of growing and feeding operations—steer/heifer operations and stocker (or backgrounding) operations.

In a *steer or heifer operation*, you purchase 500- to 600-pound feeder calves after weaning at approximately 7 to 10 months of age. They can be fed out and marketed in less than a year from the time of purchase. Thus, the investment on each calf is returned within a comparatively short time. This type of operation may not require much land, but adequate facilities are essential so that animals can be kept comfortable and under control.

A *stocker or backgrounding operation* pastures or feeds calves until they reach 750 to 800 pounds. Then they are sold to a feedlot for finishing.

Some excellent enterprises are solely pasture operations. Weaned calves or yearlings are purchased in early spring, go on pasture when the

grass is ready, and are sold when the pasture season is over. On the other hand, calves cost less in the fall; therefore, depending on the cost of winter feed, fall may be the best time to purchase cattle for the next pasture season.

In these calf and yearling enterprises, purchase price and selling price greatly influence profitability. It is recommended that you ask an experienced cattle buyer to assist in purchasing animals that best suit your type of operation, land, and resources.

Managing newly purchased calves

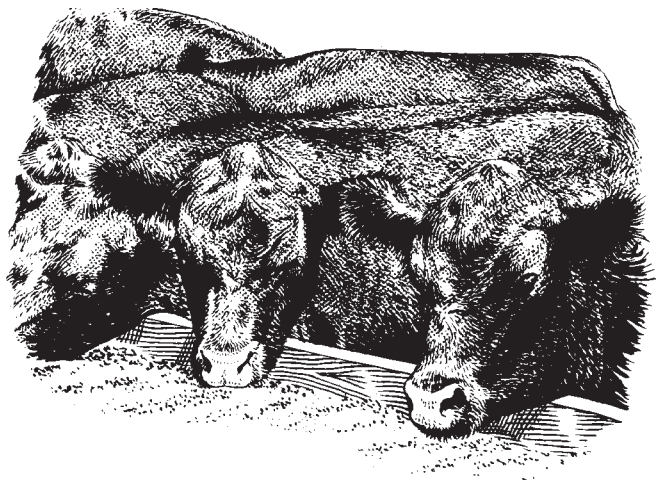
When you purchase calves for a growing or feeding operation, keep them in an area that allows you to observe them for 2 weeks. This enables you to prevent the spread of disease.

Calves should have access to plenty of water and feed. Working the calves requires a lot of patience, as they are easily excited and stressed. Your veterinarian or Extension agent can help you develop a health program that lowers the risk of disease for newly received calves.

Breeding herds

Establishing a breeding herd is a long-range program. It also requires more land than a simple steer or heifer feeding program. Consider how your available resources match your long-term objectives. There must be adequate feed, water, and fences to accommodate a year-round operation.

Decide whether to have registered purebred cattle or commercial cattle. Income



from a commercial beef herd comes mainly from the sale of calves and old or cull animals. Sale of breeding stock is the main source of income from registered cattle. Care and management of registered cattle is more intensive than for commercial cattle.

Developing a registered herd

If your objective is to raise registered cattle and supply breeding animals to other cattle producers, it may be necessary to make large capital investments in purebred stock. Development of a registered herd means that both the sire and dam must be purebred and registered with the same national breed association. You must keep accurate records and register the desirable purebred calves to be retained for breeding stock.

If you raise bulls for the beef industry, you must develop a selection program based on characteristics of economic importance, such as fertility, mothering ability, ease of calving, growth rate, and carcass merit. Also, use great care in the selection of breeding females, as considerable time and expense are involved.

Competition is keen with already-established herds. However, there are successful registered herds with only 30 to 50 cattle.

Developing a commercial herd

The criteria for selection, or selling points, of good commercial cows depend on size, quality, age, condition, stage of pregnancy, and market price. You should select breed and cow size to match your feed resources and topography. Local ranchers or Extension personnel can give you an idea of what breeds are best suited to your area.

Crossbreeding (mating animals from two or more breeds) can be an advantage in a commercial cow herd. Capitalizing on the merits of several breeds, plus the extra vigor from crossbred calves, may give you a competitive edge in the market. Remember that advances in genetic merit probably will not be realized for several years.

Purchasing cattle

There are many sources of good cattle, both registered and commercial. Usually it's best to purchase from a successful and

reputable breeder. They usually sell only sound cattle as breeding animals and they are helpful in giving advice to less experienced producers.

If you are inexperienced, it might be best to buy good, young, bred cows that have calved at least once. This reduces problems associated with calving heifers. If you purchase open heifers, you should breed them to a bull that has the genetics for easy calving.

Managing a cow-calf herd

The major concern of cattle producers is profit. For a cow-calf herd, profits are determined by the percent calf crop (the number of calves weaned per cows bred), the weaning weight of the calves, the costs of maintaining breeding animals, and, ultimately, the sale price of the calves.

