



# Beef Quality Assurance Fact Sheet

## Animal Sciences/Forages



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## Handling Facilities and Equipment: Planning and Construction

Functional and safe handling facilities are essential for producing high-quality, wholesome beef without injuring animals or humans.

To carry out management practices such as vaccinating, castrating, dehorning and implanting, cattle must be restrained. Treating cattle for control of lice, grubs and flies and for internal parasites may also require some limited confinement and restraint of cattle. Herd health practices, such as treating sick cattle or injured animals or providing assistance at calving, is easier if adequate handling facilities are available.

Well-constructed handling facilities will reduce the cost and labor associated with working cattle. Veterinary fees can be reduced by saving time if the animal can be easily caught, restrained and quickly treated. Without an adequate corral system, many of these economically important practices will not be done, so productivity, and consequently returns, will suffer.

Just having working facilities may not be adequate. Many lesions, bruises and injuries that reduce the value and quality of the eventual beef product result from facilities and equipment that are either poorly designed, constructed and/or maintained. Bruises are the result of bumps against protruding objects, broken planks and poorly maintained equipment. When animals are slaughtered, these bruises must be trimmed from the carcasses, creating economic losses. It is reported that bruising costs the cattle industry \$22 million per year.

Working facilities need not be elaborate or expensive. Most facilities can be constructed of wood and materials on most farms. Proper and careful planning prior to construction is essential to ensure facilities that will result in cattle being worked safely, quickly and humanely. Facilities also must be safe for the people working the cattle.

Following are some factors to be considered in constructing and designing handling facilities.

### Planning a Handling Facility

The first step in planning a handling facility is to inventory existing facilities (old handling facilities, barns, sheds, etc.). Some of these might be used in the new handling facility.

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Also consider the availability of labor when planning the facility. Some facilities require less labor than others to move cattle through them. The type of operation (cow-calf, stocker, finishing, etc.) will also affect how the facilities should be constructed.

The size and temperament of cattle to be worked will influence how the facility should be constructed. Larger or more spirited cattle will demand stronger materials be used in construction. Obviously, the number of cattle to be worked will affect dimensions. The materials available (wood, sucker rods, etc.) will also affect facility construction.

### **Selecting a Site**

Accessibility should have a major influence on location of the handling facility. Attaching the new facility to existing facilities (barns, sheds, old handling facilities, etc.) can reduce costs and make the handling facility a part of the total operation. If a new facility is to be built, access to existing pastures and to roads is very important.

The site selected should be on an almost level spot with good drainage. If the site is on a slight slope, be sure cattle will be moved up the slope as they are worked. Don't forget the normal cattle movement. Cattle are easier to work if they move in a direction that is normal for them.

Consider the layout of pastures when deciding where to build a new handling facility. Build the facility so cattle in all pastures will have easy access.

### **Components of a Good Handling Facility**

The size and complexity of a beef cattle handling facility will depend on the number of animals in the herd. A good handling facility should contain the following components: headgate, holding chute, working chute, crowding pen, holding pen(s) and scales and loading chute

The **headgate** is the most important part of the entire working facility. It should be sturdy, safe, and easy to operate and work smoothly and quietly.

Headgates are of four basic types. These are: self-catching, scissors-stanchion, positive-control and full-opening stanchion. The self-catching headgate closes automatically due to the movement of the animal. The scissors-stanchion type consists of two biparting halves that pivot at the bottom. The positive-control type locks firmly around the animal's neck. The full opening stanchion consists of two biparting halves that work like a pair of sliding doors.

The self-catching, scissor-stanchion and the full opening stanchion are available with either straight or curved stanchion bars. These are extremely safe and will rarely choke an animal. The disadvantage is that animals can move their heads up and down unless a nose bar is used. The curved bar stanchion offers more control of the animal's head, but is more likely to choke the animal than the straight bar-type. Both types are safer than the positive-control headgate. No matter which type of headgate is selected, proper adjustment for the type of cattle being worked is necessary to prevent injury to the animals.

The **holding chute** is located immediately behind the headgate and secured to it. The holding chute should be 26 inches wide or less, and should be adjustable for different size animals. It should also include squeeze action, removable side panels for easier access to the animal and a floor with a non-slip surface.

The holding chute may be hinged on one side to release the animal if the headgate is not a walk-through type. Some type of see-through blocking gate or bar is needed to prevent the animal from backing up before the head is caught. This will also prevent the next animal from moving into the chute before the first animal is released. A two-foot service gate at the back of the chute is desirable when working at the back of the animal (castrating, pregnancy testing, etc.) A palpation cage can be substituted for the service gate if desired.

The **working chute** connects the holding chute and the holding pen. It should be a maximum of 26 inches wide. This width will be different if a V-shaped chute is used. The working chute should be 5 feet high for British breed cattle and 5 ½ to 6 feet high for exotic breeds. It should be long enough to accommodate four or five animals at a time. Some cattle owners prefer to have the working chute curved so animals cannot see the headgate or holding chute ahead; this aids in making the cattle movement easier. It should have solid sides so cattle will not balk because of things they see outside. To prevent balking, the blocking gate at the junction of the working chute and the holding chute should allow an animal to see the animal ahead. "Back up" bars in the working chute can be used to prevent animals from moving backwards.

The **crowding pen** is located at the back of the working chute. Size should be about 150 square feet, which will hold 6 to 10 head of cattle. The pen should form a gradual V as it approaches the working chute. If one side of the V is straight with the working chute and the other side angled out, the cattle will be less apt to bunch up. A solid crowding gate should be used to push animals from the V into the working chute.

**Holding pens** should be located so they fit conveniently with the rest of the facility. Each holding pen should provide approximately 20 square feet per animal.

**Scales** should be made a part of a beef cattle handling facility if possible. The scales should be located so cattle can be easily moved on and off. Do not locate scales so cattle must cross them each time they are worked. Locating the scales in this manner results in a shorter life and greater repair costs.

The **loading chute** should be located directly off the crowding pen, allowing easy movement of cattle. The loading chute ramp can be either sloping or stepped. The maximum incline should be 30 percent (3 ½ inch rise per foot of incline). Adjustable ramps are convenient when trucks or trailers of different heights are used. The length of the loading chute will depend on the height required; however, it should be at least 12 feet long. The loading chute should be 26 to 30 inches wide.

## Summary

Cattle handling facilities are essential to have a profitable cattle operation and to carry out an effective health program. Properly designed facilities are essential to correctly carry out health and management practices. Appropriately designed and constructed cattle handling facilities also aid in the reduction of bruises and injuries to cattle that reduce their value.

## **Recommended Dimensions for Corral and Working Facilities Cow-Calf Operations**

Holding area, sq. ft./hd	
Cows .....	20
Calves .....	14
Crowding pen sq. ft./head	
Cows .....	12
Calves .....	6
Working chute with vertical sides	
Width .....	26in.
Length (minimum).....	20ft.
Working chute with sloping sides	
Width at bottom inside clear .....	18-20in.
Width at 4 ft. height Inside clear .....	30-33in.
Length (minimum).....	20ft.
Working chute fence	
Recommend minimum height.....	50in.
Depth of posts in ground (minimum).....	36in.
Corral fence	
Recommended height .....	60-66in.
Depth of posts in ground (minimum).....	36in.
Loading chute	
Width .....	26-30in.
Length (minimum).....	12ft.
Rise .....	3.5in./ft.
Ramp height for:	
Stock trailer.....	15in.
Pickup truck.....	28in.
Stock truck.....	40in.
Tractor-trailer .....	48in.
Double-deck trailer.....	100in.