Healthy Rations Begin with High Quality Feed

The Harvestore®

Feed Storage Structure

Get control of your feed storage costs!

See the *StoragePros* – Your Authorized Engineered Storage Products Company Agricultural Dealer.

ENGINEERED STORAGE PRODUCTS COMPANY

Three Good Reasons To Choose A Harvestore Structure:

The Harvestore structure uses glass-fused-to-steel technology developed in 1949. During the past fifty-plus years our processes have been refined, techniques improved, and most importantly, experience has been gained.

Today's Harvestore structure represents the knowledge acquired by processing hundreds of thousands of glass-fused-to-steel sheets, used in structures around the world.

FORAGE STORAGE COST ANALYSIS

	Harvestore Structure	Concrete Silo	Bunker	Bags
Installation Costs:	$90,000	$62,000	$74,000	$48,100
Annual Fixed:	$10,430	$7,665	$8,900	$6,063
Annual Maintenance:	$2,968	$2,205	$1,377	$1,176
Annual Operating:	$1,784	$1,980	$5,914	$9,905
	$15,182	$11,850	$16,191	$17,144
Cost of Storage Losses:	$2,079	$6,804	$10,971	$6,174
Net Annual Cost of Owning and Operating	$17,261	$18,654	$27,162	$23,318

Other factors to consider are your feed quality and management practices. To start the process, talk with your friends and neighbors who own Harvestore structures.

Convenience. Consistency. Cost.

Convenience...

With a Harvestore structure, you can load forage at the top and push a button to unload it from the bottom. You can be feeding previously stored feed from a structure... and at the same time be adding fresh forage at the top. It easily functions as the cornerstone of your storage and feeding system. Also, the structure is designed for push-button, automated feeding. You stay indoors, not outside in the rain or snow.

Consistency...

With forage, bottom unloading combined with top filling keeps the rations being fed more consistent from day to day. The chances for abrupt feed quality changes are greatly reduced because the first feed in is the first feed out.

Cost...

Your authorized Engineered Storage Products Company agricultural dealer has a computer program called StoragePro™. It is an impartial, comparative feed storage analysis that uses data from your farm and calculates your real life feed storage costs.

Using the StoragePro analysis program, you can compare the differences in feed storage costs. What are the costs with a Harvestore structure? What are costs of other feed storage methods? That depends on your numbers. The first step in controlling feed costs is knowing what they are. The accompanying chart is for a sample farm. For your costs, see your authorized dealer.

Is it right for you?

Livestock farmers usually purchase a Harvestore storage structure after deciding their production would be best served with a system that offers the following features:

- The ability to store and feed haylage at 40 to 55% moisture
- The ability to store and feed grain at 22 to 35% moisture
- Reduced storage dry matter loss
- Improved feed consistency
- Convenient top loading
- Convenient and fast bottom-unloading
- Easy and accurate automated feeding
- Durable glass-fused-to-steel engineered construction

Why Moisture Level Is Important

Harvestore structures are recommended for storing grain at moisture levels of 22 to 35%, and for storing forage at moisture levels of 40 to 55%.