Because your entire program depends on the fitness of the breeding animals, it is essential to maintain good herd health by not allowing the cattle to become too fat or too thin. Cows do not milk as well and may have problems calving or getting bred if they are overweight or underweight. Bulls that are not in good condition may perform poorly during the breeding season.

See "Feeding beef cattle," page 5, for information on nutritional needs of beef cattle.

Breeding (mating)

It is ideal to have a controlled breeding season, rather than allowing the bull to run with the cows continuously. A 45- to 60-day breeding season is recommended.

The resulting shortened calving season increases the possibility of having a uniform set of calves to sell at market time. Cattle of similar breeding and size usually bring more money. Another advantage is that you can concentrate your work with cows during calving into a short span, instead of having it strung out for months.

Cattle have a 283-day gestation period. Select breeding dates so that cows will calve at the time of year you desire. Considerations in determining calving season include weather conditions and the ability to match feed resources with the cows' requirements.

For example, seasonal considerations for the Willamette Valley include the following:

- Late fall or winter calving usually is not desirable because rain causes wet, muddy lots and pastures. The adverse weather may increase the incidence of calf scours and pneumonia.
- Late summer calving is a common practice because of the ideal weather. However, you must feed a high-quality ration to nursing cows and calves during winter, when only harvested feeds are available. This greatly increases feed costs.
- Calving in the spring allows the cows to utilize rapidly growing range and pasture, thus eliminating harvesting costs. However, spring calves may be too young to use all of the milk the cow provides as a result of the excellent nutrition she is receiving.

Your Extension agent can discuss the pros and cons of calving seasons with you.

A quality sire is essential to maintain a good, healthy herd. The rule of thumb is 1 bull to 25 cows. The ratio varies depending on the bull's age and health, and the size of pasture.

Small herd owners have the following options for obtaining a good-quality bull:

- You can buy a bull in cooperation with another ranch.
- You can lease or borrow a sire from a neighbor.

However, using a bull increases the risk of diseases. Bulls also may pose a safety risk, so treat them with respect.

Another good breeding option is artificial insemination (AI). If you use this method, you should synchronize estrus in the herd. This process may require the aid of a veterinarian.

The last consideration of the breeding season is pregnancy testing the cows. The test helps determine which cows should be culled from the herd to avoid the costs of wintering a cow that is not pregnant. Veterinarians offer pregnancy testing services.

Calving

This aspect of beef cattle management requires experience and skill. If you are

inexperienced, it is recommended that you contact your veterinarian and/or Extension agent for advice on calving management. You can read further on this subject in the *Cow-Calf Management Guide and Cattle Producer's Library* (publication CL 447).

Working the calves

One of the simplest ways to add to the value of your calves is to make sure they are well fed, properly castrated, dehorned, vaccinated, and clearly identified.

The most important thing to remember when working calves is to stress them as little as possible. You can learn how to castrate, dehorn, and give vaccinations under the supervision of an experienced cattle producer or veterinarian.

A good vaccination program also is vital to herd health and performance. Your Extension agent and veterinarian are good sources of information on this subject.

Weaning

Weaning is accomplished by separating calves from their mothers. Calves should be weaned at approximately 7 to 8 months of age. This gives the cow time to regain body condition after nursing.

Calves need an ample supply of fresh water and feed. Some producers prefer to creep feed (feed calves in an enclosure accessible only to the calves) prior to weaning. This may help encourage the calves to begin feeding on their own after weaning.

Keeping performance records

Keeping records enables you to cull poor performers and maintain good overall herd health and vigor. Examples of helpful calf records include birth weight, weaning weight, and average daily gain. Your Extension agent is a good resource for help.

Combinations of breeding, growing, and feeding

Most calves produced in small commercial herds are marketed as weaned calves weighing from 450 to 600 pounds. Other options include the following:

- Wean the calves, winter them, and sell them as yearlings.

- Creep feed calves while the animals are still nursing, put them on full feed after weaning, and then sell them as slaughter cattle at 12 to 16 months of age.
- Wean calves, winter them on a growing ration, then graze them during spring and early summer and finish them to slaughter weight at 18 to 24 months of age.

Facilities and equipment

Producing beef cattle on a small farm does not require elaborate or expensive housing or facilities. Under most weather conditions, cattle do very well outside.

In the Pacific Northwest, cows need a mud-free area with protection from wind and rain. One method is to allow animals to have access to an open-air pole shelter. In an enclosed building, proper ventilation is important to maintain good health.

Design facilities to make your job easy and safe and to minimize your expenditure of time and labor. An effective working facility consists of a corral with a narrow alley, a head catch, and a squeeze chute.

The chute is needed for vaccinations, deworming, etc. The head catch is needed if you must aid a cow with calving. The corral and narrow alley help confine animals that need to be handled and driven into the chute or head catch.

