

Cattle Handling Facilities: Squeeze Chutes, Headgates, and Loading and Unloading Chutes

Our topics for this week are:

- Body and head restraint for cattle
- Ramps for loading and unloading cattle for travel

Squeeze Chute and Headgate

Squeeze chutes are metal boxes with a headgate to entrap individual cattle. Headgates are stanchions (head catches) that close on the cow's neck preventing it from escaping forward or back but can also open as a front gate. A squeeze chute can press on the sides of the cow's body preventing side to side movement. The upper section of the sides have drop down bars and the lower section has removable panels to provide access to different areas of the cow's body. Squeeze chutes can be permanently bolted to a floor or others have their own wheels for portable use. A squeeze chute and head catch should be 1 inch steel rods welded flush with the floor in scales and squeeze chutes. Equipment should be padded where steel hits steel. The headgate should move smoothly, quietly, and quickly. Outdoor squeeze chutes should be oriented north-south to prevent cattle facing the sun when approaching the chute.

Although it is an uncommon procedure in the U.S., cattle should be trained for restraint in squeeze chutes and headgates. After each training step, the cattle should be fed a small amount of grain or choice hay. The first step is to allow the cattle to walk through the chute several times as quietly as possible. The next step is to stop them in the chute without squeezing them and then release. Finally, they are stopped in the chute and the sides squeezed gently and released without any other procedures being done on them. When procedures (ear tagging, vaccinations, castration, etc.) are performed on them in the future, release from the chute should be timed for when they are not struggling. Release should be into a pen with other cattle and grain or choice hay.

Procedures that are best performed in a squeeze chute and headgate are vaccinations, giving injectable medications, drenching, bolusing, castration, dehorning, treatment of eye conditions, fertility exams, implanting, ear tagging, branding, bolus administration, stomach tubing, and collection of blood from the jugular vein. All squeeze chutes, including portable ones, should be securely fixed to the ground to prevent tipping or sliding.

Squeeze chutes that are used for dehorning or branding should not be used for artificial insemination. Artificial insemination is best performed in an *AI-dedicated dark-box* without a headgate or squeeze. AI dark-boxes are 28 inches wide with solid sides, front, and top. A cloth hangs on the back of the box and drapes over the cow's rump. If wild cattle are handled, the dark-box should be the length of two cows, so that a calm cow can be run in first and aid in pacifying the back cow to be inseminated.

The *headgate* in a squeeze chute (British is "cattle crush") entraps the cow's head just behind its ears. Cattle are driven into the chute and caught by vertical bars as soon as the ears go through and before the shoulders get into the headgate. As soon as the head is caught, a bar is placed behind the cow to prevent it from pulling back on its jaw and ears. Depending on the

restraint needed, the sides of the chute may be squeezed against the cow to limit movement. A stanchion is a simple head catch without a chute.

Headgates can have straight or curved stanchion bars. Curved stanchion bars limit the vertical movement of the head more than straight stanchions reducing the risk of being butted by an upward head movement, but curved bars can cause choking if the cow goes down. Headgates may have adjunct swinging bars. A head bar is a straight bar that goes over the back of the neck preventing the head from being thrown upward. A nose bar has a bend in the middle that fits over the bridge of the nose preventing the head from thrusting forward.

There are 4 types of headgates: scissors, full opening, positive control, and self catching. The most common type is scissors. A *scissors stanchion* has halves that pivot from the bottom and squeeze the sides of a cow's neck. It opens from the front, and the bars may be straight or have a curve at the points of contact with the neck. Straight bars allow the head to easily move vertically. Curved bars may put pressure on the carotid arteries and cause the cow to faint. Prolonged procedures, like many veterinary medical procedures, should be performed in straight bar headgates. This headgate may have a head table or nose bar attachments to limit vertical head movement.

The fully opening stanchion has gale halves that work like sliding doors. It permits an easier exit for large cows and bulls. The positive control (guillotine) headgates close from above and below which can cause choking. Positive control headgates were more common when horned cattle were popular. Release is relatively slow requiring the cow to back after releasing its head and then opening the front like a gate or releasing from the side of the chute. The self-catching headgate works by a cow's shoulders hitting the stanchion bars and moving them forward to close. This can malfunction allowing escape or if not properly adjusted for the size of each animal.

Butt bars prevent backing up when released through the front. Butt bars also are placed behind the first cow in an alleyway and the last cow. Drop down gates to block backing up are safer than butt bars if counterbalanced to prevent injury to cattle backs. If using a butt bar, the handler should always keep his body at the end of the bar in case the other end is suddenly hit by a cow and the handler's end is swung forward or backward. Butt bars in squeeze chutes can break the arm of someone doing a rectal palpation if the cow suddenly goes down.