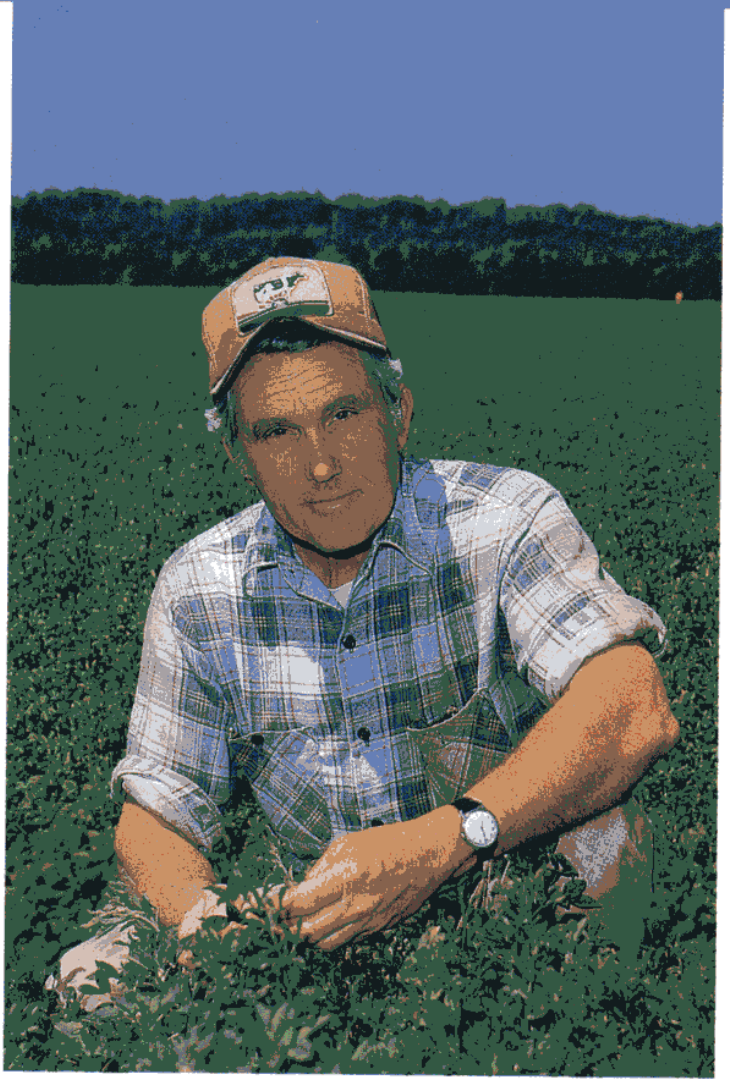
High Moisture Grain

High moisture grain generally refers to grain with a kernel moisture content of 22 to 28% moisture which has undergone natural fermentation in a storage structure that reduces the access of air to the feed. Optimum moisture levels are about 25% for shelled corn, 30 to 35% for corn and cob mix, 28% for sorghum grains, and 28% for small grains such as barley and wheat. High moisture grain has a pleasant fermented aroma and palatability that livestock noticeably prefer.

By feeding high moisture grain, Harvestore structure owners have been able to harvest earlier and reduce field losses. They also eliminate expensive energy costs to dry their grain. Also, because carbohydrates are more readily digested, high moisture grain leads to improved livestock feed conversion rates. Some farmers have been able to plant later-maturing hybrids that may lead to increased yields.

Haylage

Forage stored at 40 to 55% moisture is known as haylage. By feeding haylage, Harvestore structure owners have been able to cut back on harvesting losses compared to hay, reduce waste at feeding time, and get their animals producing closer to their genetic potential. We encourage you to talk with your nutritionist about haylage and the role it can play in your livestock's requirements for total dry matter intake.

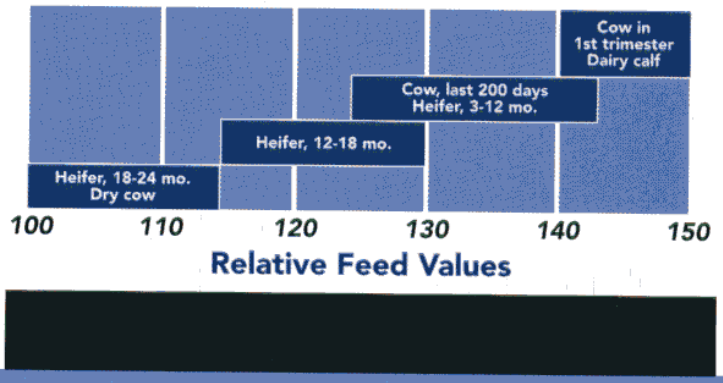


Value of High Quality Haylage in a Dairy Ration

- *Quality forage is the primary source of protein in a ration*
- *Protein is contained in a forage's dry matter*
- *Dry Matter Intake (DMI) is more important than total intake*
- *High DMI is directly related to high production*
- *Haylage DMI decreases in rations below 35% moisture*
- *Haylage DMI maximizes in rations at 50 to 60% moisture*
- *Each 1 lb. extra DMI = 1.4 lb. milk production increase*

"Highest quality forages should be fed to the highest producing cows and the young dairy calves -- top producers are working hard and need the benefits it can provide, and calves need it to get off to a good, healthy start."

Dr. George Marx, University of Minnesota, Crookston Ag Research Center



The Making of a H

Push Button Fill Doors™

With internal breather bags and the Push Button Fill Doors system, you can avoid the strenuous daily job of climbing to open and close the doors on your structure. Instead, you can do it all with a simple push of a button at a convenient ground level control panel. Climbing is only required when you're finishing the filling process.