Well-designed handling facilities help to minimize animal confusion and stress. Poorly designed facilities increase stress on the animals and may cause poor performance, which can affect meat quality. Use of electric prods is not recommended because they cause animals unnecessary pain and stress.

You can find more information on designing cattle facilities in the Management section of the *Cow-Calf Management Guide and Cattle Producer's Library*.

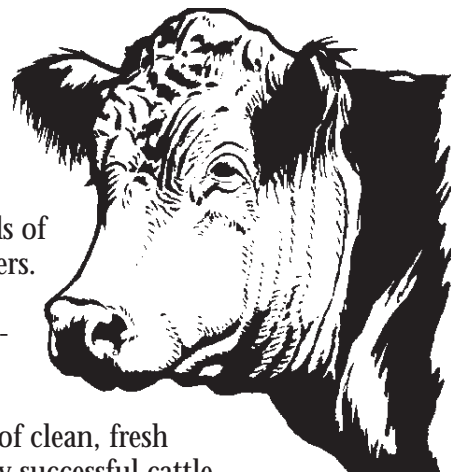
It is important to maintain the quality of feed. Store forages (including hay, straw, or silage) and grains in a dry building free from rodents. Forages lose nutritional value when exposed to direct sunlight. Wet hay loses feed value and palatability and presents a safety hazard due to combustion. Rodents can damage feed and spread disease.

Feeders reduce waste and prevent the spread of many internal parasites and other cattle diseases. You can buy many kinds of manufactured feeders. Or, you can build them out of materials on hand.

An adequate, year-round supply of clean, fresh water is basic to any successful cattle enterprise. Many types of water troughs are available from local feed or farm supply stores. You can recycle old barrels and bathtubs to make functional troughs; be sure to clean them thoroughly prior to use.

Pens, feedlots, and corrals should be located at a convenient distance from feed storage facilities. These areas should be well drained, with drainage moving away from feed storage, working facilities, and roads. It is important to make these areas accessible to tractors for easy feeding and cleaning.

Proper transportation is a must for your cattle. A 1-ton or $\frac{3}{4}$ -ton truck and trailer are convenient for any beef operation. A truck also is useful for transporting and dispersing hay.



Feeding beef cattle

Unlike humans, cattle have a ruminant digestive system. Their stomachs are made up of four parts. Ruminant microorganisms in the first three parts enable cattle to digest fibrous feeds that humans cannot. This microbial breakdown produces essential nutrients such as amino acids and B vitamins. The presence of these nutrients makes beef very useful for human consumption.

Nutritional needs

Cattle require protein, energy, water, fat, minerals, and vitamins. The amounts vary according to environment, the cow's age, time of year, and production goals. Availability of feedstuffs also varies by location and season. Up to 75 percent of the cost of raising an animal goes to feed.

Protein and carbohydrate levels adequate for growth and maintenance normally are found in high-quality legume hay, such as alfalfa and clover. Poor-quality feeds, such as cereal straw, grass straw, or rain-damaged hay, require protein or energy supplements. You can purchase supplements from your feed supplier.

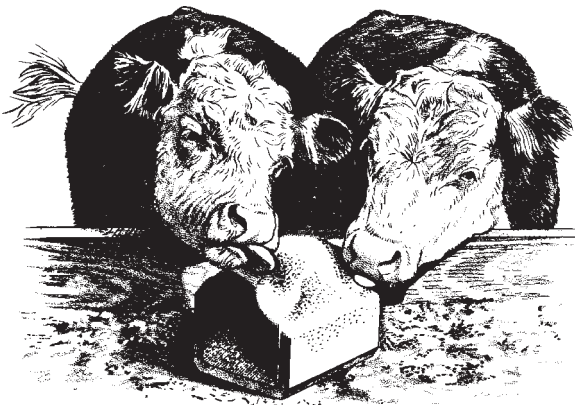
Beef cattle normally do not need vitamin A, B, or E supplementation. They can get these vitamins from normal-quality feedstuffs. However, a vitamin A deficiency can result from feeding dry, bleached-out hay. Symptoms of vitamin A deficiency include watery eyes, rough hair coat, night blindness, and poor gains.

Vitamin D is formed by the action of sunlight on animal tissues. If you confine your cattle to a barn or stall for extended periods of time, vitamin D deficiency may become a problem.

Minerals are inorganic compounds that contribute to bones, teeth, protein, and lipid functions of the body. Minerals are provided through natural feeds and supplementation.

There are three main categories of mineral supplements:

- *Salt*, which usually is sold as iodized salt and does not contain other minerals
- *Trace mineralized salt*, which consists of a large percentage of salt and traces of some or all of the following: copper, iron, iodine, cobalt, manganese, selenium, and zinc
- *Mineral mixes*, which usually contain major minerals such as calcium and phosphorus as well as trace minerals and some salt



You can provide supplements as licks or mix them into feed. The composition of needed salt or mineral supplements varies depending on your locale and feedstuffs.

