

Cost of Storing Grain

File A2-33

The availability of storage adds flexibility to a grain marketing program. Storage enables the producer to use marketing tools that capture seasonal price increases and/or narrower basis levels following harvest. Storage facilities may also increase the rate at which harvesting can be completed by decreasing the time spent transporting and unloading grain.

The proper use of storage will increase a producer's income. However, maximum storage income results from selective rather than continuous use of storage facilities.

Storage Costs

The cost components of storing grain versus selling at harvest are:

- Storage facility cost
- Interest on grain inventory
- Extra drying of corn
- Extra corn shrinkage
- Extra handling cost
- Quality deterioration

Storage Facility Cost

If grain can be stored in existing farm storage facilities, the ownership costs (depreciation, return on investment, maintenance, insurance, etc.) of the farm storage facility are not included in the analysis of whether to store grain in a particular year.

These costs are incurred whether grain is stored or sold from the field at harvest. Therefore, they do not affect the annual decision of whether or not to store grain.

However, if grain is stored commercially, the commercial storage charge should be included in the analysis because the charge is incurred only if grain is stored. Storage charges vary among elevators, but usually are a fixed charge for the first few months with an additional charge for each additional month thereafter. Some elevators charge a daily rate.

Interest on Inventory

Some costs of storing grain are hidden. An example is the interest cost of having money tied up in stored grain inventory. If a producer has a loan, the loan can be repaid with the proceeds from the sale of grain. So interest expense is reduced if the grain is sold at harvest. However, if the grain is stored, the loan is not repaid and interest expense continues. So, a cost of storing grain is the additional interest expense incurred.

Even if no money is borrowed, there is an interest cost of storing grain. If the grain is sold, the proceeds can be invested in the business or placed in savings to earn an interest return. If the grain is stored, the amount of interest foregone is a cost of storage.

Extra Drying

The cost of drying corn to a safe storage level is a cost of storing corn. Many producers prefer to dry farm stored corn that they intend to store into the summer to about 13–13.5% moisture. However, No. 2 corn sold at harvest can be 15–15.5% moisture, depending upon elevator policy. The extra drying fuel and power costs required to remove the additional moisture are costs of corn storage.

Extra Shrinkage

Because grain is sold on a weight basis (No. 2 corn weighs 56 lbs.), the removal of additional moisture for farm stored corn also reduces the number of bushels. This reduction in bushels is a cost of storage.

To compute the extra shrinkage for farm stored corn, use a shrink factor of 1.25%. Commercial elevators often use a shrink factor of 1.35–1.4%. The extra shrink cost is calculated by multiplying the extra points of moisture removed times the shrink factor times the current corn price. For example, the cost of removing an additional two points of moisture for farm storage when corn price is \$4.40 is 11 cents ($2 \times 1.25\% \times \$4.40 = 11$ cents).

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Aeration

A charge for the cost of aerating dried grain stored on the farm may be included. It is estimated that aeration costs for managing dry grain in storage (cooling grain into winter and subsequently warming grain in the spring to match outside temperature) will cost from .2–.3 of a cent per bushel under good management. These charges are for keeping already dried grain in condition.

Extra Handling

The cost of moving grain into and out of farm storage is another cost of storage. Costs vary by the type of handling equipment, bin size, and bin shape.

Generally, handling costs are greater for flat storage and smaller bins. The extra handling costs associated with most farm storage facilities range from 2.0-2.5 cents per bushel.

Quality Deterioration

Another cost of farm storage is the possibility of additional grain shrinkage and quality deterioration. Generally, the loss due to shrinkage from moving grain into and out of storage and shrinkage during storage is 0.5–1%. The cost of the shrinkage loss can be computed by multiplying the percentage by the corn selling price.

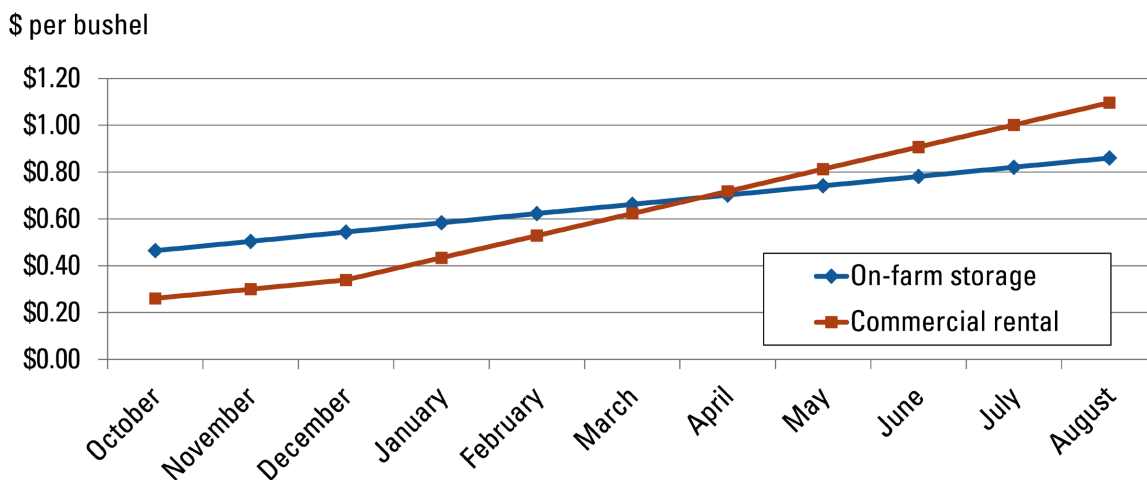
Quality deterioration is quite variable depending on the quality of grain placed in farm storage, quality of the storage facility, and how the stored grain is managed. If the grain is stored commercially, these costs are covered in the elevator storage charge.

Cumulative Costs

Some costs for storing grain are incurred when the grain first goes into storage. Others accumulate over the period during which the grain is stored. Figure 1 shows how the cumulative cost of storing corn can increase from harvest time into summer.

Decision Tool A2-33, [Monthly Cost for Storing Grain](http://www.extension.iastate.edu/agdm/crops/xls/a2-33.xlsx), www.extension.iastate.edu/agdm/crops/xls/a2-33.xlsx, can be used to estimate storage costs for individual situations.

Figure 1. Cumulative storage costs for corn (example)



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