Single file alleyways leading to restraint chutes should be curved. *Catwalks* that keep the handler above the sight of cattle help forward movement. Bars or gates that slide across the alleyway or gates that drop down should be used to prevent backups, but a bar or gate should never be placed behind a handler in an alleyway moving cattle. Vertical gaps in alleyway allow safety escapes or movement from one side of an alleyway to another. When tying a lead rope to a cleat on the side of the headgate, the handle must pull and hold line while making wraps and ending with half hitches on the cleat. The wraps should be done with the heel of the hand to protect fingers from getting trapped if the cow suddenly tugs on the lead rope.

Squeeze chutes and headgates can have either manual or hydraulic action. Manual levers can be ratchet-latch or friction-latch. Ratchets are noisier. Friction latches can become insecure with wear. Protruding levers on manual chutes are dangerous and can cause operator head and hand injuries and even death. Protruding levers are eliminated with hydraulic chutes. The pressure setting should not squeeze excessively which can frighten or injure cattle. Most chutes operate at 500 psi and have pressure release valves. Squeezing should be slow and steady to limit movement without unneeded pressure.

Squeeze chutes are V-shaped with the lower portion about $\frac{1}{2}$ to $\frac{2}{3}$ the width of the shoulder space. This encourages the cattle to slow down when entering the chute. The lower aspect of the V-shape is about 16 inches wide and twice as wide at the top. The width of the floor in the squeeze chute should be set to 6 inches for 400-600 lb. calves, 8 inches for 600-800 lb., and 12-16 inches for adult cattle. The squeeze should work from both sides to prevent unbalancing the cow. The flooring should be non-slip. Cattle will move into a chute if the flooring is the same color and texture as the alley. If that is dirt, dirt should be thrown onto the chute floor. Application of squeezing the sides should be slow and steady to reduce agitation. Squeeze chutes typically have removable 2 ft high side panels for access to the lower aspects of the cow with individually removable vertical bars for access to different areas of the cow's upper body. The side should open to rescue a cow that is down in the chute to regain her feet. Handlers should always open and close swinging gates in livestock enclosures, including headgates, with outstretched arms to reduce the risk of being knocked down by a bumped gate. A cow restrained in a headgate will typically put her head down and then jump forward bumping her shoulders against the gate while raising her head. A handler should never stand near the front of a cow's head in a headgate nor lean near its head.

A collection pen should be located in front of the headgate and the side opening of the squeeze chute. This will enclose cattle that get too far through the headgate to catch them in front of the shoulders and are caught by the hips and then must be released through the front. It will also contain cows that go down in the chute and are rescued by a side opening gate. Cattle that are normally released from a squeeze chute with a headgate should be penned and provided with water, salt, molasses blocks, or hay to calm down before released into a pasture. Otherwise, they are likely to run out and have a perception they have escaped. This leads to struggling harder the next time they are worked in a chute. Unstressed cattle come out of a squeeze chute and headgate no faster than a walk or slow trot.

Stanchions without squeeze chutes are common in dairies. Self-catching stanchions (headlocks) trap the most dominant cows first at feed bunks allowing others to then find a place to get to food. Stanchions are also incorporated in most veterinary clinic bovine stalls for cattle restraint during exam and treatment.

Loading and Unloading Chute

A loading chute is a loading platform or ramp used when cattle are moved between a trailer or truck and a working facility. Cattle will best move onto loading chute directly from a crowding pen or a Bud's box. Long single file alleyways to a loading chute should be avoided, and they should face north-south to prevent cattle facing the sun when loading. Cattle should be loaded single file in a chute that is a minimum of 12 ft long and 26-30 in wide. Traction should be provided with cleats every 8 inches. If concrete ramps are used, the ramp should be stair-stepped 12 inches deep with 4 inch rises. Catwalks alongside the chute are helpful in encouraging smooth loading. Fixed chutes should not exceed 20 degrees of incline. Gaps between loading chutes and transport vehicles should be blocked with self-aligning bumpers and telescoping sides.

Now let's recap the key points to remember from today's episode:

- 1. Scissor stanchion headgates are the most commonly used.**
- 2. Drop down gates are safer to use than butt-bars to keep cattle from backing**

- up in alleyways and chutes.**
- 3. A collection pen should be located in front of the headgate of a squeeze chute to draw cattle through and out of the squeeze chute.**

More information on animal handling is available in my book, *Animal Handling and Physical Restraint*, published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at: www.betteranimalhandling.com

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.