Clean water is essential and must be provided at all times. Under normal conditions, cattle consume 4 to 20 gallons of water per day depending on size, age, and weather. Heat dramatically increases water consumption.

Types of feed

Feedstuffs are categorized as concentrates or roughages. Concentrates are high in digestible nutrients. Grains and protein supplements are examples of concentrates. Roughages are feedstuffs that are low in digestible nutrients. Examples of roughages include hay, pasture, and silage.

The percentage of roughage and concentrate in beef cattle rations depends on the type of animal being fed. For example, feedlot steers are fed mostly grain and a little roughage, while bred cows may be wintered on good-quality roughage alone. **Caution:** High-quality legume hay such as alfalfa may cause bloat.

As a general rule, beef cattle consume up to 3 pounds of feed per day for each 100 pounds of body weight. A 500-pound weaned calf, for example, will eat 15 pounds of high-quality alfalfa hay per day.

Cattle usually weigh 600 to 700 pounds before they are placed on a high-grain (high-energy) ration. This diet is fed until slaughter weight is achieved.

If you feed out cattle for slaughter, you can purchase feed or grow and mix it at home. If only a few animals are being finished, it may be more economical to purchase the mixed ration from a feed dealer.

Growth promotants, including anabolic steroids (implants), may have a place in your operation. They are used widely in the industry and have been proven safe. Ionophores are feed additives that decrease rumen upset, increase feed efficiency, and increase daily gains. These chemicals can improve gain significantly; however, they do not compensate for poor management.

Finishing rations and feeding cattle for slaughter are explained in detail in the *Cow-Calf Management Guide and Cattle Producer's Library*.

Health problems

Cattle of all ages—but particularly young, growing cattle—are subject to a variety of ailments. They range from mild conditions to severe infectious diseases that may cause death within 24 hours.

The cost of caring for sick cattle can seriously reduce your profit margin. With the increasing need to cut production costs, good herd health care is very important for any beef operation.

Prevention is the easiest and cheapest method of disease control. Clean sheds, lots, and feed and water troughs give disease less chance to get started. A sound vaccination program, parasite control, and frequent observation of the herd also help to reduce the occurrence of illness.

You can recognize a sick animal first by its abnormal behavior or physical appearance. Droopy ears, loss of appetite, head down, scouring (diarrhea), or inactivity may indicate illness. A high temperature usually indicates disease.

The best course of action is to find a sick animal quickly, treat it, and then work to eliminate the cause of the sickness. If one or two animals come down with a disease, the rest of the herd has been or will be exposed to it.

Health problems are more common during and after periods of stress, including calving, weaning, shipping, working or moving the cattle, and extreme weather conditions. Stress can reduce an animal's ability to resist infectious agents. After a period of stress, give extra attention to your animals' health.

Common cattle diseases

The following are five of the more common health problems that beef producers encounter. You also need to be aware of other diseases that affect the health of livestock in your region.

Respiratory diseases

Respiratory diseases are common in cattle. A number of factors contribute to an outbreak: inadequate nutrition, stress, and viral or bacterial infection. Good management and vaccination of cows and calves is the best way to prevent outbreaks of respiratory disease. Your veterinarian or Extension agent can help you develop a program to reduce losses on your ranch and in the feedlot.

White muscle disease

White muscle disease is a serious problem in many areas of the Pacific Northwest. It is caused by a dietary deficiency of the trace mineral selenium. It may cause paralysis of the skeletal muscles or may affect the heart muscle, causing respiratory distress and death within a few hours.

If you are in an area where white muscle disease is likely to occur, supply adequate amounts of selenium in the diet. In addition, injecting newborn calves with a commercial selenium/vitamin E preparation is a short-term solution. Your veterinarian can advise you regarding the incidence of disease in your area.

Brucellosis (Bang's disease)

Brucellosis (Bang's disease) is a serious disease. It causes abortion and sterility in cattle, bison, elk, and deer, and undulant fever in humans.

Federal and state laws effectively outline brucellosis control. Vaccination is required for all heifers.

Brucellosis most commonly enters a herd through the purchase of infected cattle. To help prevent brucellosis from entering your herd, vaccinate all heifers between ages 4 to 10 months, and purchase only brucellosis-vaccinated cattle.

External parasites

External parasites include horn flies, face flies, stable flies, heel flies, and lice. The largest health problem comes from the additional stress these insects cause to animals. When infested, cattle spend more time in the shade and don't graze, which causes poor performance.

You can reduce these problems by using fly-repellent ear tags or another parasite

control treatment. Eliminating the areas where pests reproduce also helps to reduce the severity of external parasites.

Internal parasites

Internal parasites such as roundworms, lungworms, and liver flukes commonly occur in cattle. These hidden parasites cause poor performance and occasionally kill young animals.

