Tips and Resources for Drying and Storing Grain

As another harvest approaches, it is time to examine your harvest process according to Ken Hellevang, Extension engineer at North Dakota State University. “Create a flow chart showing capacities and times of each system part to aid in doing a harvest efficiency analysis to reduce any bottle necks or restrictions. Examine harvesting rate, transportation time, and conveying and drying rates. On-farm storage and drying may eliminate transportation and harvest inefficiencies. Remember that it takes time to install additional storage or drying capacity.”

Before building grain facilities, consider drainage, access, grain handling options, electrical needs and future growth. Hellevang recommends that producers select a contractor or supplier that provides prompt, reliable service. “Check with others who have used the contractor or supplier. Put all specifications and agreements in writing and have it signed and dated. Include items such as having equipment installed according to manufacturer's specifications, expected equipment performance, completion date, payment procedure and a dispute resolution process.” Detailed plans and specifications reduce the potential for problems, he says.

"Selection of the appropriate drying method depends on grain type, climate during the drying period, drying rate, quantity to dry and energy costs," Hellevang says. “There is no one best method. The advantages and disadvantages of each type must be evaluated in making your selection.” Hellevang recommends considering features such as sensors and electronics that manage the dryer to obtain drying efficiency and maintain grain quality. New column dryers incorporate features such as grain-turners or tapered grain columns to minimize grain damage.

Hellevang says dryeration and in-storage cooling should be considered when selecting a drying system. Dryeration increases drying capacity, since grain cooling and some moisture removal occurs in the dryeration
bin. In addition to working with company representatives for assistance in selecting the most appropriate drying system, he recommends producers consult with university Extension representatives and web sites. He says a good resource on storage and drying systems is the publication *Grain Drying, Handling and Storage Handbook*, MWPS-13.

It is available from MWPS, which is an educational effort of the Land Grant Universities in the North Central Region, with headquarters at Iowa State University. Order this and other books about grain handling from their web site at [http://www.mwpshq.org](http://www.mwpshq.org) or by calling 800-562-3618.

Harvest preparation includes cleaning the bin and servicing the aeration system, Hellevang says. “Every grain storage bin should have an aeration system for cooling the grain to limit the potential for mold growth and insect activity. Allowable storage time approximately doubles for each ten degrees that the grain is cooled below 70 degrees.” *The Dry Grain Aeration Systems Design Handbook*, MWPS-29, is a resource that provides selection and sizing recommendations for the components of an aeration system.

Many universities also have publications and other resources on aeration system design and management. Extensive information on grain drying, handling and storage is available on the Web. Good resources are available at “The Grain Drying, Handling and Storage” site from North Dakota State University, [http://www.ag.ndsu.nodak.edu/abeng/postharvest.htm](http://www.ag.ndsu.nodak.edu/abeng/postharvest.htm) , the Post Harvest Grain Quality & Stored Product Protection Program at Purdue University [http://pasture.ecn.purdue.edu/~grainlab/](http://pasture.ecn.purdue.edu/~grainlab/) ; and the Post Harvest Handling of Crops site at the University of Minnesota, [http://www.bae.umn.edu/extens/postharvest/index.html](http://www.bae.umn.edu/extens/postharvest/index.html) .