Combined with external breather bags the need to climb a structure is eliminated.

Two-Way Pressure Relief Valve

When the breather bags are empty, the pressure relief valve allows gas out. When the breather bags are full, the pressure relief valve may allow air into the head space. This feature protects the structure and breather bags from excessive pressure inside the structure.

Durable Glass-Fused-To-Steel Construction

Molten glass is fused to both sides of the steel sheets to create a coating that is hard, durable and long lasting. This glass coating is formulated to resist acids from fermented feeds. The smoothness of the glass allows feed to slide down easily. Sheet thicknesses are designed to meet the varying stress requirements from top to bottom.

Urethane Based Sealant

Every sheet is edged with a sealer formulated specifically for the sheet joints. After joint assembly, this sealer cures in place to form a durable rubber-like gasket.

Web Truss Stiffeners

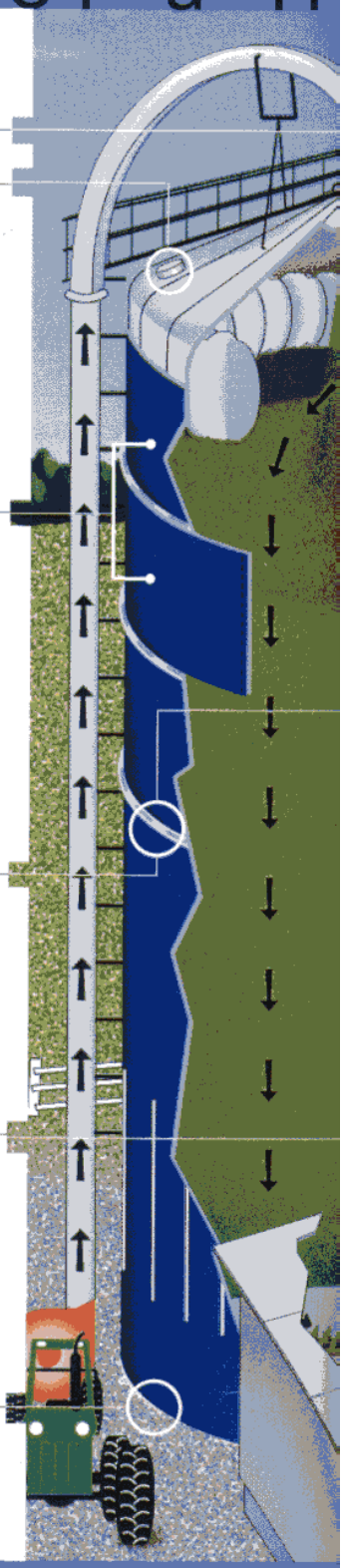
Built with our exclusive, proprietary design, web truss stiffeners increase the structure's ability to resist wind forces. The web truss stiffeners meet our own rigid design code and meet or exceed AISC standards.

Lightweight Aluminum Doors

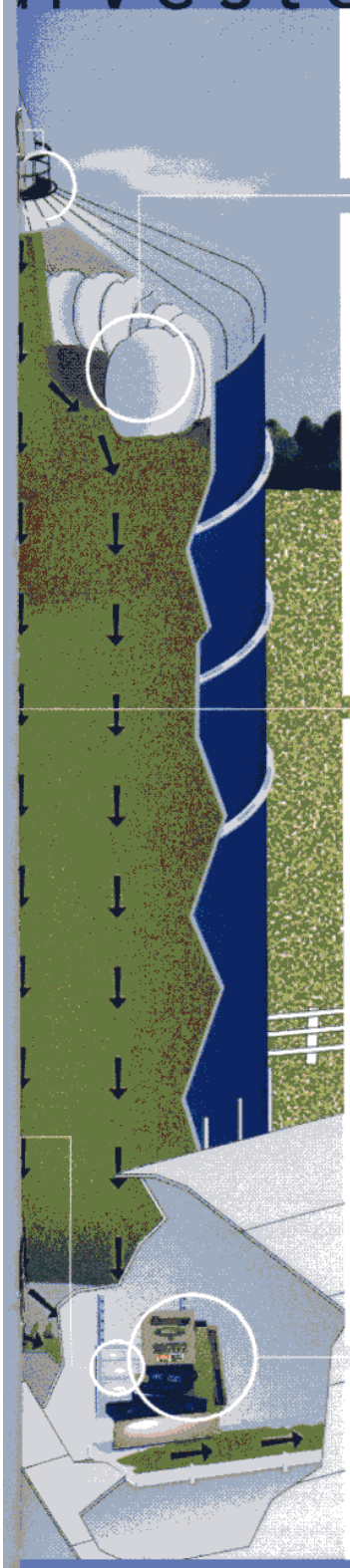
Lightweight aluminum doors and hatches are gasketed with flexible seals that can be clamped tightly with "marine type" handles.