Cattle are likely to pick up internal parasites when they graze established pastures. Internal parasites also can be a problem in confined areas.

Invasion of the stomach or intestinal wall by a parasite leads to poor digestion of nutrients and damage to organs. Signs of parasite infestation include scouring, rough hair coat, poor gains, and potbelly appearance.

Use dewormers at strategic times during the year to reduce the numbers of internal parasites. Use fecal sampling to determine the severity of the infestation and the type of dewormer that will be effective.

Disease control

Vaccinations and parasite controls are available for many of the diseases affecting cattle. The choice of remedy and time of application depend on a variety of things, including the animal's nutritional level, disease prevalence in the herd, and the region in which the cattle are located.

Refer to the *Cow-Calf Management Guide and Cattle Producer's Library* for more information on beef cattle health problems, their prevention, and treatment. You also should consult a veterinarian and Extension agent to develop a sound health program for your herd.

Marketing

It may not be easy to determine how and where to market your animals. The choice of market outlet depends on the class and grade of the cattle. Thus, the method of marketing usually is different for fed cattle, feeder, or purebred cattle.

There are many different methods of marketing cattle, but most livestock in the United States are marketed through one of

three channels: direct, auction, or carcass grade and weight basis. The direct and auction markets are for both fed and feeder cattle, while the carcass grade and weight basis is primarily for fed cattle. Purebred cattle usually are sold at special breed auctions or private sales.

Direct marketing (country dealers)

Direct selling, or country selling, refers to sales of livestock directly to packers, local dealers, or farmers without the use of agents or brokers. The sale usually takes place on the farm, ranch, feedlot, or some other non-market buying station or collection yard.

This method does not involve a recognized market. Sellers who direct-market should be aware of possible regulations regarding the private sale of breeding animals or beef for consumption.

Niche marketing

A producer often can develop a local or regional market for certain cuts of beef or specialty beef products. If this interests you, check into meat handling requirements, inspections, and permits that may be necessary. This type of marketing usually takes time to develop and also may require a consistent seasonal or yearly supply.

Auction marketing

Livestock auctions or sales barns are trading centers where animals are sold by public bidding to the buyer who offers the highest price per hundredweight or per head. Auctions may be owned by individuals, partnerships, corporations, or cooperative associations.

Grades of carcass beef

Carcass beef sold to wholesale and retail outlets usually is graded to determine the quality and price. There are two categories of grades for beef: yield grade and quality grade.

Yield grade

Yield grade, or cutability, designates the yield of trimmed retail cuts from the carcass. Factors determining yield grade are:

- Fat thickness over rib eye
- Rib eye area

- Kidney, pelvic, and heart fat (KPH), calculated as a percentage
- Hot carcass weight

Yield grades range from 1 to 5, with 1 being the leanest and 5 the fattest (requiring the most trimming).

Quality grade

Quality grades designate various characteristics of meat and give the buyer a guide to tenderness, juiciness, and flavor. Grades separate beef into groups that are somewhat uniform in quality and composition.

The quality grade of a beef carcass is determined by physiological maturity and marbling. The age of the animal affects the tenderness of the meat.

There are eight quality grades used by the U.S. Department of Agriculture (USDA). Figure 1 shows seven of the USDA quality grades and the relationship between marbling and maturity. “Canner” grade is not included.

Approximate ages that correspond to each maturity classification are:

- A—9 to 30 months
- B—30 to 40 months
- C—42 to 72 months
- D—72 to 96 months
- E—more than 96 months

It’s important that you understand yield grade and USDA quality grades. If you want more information on this subject, refer to the *Cow-Calf Management Guide and Cattle Producer’s Library* for more detailed definitions.

Quality assurance

When consumers go to the store to purchase beef, they want quality meat, free of bruises, dark spots, abscesses, or lesions. Quality assurance means that beef producers pay attention to the factors that contribute to quality meat, produce a beef product that is free from defects, and ensure that consumers get the quality they want.

Figure 1.—Relationship between marbling, maturity, and carcass quality grade.¹

Degrees of marbling	Maturity ²				
	A ³	B	C	D	E
Slightly abundant	Prime				
Moderate			Commercial		
Modest	Choice				
Small					
Slight	Select		Utility		
Traces					
Practically devoid	Standard			Cutter	

¹Assumes that firmness of lean is comparably developed with the degrees of marbling and that the carcass is not a “dark cutter.”

²Maturity increases from left to right (A through E).

³The A maturity portion of the figure is the only portion applicable to bullock carcasses.

When you raise beef cattle to sell to a feedlot or packer, you are selling a food product. The handling, management, and environment on your farm or ranch affect the quality of the product and what the consumer ultimately buys in the store. Poorly designed facilities and equipment can increase the number of cuts, puncture wounds, and bruises on beef animals. Corrals or chutes with sharp corners or protruding nails or bolts should be altered or repaired.

