

Vet Call

by Bob L. Larson, DVM, University of Missouri



Facilitate cattle handling

Many beef producers will confine growing cattle on their farm for part of the year. The calves will be either home-raised or purchased. For those operations, proper receiving pens and lots are essential to maintain good health and growth performance.

In addition, almost all beef operations require some type of handling facility to administer health and production management, such as treatment of sick animals and administration of vaccines, implants and parasite control.

■ Pen design

Pens should have good drainage and be able to minimize the amount of mud that accumulates. The amount of area required for calves varies because of annual rainfall and drainage. In the western High Plains, many lots can utilize only 200-300 square feet (sq. ft.) per head. A typical lot in the Midwest should probably plan for at least 300-400 sq. ft./head, depending on drainage.

Mud greatly increases the net energy needed for maintenance of cattle and increases their level of stress. Well-maintained mounds that provide 20-25 sq. ft./head for 400- to 800-pound (lb.) animals or 30-35 sq. ft./head for 800- to 1,200-lb. animals will provide the calves with an escape from deep mud.

Evidence suggests that cattle standing in mud up to their dewclaws have 5% poorer feed conversion than cattle in a mud-free lot on the same

ration. If the mud gets as deep as their hocks, feed conversion is 25% poorer.

In new pens, complete the mound shaping before building fences, pouring concrete or installing water lines. In most cases you can use soil from the pen itself or from soil removed to make debris basins or holding ponds.

On sites with less than 2% slope away from bunks, you might need to haul in soil to provide adequate mounds. In existing pens, clay is the best mound-building material. Pack the mounds in 8- to 12-inch (in.) layers as they are built.

Build mounds large enough

to permit the use of heavy equipment for snow removal and maintenance. Good drainage with minimum soil erosion requires steep slopes on the mounds with less slope in the valleys.

Avoid using bedding as it absorbs and holds moisture, defeating the purpose of the mound. For soils other than clay, or soil and manure mixtures, incorporate 2 in. of agricultural limestone into the surface of the mound to increase runoff.

Start the access to the mounds at the bunk apron. If the pen surface slopes directly away from the bunk, build the

mound perpendicular to the apron. If the pen is built on side slopes, mounds should join the bunk apron diagonally, with the valley on the high side of the mound having good drainage the full length of the lot. Where the pen surface slopes in the range of 3%-6% away from the bunk, raise the crest of the mound 4-8 feet higher than the water trough apron and continue it at about this level to about three-fourths of the length of the pen. Where pen slopes are less than 3%, mounds need more buildup.

■ Feedbunks

Calves are not usually competitive at the feedbunk, so, in a limit-fed situation, 22-26 in. of bunk space per head for grain or supplement diets is required. When feeding hay or silage that is available at all times, 4-6 in./head is needed. If feeding a total mixed ration that is always available, 12-18 in./head is required.

For bale rings allow 4-6 in. of space per head if hay is always available and 18-24 in./head for limited feeding. Although hay rings usually have about 18 spaces, maximum usage is at about two-thirds capacity (personal observation).

■ Water delivery

Portable water must be available in sufficient quantity so cattle have ready access without competition. Insufficient space for animals to drink, low flow rates, low storage capacity, high mineral content or unfamiliar taste can all discourage water consumption to the point that feed intake is reduced.

Adequate trough size and



When feeding hay or silage that is available at all times, 4-6 in. of bunk space per head is needed.

PHOTO COURTESY OF BEEF MAGAZINE

flow rate are both important to ensure a proper water supply. Received calves and yearlings will drink 6-15 gallons (gal.) of water per day depending on calf size and environmental temperature. Provide 2 ft. of water-tank perimeter for every 25 head if cattle drink throughout the day. If the entire herd drinks at once, 2 ft. of tank perimeter per head is necessary.

For pasture or range systems, use water tanks with a capacity that can provide at least a one-day supply. Because range cattle usually all drink within a short period of time one or two times per day, the watering system (pump, pipe diameter, reservoir, etc.) should be able to supply the entire day's supply within four hours.

Feedlot watering systems require tanks with at least 50% of a one-day supply available, and the system should be able to provide the day's supply within eight hours.