Engineered Concrete Foundation

When a Harvestore structure is built to Engineered Storage Products Co. specifications on a monolithic footing, it meets national building requirements and is matched to your farm's soil strength. Firmly attached to this base is the first ring of sheets. Then more concrete is placed inside the base sheets. This creates a unitized, engineered base for building. The steel unloader trough is integrated into the foundation and is a vital part of this quality foundation. Accurate trough installation means consistent and stable unloader operation.



arvestore Structure



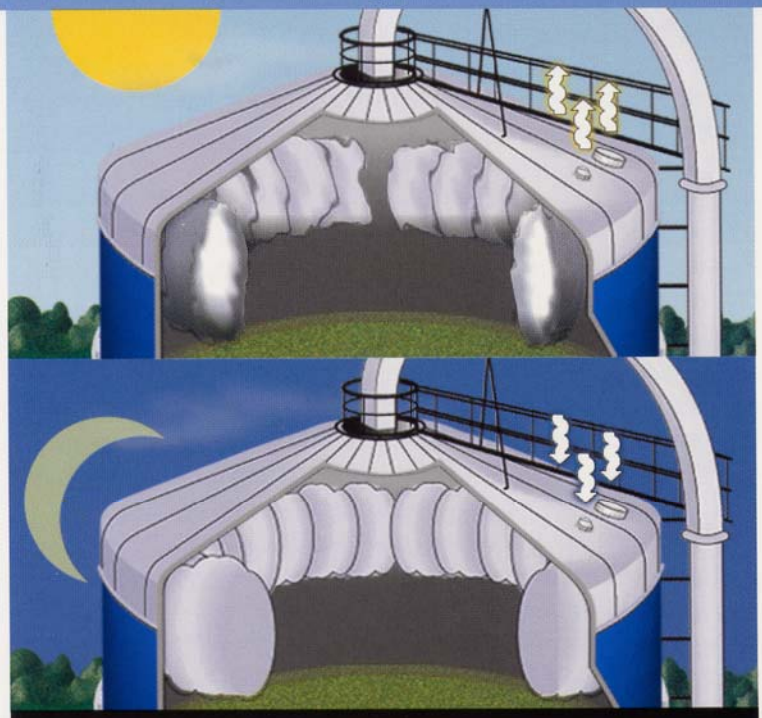
- *Multi-Purpose Design*
  Once installed, an unloader can be taken out and replaced without reworking the structure's base. Your authorized dealer can also switch your structure storage capabilities from haylage to high moisture grain.
- *Breather Bags*
  Internal breather bags are a standard unique feature with the Harvestore structure. For more details on this one-of-a-kind technology, see page 6. External bags are optional.
- *Even the bolts are engineered*
  High strength structural grade bolts are designed to handle specific joint stress loads. The acid-resistant bolt heads are located inside the structure. The smooth, rounded cap minimizes resistance to the downward movement of feed.
- *Expandable and Moveable*
  Many models can be made taller to increase capacity as your production requirements grow. Also, a Harvestore structure can be taken down and moved. NOTE: Modifications of any kind must be done to manufacturer specifications by an authorized Engineered Storage Products agricultural dealer. He has direct access to the current procedures plus the current factory specified parts and equipment to maintain the structure's design integrity.
- *The Alliance® Forage Unloader*
  The Alliance is our most powerful bottom unloader. It offers heavy-duty durability, consistent feed delivery and push-button ease for today's high capacity structures. It is the recommended chain-type unloader for large livestock operations.

  Technologically-advanced, the Alliance combines state-of-the-art design with patented engineering concepts. Simply stated, it is our strongest, most powerful bottom unloader.

  For haylage, the Alliance's rugged rotating cutter arm cuts into the compacted feed, drawing it across the structure's floor to a delivery chain located in the trough. Also, its Arm Advance Sentry™ automatic arm control reduces the need for operator adjustment, and makes them easy to do when they are needed.