You must keep records to document that vaccines and antibiotics were administered properly. Pay attention to withdrawal times on labels as well as dosage. Use only vaccines and drugs approved by the U.S. Food and Drug Administration and the state Department of Agriculture. Your veterinarian or Extension agent can advise you of proper injection sites and procedures to reduce abscesses and lesions.

Budgets and financial records

Standard ranch records cover all production and financial management aspects of a beef operation. Use records to evaluate your business in terms of efficient use of resources and productivity. Records are important for ranch planning, tax reporting, and applying for credit.

Budgets

Decisions are only as good as the information on which they are based. Budgets provide the information for making ranch management decisions and are constructed to estimate the outcomes of future activities. Budgeting allows you to anticipate problems that you may encounter, and to alleviate or avoid them. For more information, see the Finance section of the *Cow-Calf Handbook and Cattle Producer's Library*.

Financial records

The way ranchers keep financial records varies, but the key is to use a system that provides the information you need to meet your responsibilities. The minimum set of financial records should include a balance

sheet, a statement of cash flow, and an income statement.

There are several ways to keep accurate records. Until the advent of the computer, all records were “hand kept,” and this still is a good method for many farms. Hand-kept records are inexpensive and easy to store. On the other hand, this method may be slow and subject to errors. Retrieving information may be time consuming if extensive records are kept.

Computerized record systems are available, from simple checkbook balancing systems to sophisticated, double-entry accrual programs. Computerized systems for production records also are available in a range of features and reporting capabilities.

Advantages include easy retrieval of information and reduced chance of mathematical errors. However, entering information takes time, and entries must be posted properly.

If you choose a computer system, it should meet the requirements and objectives of your individual operation.

Summary

This publication gives an overview of the basics for developing and managing a small beef herd. The Extension Service, veterinarians, and experienced beef producers can be resources to help you develop your enterprise. Careful planning, quality cattle in good health, and good management will put you on the road to success.



For further reading

OSU Extension publications

Assessing the Risk of Groundwater Contamination from Livestock Manure Management Worksheet, EM 8596 (1995). \$1.00

Calving Difficulties in Beef Cattle, EC 1370 (reprinted 1993). \$1.00

Choosing and Managing Young Bulls, EC 1035 (reprinted 1993). 50¢

Creep-Feeding Beef Calves, EC 935 (reprinted 1993). 75¢

How to Select, Grow, and Manage Replacement Heifers, EC 951 (reprinted 1993). \$1.00

Manure Management in Small Farm Livestock Operations: Protecting Surface and Groundwater, EM 8646 (1995). 75¢

Raising Newborn Calves, EC 1418 (reprinted 1998). 50¢

Reducing the Risk of Groundwater Contamination from Livestock Manure Management, EM 8597 (1995). \$1.25

Using National Sire Summaries to Improve Selection Skills, EC 1345 (reprinted 1993). 75¢

Weaning Management for Calves, EC 1371 (reprinted 1993). 75¢

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The Cow-Calf Management Guide and Cattle Producer's Library, second edition (University of Idaho, Moscow, 1999). \$80.00 (includes three annual updates).

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Cow talk

A glossary of terms commonly used by people who work with cattle

backfat—fat thickness measured at the 12th rib.

backgrounder—see feeder cattle.

balance—the harmonious relationship of all body parts, blended for symmetry and pleasing appearance. A steer that is poorly developed in the hindquarter lacks balance.

Bang's disease—see brucellosis.

barren—a sterile female.

bovine—referring to all cattle.

bred—a pregnant female; for example, a “bred cow” is one that is definitely in calf, or pregnant. Also refers to the mating process. For example, “She was bred (mated) on April 10.”

breed—animals of like characteristics, such as color and type, similar to those of parents and past generations.

breed character—features or characteristics that distinguish one breed from another. An animal is said to possess breed character when it has many of the characteristics peculiar to one breed.

breeder—the owner of the dam of a calf at the time she was mated.

breeding—the act of mating a heifer or cow with a bull; or, artificial insemination.

brisket—the breast or lower chest.

brucellosis (Bang's disease)—contagious abortion.

bull—an uncastrated male of any age.

buller—a cow in continuous heat due to cystic ovaries or other physical defects.

bulling—a cow in heat; apparent when a cow tries to ride other cows or stands while others try to ride her.

calf—a young animal of either sex, under 1 year of age.

calving—the time when a cow gives birth to a calf.

carcass—the animal after slaughter, with head, hide, internal organs, and legs below the knee or hocks removed.

castrate—to remove the testes.

characteristic—a physical or behavioral trait in an animal.

chuck—the major wholesale cut in the forequarter of a beef carcass.

close breeding—line breeding; mating of related animals.

cod—the scrotum of a castrated male; fills with fat as the animal finishes.

