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Soybean Hulls Used For Fiber-Rich Animal Feed

Once considered an agricultural byproduct, soybean hulls are increasingly popular as a feed supplement for cows and other ruminants. Soyhulls, as they're commonly called, are the byproduct of processing soybeans for meal and oil production. The hulls themselves make up 8% of the bean.

Soyhulls generally do not require special processing, although they contain an enzyme called urease that can be problematic when mixed with urea-containing rations. Heat treatment reduces that risk, and the resulting soybean hulls are known as soybean mill run, soybean flakes or soy bran flakes.

One pound of soybean hulls is equivalent to 1.4 lbs. of hay, and they work on a pound-for-pound basis with corn. Soyhulls also mix well with molasses, creating a cost-effective way to finish beef cattle. Some manufacturers grind the hulls and add them to feed mixes for supplemental use. This makes them an excellent supplement for pasture diets, especially when low-quality forage is used, as they enhance overall diet digestibility and can lower the risk of acidosis. In fact, the hulls are a nearly perfect feed for ruminants like sheep and goats. They're a readily fermentable source of digestible fiber, which is essential for maintaining rumen health.

Farmer-Based Innovation Replaces Bin Sweep

"One day, as I was cleaning out a grain bin using a bin sweep and shovel, I thought there had to be a better, more efficient, and safer way," says Caleb Renner, a 5th-generation Iowa farmer and passionate innovator.

For Renner, the "better way" turned out to be AgriNet, a series of polyester mesh nets placed on a grain bin's aeration floor and connected to pulleys and electrically powered winches. Renner's innovation uses a typical auger under the perforated floor to remove most of the bin's contents by gravity. Then, a push of a button on a control panel outside the bin slowly lifts the nets in sequence, disturbing the grain's angle of repose and causing it to congregate and flow out a center sump. This action delegates all the farmer's hard work to the winches, rather than requiring entry into the bin and the associated risks to safety and health by operating a bin sweep.

Renner's current prototype lifts two curtains before a third rises to clean the remaining grain from the bin. He included three nets because 20% of a 30-ft. grain bin weighs approximately 175,000 lbs. Cables from the three nets exit the bin 15 ft. above the floor, roll over pulleys, and connect to 20 exterior winches spaced evenly around the bin's perimeter.

The AgriNet is in the prototype stage and will transition to a pilot program to test in other farmers' bins, covering different crop varieties and bin sizes. Expanding and test-

ing the project depends on funding. Renner is actively seeking investment and support options.

Manufacturing of the AgriNet will be based in Iowa.

This potential has led to many experiments replacing hay with soybean hulls for winter feeding. One study found that cows fed 4 lbs. of soybean hulls daily from December through March saved over 600 lbs. of hay and had significantly less weight loss than those fed hay alone.

Soyhulls provide flexibility because they can be fed whole, ground, or pelleted. Whole hulls are lightweight and tend to blow in commodity barns or during loading in windy conditions. Therefore, they're often ground to reduce surface area. Turning them into dense pellets improves transportation and minimizes the chance of hulls blowing out of storage bins. When soyhulls are pelleted, they have higher bulk density and are easier to transport and store without losing nutritional value.

Some animals may choke if they eat seed hulls too quickly. Most should clear the blockage on their own, but fatalities are still possible. You can reduce the risk by mixing the hulls with other feed or by wetting them before offering. Also, soy hulls contain phytoestrogens, specifically isoflavones, but only 25% of the amount found in the whole bean.



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"I honestly foresee this as the future of grain bin cleaning, replacing the bin sweep," Renner says. "The main selling point is its speed and efficiency, plus its ability to reduce liability for farm injuries."

Contact: FARM SHOW Followup, Renner Ag Solutions, Klemme, Iowa 50449 (ph 641-430-9298; calebc9298@outlook.com; www.rennergasolutions.com).



Unit comes with a winch and a hitch receiver, plus a 6-ft. electrical harness and a quick disconnect. It plugs into a standard 7-pin socket for back charging.

Winch System Simplifies Equipment Hookups

Hitching large farm equipment, such as anhydrous ammonia tanks, combine header trailers, or farm wagons to trucks for field and road transport is a challenging task for many workers. Some have limited physical strength or are hampered by shoulder or back issues. Others may be less experienced at accurately reversing a truck; darkness, poor weather, and equipment hitch tongues that are often ignored and ungreased can make it hard to maneuver.

Country Enterprises of Minnesota has addressed these issues with its EZ Hitch Assistant, a one-of-a-kind receiver/hitch winching system that winches heavy loads directly onto a vehicle.

"You still need to get out of the truck and hook the cable up, but you no longer need to wrestle with the stiff tongue and hitch," says Beth Gervais, Country Enterprises VP of Sales and Marketing. "It broadens the workforce as almost anyone can operate it."

The EZ Hitch Assistant comes with a 6,000-lb., 12-volt electric winch and 20 ft. of 5/16-in. aircraft-grade, high-tensile cable. The heavy-duty, self-centering unit is made from heat-treated ductile iron that won't

erode or wear out. DOT-certified, it's built to fit a standard 2-in. receiver on all Class 3 and 4 trucks.

"Just fit the hand clip into the cable end hole and pull the cable out to the equipment hitch you want to hook up," Gervais explains. "Pin the tank or wagon tongue to the cable end and use the remote control to winch the equipment right into the EZ Hitch connection at the rear of the truck. A heavy-duty pin secures it there for safe travel."

The unit includes a winch and a hitch receiver, plus a 6-ft. electrical harness and a quick disconnect. It plugs into a standard 7-pin socket for back charging.

Gervais recommends hooking the system up to an auxiliary battery so it can be moved to a different vehicle without permanent wiring.

The EZ Hitch Assistant is manufactured in Minnesota and available from dealers throughout the U.S. at a price of roughly \$3,000 plus S&H.

Contact: FARM SHOW Followup, Country Enterprises, P.O. Box 157, Minn. 56255 (ph 800-349-8752; justint@countryent.net; www.countryent.net).



Rotary parlor includes advanced automation, such as electronic cup removers, milk conductivity measurement, yield indicators, and pre- and post-milking spray treatments.

Dairy Uses Latest Technology

Clinton Farms uses some of the newest technology in its 750-cow dairy operation in Bear Creek, Wis. They hosted the Wisconsin Farm and Technology Days show at their dairy in August and showcased some of the technology they use today.

They operate a 50-stall Waikato Centrus Composite rotary milking system that replaced an older double-up parlor, cutting milking time from 5 to 6 hrs. to 2 hrs. The rotary parlor features advanced automation, including electronic cup removers, milk conductivity measurement, yield indicators, and pre- and post-milking spray treatments.

Milk from the parlor is directly chilled and transported to a semi-tanker, eliminating the need for a bulk tank. This setup improves milk handling.

The farm has a 212-stall freestall barn with computer-controlled fans and alley scrapers. It features a six-row configuration with two feed alleys. The barn's flooring is

slightly sloped to aid cleaning and drainage, support manure management, and keep the feed alleys dry.

Manure from the barn is automatically scraped and directed toward a storage lagoon. The manure is later processed and used as fertilizer for their crop operations.

The farm uses smart collar monitoring systems to track cow health, activity and production. Data is integrated with the rotary parlor to monitor milk yield and cow health parameters in real time.

Clinton Farms is a fourth-generation operation with family members actively involved in daily management and future planning. By hosting the Wisconsin Farm Technology Days event, they showcased their use of cutting-edge dairy technology.

Contact: FARM SHOW Followup, Clinton Farms, E 8351 WI-22, Bear Creek, Wis. 54922 (Facebook: Clinton Farms).