  It also incorporates several innovative maintenance features for a new level of service life. See your authorized dealer for more information.

Breather bags deflate during the warmer daytime and inflate during the cooler nighttime.



Only a Harvestore Structure Has Breather Bags

Air dilutes fermentation gases and reacts with the feed. This lessens the time the feed can be preserved near its harvested level of quality.

There are several features built in to a Harvestore structure that are designed to help reduce the amount of air that can get in. These include the glass-fused-steel sheets, special sealant, rubber-like door gaskets, marine-type doors, and breather bags.

Keep in mind that all feed storage systems allow air to come in contact with the stored feed. However, compared with most other methods, proper operation of the Harvestore structure allows you to reduce the amount of air which contacts the feed during storage.

How much air that comes into a structure will depend upon such factors as fill level, climate, how often and how long the feeding door is opened, and how often the pressure relief valve operates. Yet when compared to conventional storage methods, and with proper management techniques, you will have less dry matter loss from air entering a properly sized Harvestore structure.

How Breather Bags Work:

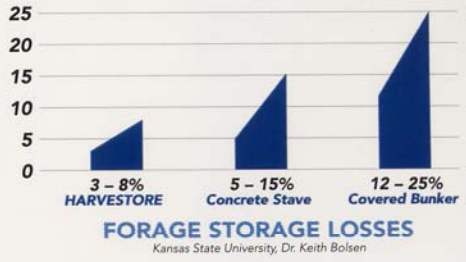
Breather bags are usually located inside the structure. Your authorized dealer may suggest placing them outside the structure if space is available. Air flowing in and out of properly operating and properly maintained internal breather bags does not come in contact with the stored feed and does not dilute fermentation gases.

To understand how breather bags work, compare a Harvestore structure to a silo without breather bags. In the silo, heat expands the gases and the gases exit via any available avenue, even through the concrete sides. When the gases inside cool and shrink, air is pulled into the silo via any available avenue. This inward and outward movement of air dilutes important fermentation gases and creates an environment that lowers feed quality.

In a Harvestore structure, the interior gases heat and expand in the same way. But instead of forcing their way out of the structure through the stored feed and through the sides, the expanded gases first exert pressure on the breather bags. The air inside the bags is forced out (like exhaling) from the structure. If the inside pressure exceeds the capacity of the breather bags, only then do the gases exit the structure through the pressure relief valve. The setting of the pressure relief valve is preset at the factory.

When the gases cool in a Harvestore structure, the inward force pulls on the breather bags and (like inhaling) they inflate. This greatly lessens the dilution of valuable fermentation gases and contributes to a beneficial preservation and fermentation environment. There is no equivalent accessory capable of performing this function in a conventional top-unloading silo, bunker or trench. One significant result is reduced forage storage losses in a Harvestore structure.

BREATHER BAGS AND OXYGEN-LIMITING DESIGN CONTRIBUTE TO REDUCED STORAGE LOSSES.



FORAGE STORAGE LOSSES

Kansas State University, Dr. Keith Bolsen

New and Pre-Owned Harvestore Structures:

Most new Harvestore structures are available to store either forage or grain. Two families of structures are specifically designed for grain only.

Your authorized Engineered Storage Products Company agricultural dealer can supply a pre-owned structure to meet your needs. When erected by an authorized dealer using Harvestore structure and foundation rebuild kits, a pre-owned structure can be rebuilt to meet the same rigid structural design specifications required of new structures.

Harvestore Branded Parts and Service

Your authorized dealer has direct access to recent factory service bulletins, product parts lists, and update kits. He has an extensive inventory of Harvestore Branded™ parts, the only parts that are factory authorized. The combination of genuine Harvestore Branded parts and authorized Harvestore structure dealer service can help keep your equipment operating satisfactorily.

The Importance of Safety

When operating a Harvestore structure, **please read and study all manuals and pay strict attention to all safety signs.** Also, before using a Harvestore structure, you should understand and follow the operator's manual. If you do not have a manual, one can be obtained through your authorized dealer.