commercial breeding—breeding of grade animals, generally to produce market beef.

conceive—to become pregnant.

concentrates—feeds low in fiber and high in energy or protein; for example, grain is a concentrate.

conception—the union of ovum and sperm; the beginning of a new individual.

condition—the degree of fatness in animals.

conformation—the general structure and shape of an animal.

corn silage—whole green corn plants that have been chopped and fermented in an airtight silo.

cow hocked—hind legs bowed in at the hocks as viewed from the rear.

cows—female cattle that have had one or more calves.

creep feeding—providing a calf with feed as a supplement to its mother's milk and pasture.

crop—the depression behind the shoulder of a cow; or, an ear mark.

crossbred—an animal that results from mating two or more different breeds.

cryptorchid—a male bovine with one or both testes undescended.

cull—to eliminate an animal from a herd.

cutability—carcass cutout value, or yield of salable meat. Sometimes called “yield grade” by USDA meat graders.

dam—the mother of a calf.

dehorning—the act of removing horns from cattle.

dewlap—a hanging fold of skin under the neck or above the brisket.

digestion—the process of breaking down feeds into nutrients in the stomach and intestinal tract; used by the animal's body for growth and reproduction.

- docile**—able to be quiet and gentle, especially under strange conditions.
- double muscling**—a misnomer for an undesirable, genetically controlled enlargement of all muscles in the animal's body (gross muscular hyperplasia). An animal with this condition has bulging muscles in the round and shoulder, tailhead set forward, and shallow body.
- dropped**—born; gave birth to.
- dwarf**—an abnormally small, short-legged, early-maturing calf of about 700 pounds mature weight. Dwarfs usually do not reproduce.
- embryo**—the developing young during early pregnancy.
- estrous cycle**—length of time from one heat period to the next; in cattle, 21 days.
- estrus**—the period when a cow will accept a bull for breeding; heat period. Estrus occurs about every 21 days and lasts 12 to 18 hours. It does not occur when the animal is pregnant.
- family**—tracing ancestry; line of breed.
- fed cattle**—steers or heifers fattened and ready for slaughter.
- feed efficiency**—the number of pounds of feed required for an animal to gain 1 pound of weight; e.g., 6.5 pounds of feed per pound of gain.
- feeder cattle**—cattle being grown or raised in preparation for the feedlot. Cattle in this stage of growth also are called “stocker” or “backgrounded” cattle. Feeder cattle include both calves and yearlings.
- feedlot**—a group of pens, or barn lot, where steers and heifers are fattened for slaughter.
- fertility test**—analysis of semen for live sperm count; tests a bull's ability to produce offspring.
- fetus**—a developing young calf (or any vertebrate) during late pregnancy, after it attains the basic structure of its kind.
- fiber**—that part of the feed not easily digested by the animal.
- finish**—the degree of fatness.
- fitted**—fed, trained, and groomed for show or sale.
- forage**—generally pasture and/or hay or silage.
- free choice**—allowing animals to eat as much as they want at any time.
- freemartin**—the female member of different-sex twins; often shows many male characteristics and is incapable of reproducing because of the presence of male hormones in her circulatory system.
- freeze branding**—a way of marking cattle for identification. The procedure is to clip hair from the brand area, wet the skin with alcohol, then apply a branding iron cooled in liquid nitrogen or dry ice and alcohol.
- gate cut**—a method of impartially dividing a group of cattle by driving them through a gate.
- gestation**—the period between conception and birth of the young; approximately 283 days for cattle.
- get**—calves sired by the same bull.
- grade**—a beef animal with one or both parents not registered or recorded; also, a measure of carcass merit, e.g., yield grade or USDA quality grade.
- grooming**—care of an animal's coat, e.g., washing, clipping, brushing, etc.
- heifer**—a female that has not borne an offspring; or, a female that has borne her first calf (“first-calf heifer”).
- herd sire**—the principal breeding bull in a herd.
- heredity**—the characteristics an animal receives from both parents. Heredity is determined when sperm and egg unite.
- heritability**—the part of an animal's variation from other animals caused by heredity and not by the environment.
- hindquarters**—the back half of a beef carcass, usually divided between the 12th and 13th ribs.
- hooks**—hip bones.
- inbreeding**—when sire and dam are close relatives; see “close breeding.”
- KPH**—kidney, pelvic, and heart fat. The internal fat of the carcass, calculated as percent KPH.
- lactation**—the period during which a cow produces milk after calving.

