Managing a Wet Soybean Crop

A wet fall can delay soybean harvest and result in drying and storing challenges

Harvesting a Wet Crop

Soybeans can be harvested successfully as long as the moisture content is 20% or below. However, harvesting above 13 to 15% grain moisture plant stems will be difficult to cut, so ensure cutter knifes are sharp and the cutter bar is in good condition. Ground speed may need to be reduced to improve cutting and allow continuous uniform feeding into the combine. Uniform feeding and keeping the threshing cylinder/rotor full can help combine efficiency when threshing a wetter crop. Draper heads can improve the uniformity of feeding and allow harvesting under wetter than normal conditions. Consult the owners manual to achieve a balance between cylinder and rotor speed and concave clearance to thresh higher moisture soybeans without damaging the seeds. If possible, wait until the soil has dried enough to support the combine as it will help avoid soil compaction which will impact following crops for several years[1].

Drying Soybeans

The target moisture for soybean winter storage is 13% and 11% for long term storage. Aeration can help keep soybeans cool and is recommend to be used immediately upon placing beans in the bin regardless of grain moisture content. In the upper Mid-west, aeration alone may not be adequate to dry soybeans to the 13% level late in the fall. Soybeans can be dried using many types of driers, but the seeds can be damaged if temperatures over 140° F are used.

If a grain spreader within in the bin is not used, core the bin by withdrawing several loads from the bin center during filling to help level grain and remove accumulated fines. This will help with the airflow within the bin as clean soybeans have about 25% less airflow resistance than shelled corn, allowing for faster drying. Consider cleaning soybeans with a rotary-screen cleaner to remove weed seeds and fines to also improve air flow.

High-temperature drying: Limit drying air temperature to 130°-140° F with a retention time of no more than 30 minutes. Retention time in the heat section of dryers should be less than 30 minutes. Avoid excessive moisture differentials from top to bottom in batch-in-bin dryers, by using shallow batch depths (two to three feet) when drying soybeans. Soybean dry quickly so check moisture frequently and if a bin stir is available, only stir once to avoid grain injury[2,3].

Low-temperature drying: Low-temperature dryers should have a perforated floor and a fan that can provide 1 –2 cubic feet/ minute of airflow. Drying time depends on air flow, weather, and initial moisture content but will probably be at least 6 to 8 weeks in the Upper Midwest during the late fall. Therefore, heat may be needed to lower the relative humidity. Prolonged exposure to air drier than 40% relative humidity may result in excessive soybean cracking. Over drying and cracking of can be reduced by not allowing more than 20° F temperature rise and use an humidistat to shut off the heater when relative humidity of the drying air is below 45%. Check soybean moisture and condition every day or two. Run the fan continuously until the drying front reaches the top layer of beans or average outdoor temperatures fall below freezing. Resume drying in spring if necessary. If you detect mold, heating, or foul odors during drying, unload the bin and sell or high-temperature dry the beans.

Sources:
[1] Staton, M. 2017. Recommendations for a late soybean harvest. Michigan State University Extension. www.canr.msu.edu. [2] Hellevang, K. 2018. NDSU offers soybean drying advice. North Dakota State University Extension. www.ag.ndsu.edu. [3] Hurburgh, C. 2008. Soybean drying and storage. Iowa State University Extension. www.extension.iastate.edu. Web sources verified 10/19/2018.