



Feed Storage and Feeding Equipment for Beef Cattle Operations

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Introduction

Louisiana cattle producers rely on stored feed to meet their herd's nutritional needs when forage growth is not sufficient. The feedstuffs utilized by producers are quite diverse, ranging from 50-pound bags of commercial feed to single feedstuffs stored in commodity barns and utilized in total mixed rations (TMR). This diversity naturally leads to a wide variation in storage systems necessary for each feed or commodity. Importantly, producers need to remember the storage system and required equipment must fit the goals of the individual operation.

Feed Storage

Whether you are feeding one cow or 1,000, the characteristics of the storage system will remain the same. The three primary goals of a storage facility are for it to be clean, dry and as pest free as possible. General cleanliness helps prevent feed contamination. Feed storage areas should be tidy and used exclusively for feed. It is not wise to store your feed and pesticides or herbicides in the same area because a chemical spill could contaminate your feed supply. Cleanliness also aids in minimizing vermin infestations.

Pest Control

One of the biggest challenges with feed storage is managing the rodent population because rodents are vectors for many zoonotic diseases. Rats and insects can feed on spilled feedstuffs and consume feed from open sacks. Keeping spillage to a minimum and securely closing feed containers limits accessibility for these pests. Some levels of rodent and insect pressure are guaranteed, but it is the job of the producer to limit infestations. The best ways to reduce rodent populations are to employ consistent cleaning protocols to eliminate spilled feed, keep the space tidy and deploy bait and traps. When selecting a bait, ensure that it can be deployed in a manner that will not harm domestic animals or wildlife.

Moisture Control

Feedstuffs must remain as dry as possible because moisture can cause the growth of mold and mildew. Contaminated feed should be discarded, although this negatively impacts a producer's profit margin. Small quantities can be kept dry by storing the sacks in a shed or waterproof container. Bulk quantities of feed require a storage bin or commodity barn to protect them.

50-Pound Bags

Producers that utilize 50-pound bags, or even super sacks, have many options for storing their feed. Opened bags can be placed in a secondary container, such as metal or plastic barrels, and stored almost anywhere. Dedicated feed rooms or sheds make feed storage simple. Feed sheds should have an all-weather access road. The shed being accessible by a tractor, forklift or at the least a pallet jack makes the job of moving and sorting feed much easier. An alternative to a dedicated feed room that many producers employ is a steel shipping container known as a conex box. Conex boxes — a name shortened from "container express" — make a great storage solution for small to midsize producers because they are durable, quick to set up and extremely secure.

Bulk Bins and Super Sacks

Operators that utilize bulk feed typically utilize bulk feed bins or super sacks. Bulk feed bins hold 1-35 tons, while super sacks (large poly sacks) hold 500-4,000 lbs. It is common for bulk feed bins to either be mounted in an elevated position to allow for gravity-fed filling or contain an auger for filling of feed dispensers.

Producers that utilize super sacks have the option to empty the sack into a feeder or to remove smaller portions of feed using a scoop or bucket. This flexibility allows producers to realize the cost benefits of purchasing bulk feed without the added expense of mechanical feed dispensers.

Commodity Barns and Grain Bins

Producers that make their own rations require access to bulk commodities such as dried distiller's grains and corn. These producers typically employ commodity barns or grain bins. Commodity barns are typically rectangular shaped with three enclosed sides and commonly have concrete dividers built into them. These concrete dividers allow trucks with a live bottom trailer to back in and unload their commodity in a designated space. The dividers also allow the producer to easily scoop commodities with a tractor bucket. If a producer is storing corn or soybeans that will be used in a ration, the simplest way to house that commodity may be to keep it in a grain bin or feed hopper and auger it out as needed. The size of grain bins varies greatly, with capacity ranging from 100 bushels to as much as 200,000 bushels.



A large commodity barn. Photo by Tripp Morgan

Feeding Equipment

There is an extensive amount of equipment associated with the feeding of beef cattle. This section will focus on the equipment that is used most in Louisiana.

Feed Bunks/Troughs

While not necessary in all cases, feed troughs find a place in most feeding protocols across the state. Louisiana's wet climate increases the need for feed troughs because feed placed on wet ground will be subject to waste. There are numerous types and styles of feed troughs, but higher quality options all have a few characteristics in common. Due to Louisiana's high average rainfall in the winter feeding season, feed troughs must be capable of draining. If troughs are not drained, the producer must manually empty the trough after each rain, slowing down the feeding process and needlessly increasing the producer's workload. Feed troughs must be portable if not used in a permanent feeding location. Producers should be able to move their feed troughs around the pasture to prevent damage to the sod, reduce compaction and evenly distribute feces and urine across the pasture.



Permanent feedlot feed bunk. Photo by Tripp Morgan

Portable Gravity-Fed Bulk Feeders

Portable gravity-fed bulk feeders allow producers to keep free-choice feed out for their cattle with limited labor required by the producer. One negative is that the producer cannot control how much feed will be consumed by the cattle each day. If not consumed quickly enough, the feed may spoil if subjected to too much moisture.

Creep Feeder

Creep feeders are similar in concept to gravity bulk feeders but often smaller and with a gate in front of the feeder that allows only calves to enter and eat. This helps put additional weight on calves and aids in reducing stress at weaning because the calves are already acclimated to feed and eating from a trough.



Portable feed trough. Photo by Tripp Morgan

Bale Bed

A bale bed is a standard flat bed for a pickup that includes a hydraulic motor, allowing the producer to handle hay bales without a tractor. There are two primary types of bale beds: spear beds and unroller beds. Spear beds allow the producer to spear the bale and carry it to the field. Unroller beds do the same, but once the producer reaches the field, they have the option to unroll the bale.



Truck with a spear type bale bed. Photo by Tripp Morgan

Feed Hoppers

Producers who use bulk feed may benefit from using feed hoppers mounted on the bed of a pickup truck or trailer. This allows the producer to quickly and easily fill the hopper with feed and take it to the field. This can often be done without the producer having to exit his truck, saving time and labor. Truck-mounted feed hoppers are often used in combination with a bale bed. Trailer-mounted feed hoppers offer the benefit of not permanently limiting truck bed space and are also commonly referred to as powered feeding buggies.

Gravity-Fed Feed Buggies

These can be used for both the storage and distribution of feed. Small gravity-fed feeders hold around 1,000 pounds. However, there are smaller versions for alternative uses such as feeding small ruminants or wildlife. Gravity wagons can be built or bought to hold tens of thousands of pounds. To use these wagons, the producer enters the feeding area and simply opens the gate, allowing gravity to cause the feed to come out.

TMR Mixers

Total mixed (TMR) ration mixers are used by producers to make their own rations. Stationary mixers only mix the ration, while mobile mixers also allow rations to be transported to the fields.

Summary

The feed storage and equipment requirements of Louisiana cattle producers vary greatly depending on the scale of the operation. Requirements could be as basic as a metal trash can to keep a bag of feed out of the elements to as extravagant as a full commodity barn with hay bale processors, mixers and feed trucks. Regardless of the scale, the basics are the same. Feed needs to be easily accessible and kept clean, dry and free from vermin. Also, a sensible system of delivering the feed from the storage facility to the herd needs to be established to increase the producer's speed, efficiency and overall productivity. For questions about effective feed storage or to discuss feeding protocols and equipment, please reach out to your local LSU AgCenter Extension office.



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