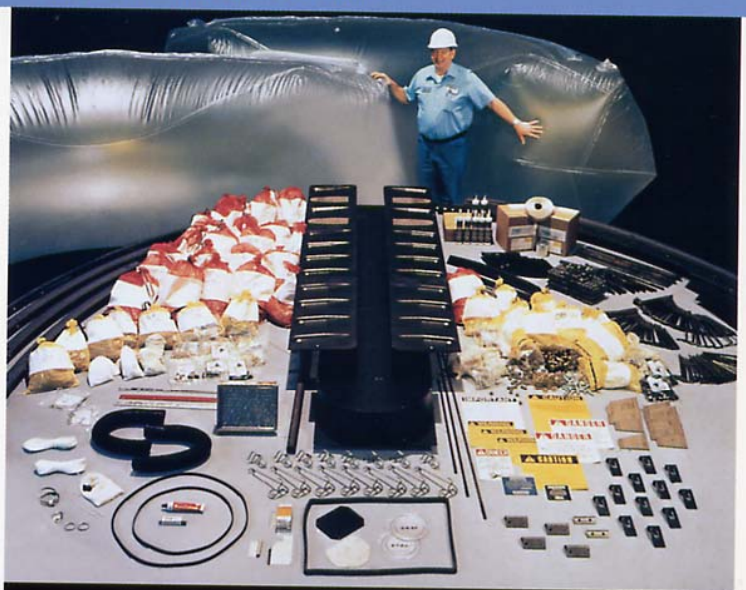
Decals placed on equipment provide important safety and operating instructions which you should follow whenever using the products.

Guards, covers and grates provide protection from certain of the equipment's moving parts which would otherwise be exposed. You should keep these safety items in place and in good operating condition. Their removal exposes you and others to serious injury or death.

For unloader operation safety, there is a structure access door interlock system which disconnects the power to the unloader control when the structure's unloader access door is removed.

Safety awareness is the difference between life and death. The structure is designed to hold feed and the environment inside may be deadly. Do not enter. Always call your authorized dealer.

Harvestore Structure Rebuild Kit



Harvestore Branded™ parts used to build a pre-owned structure to factory specifications:

- *New breather bags*
- *New trough*
- *New floor plates*
- *New tie rods*
- *New sealer bolts and retaining clips*
- *New foundation sealer*
- *New joint sealer*
- *New tapered spacers*
- *New gaskets*
- *New structure bolts/nuts/washers*
- *New ladder & guard rail stainless steel fasteners*
- *New ladder (Available option)*
- *New roof (Available option)*
- *New foundation angles (Available option)*
- *Safety door interlock system*
- *New safety decals*
- *New operator's manual*
- *All new parts used to rebuild a pre-owned structure have a full one year warranty*

Authorized Engineered Storage Products Agricultural Dealers

Harvestore structures are engineered for specific purposes. Diameters, the depth of the footings, the detailed trough and floor design for the unloader... even the sequence and thickness of the sheets will vary from structure to structure. Each foundation is customized to your farm, each structure is engineered for a specific use. Improper construction caused by following out-of-date guidelines can mean faulty unloader operation, create poor seals, cause unlimited problems, or lead to structure failure.

That's why it is extremely important to purchase a structure from an authorized Engineered Storage Products Company agricultural dealer. Only an authorized dealer has the specialized equipment and timely, direct from the factory knowledge to do the job right.

Manufacturer warranties are only applicable on products built by an authorized dealer to factory specifications.

Full Circle Storage

In addition to the Harvestore structure, we offer the glass-fused-to-steel Slurrystore® manure storage structure. It is a durable, environmentally safe storage tank designed to work with the newest processing technologies. See your authorized dealer for details.

Here's how your authorized dealer can help...

The most important step towards producing and feeding quality haylage is calling your authorized dealer. There are plenty of good reasons:

- They help you determine how a Harvestore structure fits into your livestock operation.
- Their service people receive current specifications directly from corporate headquarters.
- Engineered Storage Products offers training seminars exclusively for dealer staff.
- Dealer service people receive all bulletins and product updates from Engineered Storage Products Company. If there's been a recent improvement, they've been told about it.
- They offer factory warranty programs.
- They provide information to help you decide which equipment is best for your needs.
- They have the specialized equipment, the extensive inventory, and the commitment to serve you.
- They have a contractual agreement with the manufacturer to meet factory specifications.

A Harvestore structure is a major purchase that requires careful research and planning. We will help you get the current and correct facts. We're committed to providing quality products for the livestock farmer. For more information contact us, or your authorized Engineered Storage Products Company agricultural dealer.

ENGINEERED STORAGE PRODUCTS COMPANY

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