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RECONDITIONING OVERLY DRY SOYBEANS

This last week we posted an article on CropWatch newsletter about planning to deliver soybeans at optimum moisture at the market place that wants 13% soybeans. In a way that is really ironic because processing soybean meal for feed, the miller will prefer 10 to 11 percent moisture soybeans.

Paul Jasa, UNL Ag Engineer, worked on some tips with combine adjustments to allow for harvesting sooner, before soybeans become overly dry and shatter losses increase at 8 and 9% moisture. The article that says it's better to take a small dockage than waiting too late to harvest soybeans is at: cropwatch.unl.edu/2017/plan-harvest-deliver-soybean-optimum-moisture

Looking back in history, in 1997 Conagra Inc. paid 8.3 million to resolve criminal charges that its Peavey Grain unit illegally sprayed water on stored grain to increase its weight and value and also bribed Federal inspectors. The settlement included a \$4.4 million criminal fine, \$3.45 million as compensation for illegal profits and \$450,000 to reimburse the Agriculture Department for storage and investigation expenses. *Adding water to grain is illegal.* You cannot put the lawn sprinkler next to your truckload of dry beans and turn it on to add water weight in grain!

Furthermore, the Federal Grain Inspection Service, USDA, does not support aeration of grain for the purpose of re-humidification of overly dry grain. If you are faced with a bin of overly dry soybeans that needed to be cooled with the aeration or drying fan, and the humidity happened to be 70% or more, that is just something you cannot control. Plus, now there is humidistats and computers that help control aeration of grain. We can't ignore the technology is now there and available through multiple suppliers.

The procedure depends a lot on the weather. Most of the work done developing the reconditioning procedure was done in states to the east of Nebraska with much higher relative humidity air. With our lower relative humidity, it's less effective. Also, this works better using centrifugal fans as the motor is outside the airstream. When the motor is in the airstream, like on the typical axial-flow fans, the heat from the motor decreases the relative humidity of the air and the process becomes less effective, more costly, and takes longer.

If a bin of soybeans is aerated continuously, the beans would lose moisture during periods of low humidity and gain moisture when the humidity is high. Humidity of about 65-70 percent when aerating can recondition soybeans to 13 percent during normal fall temperatures of 30 to 60 F if there is enough time and fan capacity. That is where computer technology has come in and weather information at the bin site with new bin installations or upgrades. But there also has to be enhanced management by the farmer running the new systems or spoilage can occur, or worse yet, stress and damage to the grain bin. Other reasons to recondition soybeans include reducing splits, less dust, and less grain damage.

Reconditioning will be the most successful in a drying bin, which has a fully perforated floor and a fan that can deliver at least 0.75 cubic feet per minute of airflow per bushel. Land Grant University regional grain expert, Dr. Ken *Hellevang from North Dakota State University*, says with fall fan airflow, moving a reconditioning front all the way through the bin probably would take at least a month of fan operation with his experience.



Producers also need to be aware that soybeans swell when they absorb moisture, which could create enough pressure to damage bin walls. One way to reduce that pressure is to use a vertical-stirring auger to mix layers of wet and dry beans. Another option is to unload some beans from the bin periodically.

For more information about “Reconditioning Overly Dry Soybeans” visit the NDSU Extension Service’s soybean production guide at: goo.gl/4JXXnS

Randy Pryor, Extension Educator

University of Nebraska-Lincoln Extension in Saline County • 306 West 3rd Street, Wilber, NE 68465

Phone (402) 821-2151 • Fax (402) 821-3398 • e-mail: randy.pryor@unl.edu