

## Storing Corn and Soybeans on Farm

**Storage options should keep the grain dry and provide aeration to control the grain temperature.**

### *Moisture and Temperature are Critical*

Grain quality issues can occur if it is not dried to the proper moisture content before storage. Controlling grain temperature and moisture during storage is critical to maintain quality.

- Corn grain moisture content should be at 15.5% if it is to be marketed immediately. If it is to be stored for several months, it needs to be dried to 12.0%.
- Soybean moisture content should be 13% if it is to be marketed immediately, if it is to be stored for several months, it should be at 11%.
- Aerate to keep the grain within 10 to 15° F of the average outdoor temperature during the fall, 60° F is a good target. Grain should be stored during the winter near 30° F in northern states and 40° F or lower in southern states.
- Aerate stored grain to keep the temperature as cool as possible, preferably 40 to 60 °F. At these temperatures mold and insects are reduced. Fumigate if insect infestations occur.
- Airflow through the grain mass maintains the grain temperature but does not extend the allowable storage time.
- The allowable storage time for grains is listed in Table 1. Allowable storage time is cumulative, so the grain temperature and moisture content during the fall have a huge impact on storability next spring.
  - ⇒ For example, if 16% moisture soybeans are stored for 35 days at 50° F, half of the storage time has been used, so if the soybeans are then cooled to 40° F, the allowable storage time at 40° F is only 70 days, rather than the 140 days.
  - ⇒ For example, if corn is at 14% moisture and 60° F for November and December, then cooled to 40° F from January to April and then at 70° F from May through August, about 90% of the storage life has been used. If it is to be

**Table 1. Minimum Airflow Rates for Drying Corn and Soybeans<sup>1</sup>**

Moisture Content %	Minimum airflow rate (cubic feet per minute/bushel)
18 to 20	3.0
15 to 18	2.0
13 to 15	1.0
11 to 13	0.5

**Table 2. Approximate Allowable Storage Time for Grain<sup>2</sup>**

Moisture Content %	Grain Temperature (F)					
	30	40	50	60	70	80
11	300+	300+	300+	300+	200	140
12	300+	300+	300+	240	125	70
13	300+	300+	230	120	70	40
14	300+	280	130	75	45	20
15	300+	200	90	50	30	15
16	300+	140	70	35	20	10
17	300+	90	50	25	14	7
19	190	60	30	15	8	3

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stored for a second year, it should be kept cool and dry and be in excellent condition, with little to no broken or cracked kernels.

## ***Storage Recommendations***

- After the grain is cooled, cover all fans and duct openings to prevent entry of moisture and kept covered in the spring and summer to limit warm air movement. Ventilate the top of the bin to reduce solar heating. Keep the grain cool, if possible, into the early spring and only aerate in early summer if problems develop.
- Monitor stored grain weekly during the fall until grain temperatures have reached winter storage temperatures and every two weeks during the winter months. Measure and record grain temperatures during inspections and look for condensation and insect activity. Use technology and automation when available, but visual inspection and monitoring are critical.
- The dangers of grain handling cannot be stressed heavily enough. **NEVER** enter a bin when grain is flowing and be extremely cautious around all grain handling structures and equipment. Be sure to have safety precautions and emergency plans in place and make them known to all workers and bystanders on the farm.

### **Sources:**

<sup>1</sup>Sadaka, S. On-Farm Soybean Drying and Storage. University of Arkansas Cooperative Extension <https://www.uaex.edu>. <sup>2</sup>Hellevang, K. 2018. Harvesting and Storing Soybeans. North Dakota State University Extension. <https://www.ag.ndsu.edu/cpr/stored-grain/harvesting-and-storing-soybeans-09-13-18> Web sources verified 9/24//2018.

**Individual results may vary**, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.**  
DOC ID 130925060620 09242018 MJW