Water sources that are not accessible due to mud or erosion also will result in reduced feed intakes. To prevent this problem, tanks and waterers should be placed on concrete slabs that extend at least 10 ft. in each direction. Ponds should be well-maintained to allow adequate access, or they should be fenced off and serve as a reservoir for a float-controlled automatic water source with a concrete slab or rock base.

■ Working-chute design

Working-facility design is based on knowledge of cattle behavior. Cattle should be able to move from the pens to the treatment area and through the treatment chute with a minimum of stress to both the cattle and the producer. The treatment area should be easy to clean and provide nonslip flooring in the crowding pens, alleys, chutes and chute exit.

Because cattle are motivated by fear, don't let them become agitated. Cattle are herd animals and tend to become fearful when left alone. Strategies to minimize fear include moving



Received calves and yearlings will drink 6-15 gallons (gal.) of water per day depending on calf size and environmental temperature.

cattle slowly and quietly and always moving cattle in small groups. Do not use dogs to move cattle in confinement, and minimize the use of electric cattle prods.

Because cattle balk at moving or flapping objects, the crowding pens, single-file alley and loading ramp should be constructed with solid sides so cattle can't see outside the working facility.

Once the cattle approach the working facility, don't overcrowd them. Never completely fill the crowding pen. Rather, fill only one-half to three-quarters of capacity, and do not "crush" the calves with the crowding gate to force them into the single-file alley (also called a *snake*). The crowding gate is used to follow the cattle, not to shove them.

Cattle should have room to move in the crowding pen with the only visible route of escape being the alley. If a lone animal refuses to move, release it and bring it back with another group. An animal left alone in a crowding pen will become agitated and may attempt to jump the fence to rejoin its herdmates.

Single-file working alleys should be narrower at the bottom than at the top so

different-sized animals can be worked in the same facility without being able to turn around. In addition, overhead bars are needed in the alley to prevent cattle from rearing and flipping over backwards.

Solid-sided, curved working alleys (single-file alleys) take advantage of cattle's natural circling behavior and prevent cattle from seeing the squeeze chute and people working at the chute until they are almost caught. A catwalk along the inside curve of the alley will force the handler to stand in the best position for moving the animal and will let the animal circle around the handler. Never have an overhead catwalk.

Cattle are motivated to maintain visual contact with each other. Each animal should be able to see others ahead of it. Make single-file chutes at least 20 ft. long (30-50 ft. for larger facilities).

Don't force an animal into a single-file chute unless it has a place to go. Blocking gates in a chute need to be "see through" so cattle can see the animals ahead. If a calf sees a dead end, it will balk. Wait until the single-file chute to the squeeze is almost empty before refilling.

Cattle have excellent wide-angle vision (in excess of 300

degrees) due to the wide position of their eyes. They can see behind themselves without turning their heads. And while cattle do have depth perception, they have difficulty perceiving depth at ground level when their heads are raised. To see depth near the ground, a calf has to lower its head, perhaps explaining why cattle balk at distractions at ground level.

Because contrasting patterns caused by fence or panel shadows will cause balking, lighting considerations are important for moving cattle smoothly. In addition, cattle in the dark will move towards a dim light, but they tend to balk if they have to look into the sun or a bright light.

Calves may refuse to enter a dark indoor working alley from a bright outside crowding pen. Extend the alley outside the building or cover the crowding area.

■ Safety considerations

To protect all the people handling cattle at a stocker or backgrounding facility, the corrals, working facilities and chutes must be in good repair and must match the operation and cattle. Gate latches and latches on the squeeze chute (headcatch and squeeze) must have scheduled, proper maintenance because slipped latches are dangerous.

All persons using the squeeze chute should know where the pinch points are, and they should know the arc of movement of squeeze bars and headcatch handles. Pipes slid behind cattle to serve as a backstop are dangerous because an animal moving either forward or backward rapidly can trap a person between the pipe and the side of the alley or chute. To prevent being injured directly by an animal, do not get in the crowding pen or single-file alley with cattle.

e-mail: larsonr@missouri.edu