- line breeding**—selective breeding; sire and dam are of the same heredity, but not as closely related as with inbreeding.
- management**—selection, feeding, and care of animals.
- marbling**—the fat within the muscle or lean part of a beef carcass as viewed in a cross section of the muscle.
- market beef**—a steer or heifer fed for producing meat.
- market value**—the price received for live animals.
- meat packer, processor**—one who slaughters live animals and sells the meat to retailers, restaurants, and purchasers.
- nursing**—a calf getting milk from its mother; also, a cow producing milk for her calf.
- nutrient**—a chemical ingredient in food that helps develop bones, muscles, and fat; i.e., protein, carbohydrates, and vitamins.
- open**—a nonpregnant female.
- outcrossing**—mating of unrelated animals within the same breed that have no common ancestors in the first generation.
- ovum (pl. ova)**—a female sex cell produced in the ovary; contains the half of the genes carried by the female.
- ovulation**—the release of ova into the oviducts; occurs 12 to 15 hours after the end of estrus in cattle.
- parturition**—the act of birth.
- pasture bred**—a cow serviced by a bull in pasture.
- pedigree**—a table presenting a line of ancestors for an animal; a genealogical tree.
- performance test**—a measure of performance; specifically, rate and efficiency of growth and carcass traits.
- pin bone**—the portion of the pelvis that protrudes on each side of the rectum.
- placenta**—the afterbirth; the sack or membrane covering a calf when it is born.
- polled**—naturally or genetically hornless.
- pregnant**—a heifer or cow that has conceived and not yet calved.
- production records**—the measure of a cow's productivity, based on number and weaning weights of calves she has produced in her lifetime.
- progeny test**—the measure of an animal's (usually a bull's) offspring; generally given to determine transmission of inheritable traits such as rate of gain, conformation, meatiness, dwarfism, etc.
- protein supplement**—a food substance containing high concentrations of protein; for example, cottonseed meal, canola meal, or soybean meal.
- purebred**—not to be confused with *thoroughbred*, which is a breed of horses. A purebred is a member of a particular breed; e.g., purebred Hereford. Purebred cattle do not necessarily have to be registered; they may be the offspring of registered bulls and purebred cows.
- quality grade**—the rating given a beef carcass based on marbling, age of the animal, and color of the lean. The most common quality grades are Prime, Choice, Select, and Standard.
- ration**—the amount of feed given to an animal during a 24-hour period.
- registered**—recorded in the herd book of a recognized breed association. The breed association issues a certificate that the animal is the offspring of registered parents and meets registration requirements.
- retail cuts**—the cuts of beef bought by consumers in grocery stores or meat markets.
- retailer**—a market that sells beef to customers.
- rib eye**—the main muscle exposed when a carcass is separated into front and hind-quarters. The area of the rib eye (sometimes called loin eye) at the 12th rib is used as an indication of muscling.
- roughages**—feeds such as hay, silage, and pasture, which are low in digestible nutrients.
- ruminant**—an animal that chews its cud and has a stomach composed of four parts—the rumen, reticulum, omasum, and abomasum. Cattle and sheep are ruminants.

- safe-in-calf**—pregnant beyond doubt; usually reported after a veterinarian's examination.
- scale**—refers to the animal's development in size and frame in terms of height, length, and width, rather than weight.
- scours**—diarrhea. Young calves may get scours by consuming too much milk or by pathogen infection.
- scrotum**—the bag enclosing the testes.
- scurs**—small, imperfectly formed horns not attached to the skull.
- seedstock**—foundation animals for establishing a herd.
- served**—a bred female, not guaranteed safe-in-calf.
- service**—the ability or act of breeding.
- sheath**—the tubular fold of skin into which the penis is retracted.
- sickle hocked**—a condition in which the hind legs curve under the body in a "sickle" fashion, as viewed from the side.
- sire**—the father of a calf.
- spay**—to remove surgically the ovaries of a female animal.
- springer**—a heifer or cow showing signs of advanced pregnancy; near to calving.
- stag**—a male bovine castrated after sex characteristics are developed.
- steer**—a male bovine castrated before sexual maturity.
- stocker**—see feeder cattle.
- structural soundness**—the physical condition of the skeletal structure, especially feet and legs.
- switch**—the tip of the tail where the hair is longest.
- tattoo**—an indelible mark or figure used on registered animals for permanent identification. For example, one can use a combination of letters and numbers in the ear or ears to indicate the year the animal was born.
- trait**—a distinguishing quality or feature.
- trimness**—freedom from excess fat and flabbiness in the brisket, underline, and flanks.
- type**—the sum total of all the characteristics that make up the ideal beef animal or that suit any animal for a specific purpose, e.g., beef type or dairy type.
- USDA grade**—a rating by the U.S. Department of Agriculture.
- weaned**—no longer nursing the dam. Weaning is the act of separating a calf from its mother.
- weanling**—a calf recently weaned.
- weight per day of age**—a measure of weight gain; usually from birth to weaning, or from birth to 1 year old.
- yearling**—an animal about 1 year old or older.
- yield grade**—a rating given to a beef carcass; a numerical score based on an estimated percentage of carcass weight in boneless, closely trimmed retail cuts from the round, loin, rib, and chuck.

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