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EC187 How to Reduce Grain Storage Losses

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HOW TO REDUCE GRAIN STORAGE LOSSES



GROW IT RIGHT -- STORE IT RIGHT

To maintain the highest market demand and best farm income for Nebraska grain, grow it right and store it right.

High quality grain depends upon good production and harvesting methods, as well as proper storage conditions:---

- Plant pure seed of adapted varieties
- Control weeds
- Harvest carefully
- Dry damp grain and keep it dry
- Kill stored-grain insects
- Control rodents

UNIVERSITY OF NEBRASKA-LINCOLN

COOPERATIVE EXTENSION
ECONOMICS. UNIVERSITYAND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING,
H. G. GOULD, ASSOCIATE DIRECTOR, LINCOLN.

AND HOME

OF AGRICULTURE,

SOUND PRODUCTION PRACTICES PAY OFF

For the production of sound, mature small grain, suitable for safe storage, the following practices are recommended.

Planting. (1) Plant pure seed. Mixed crops or varieties are not likely to ripen evenly. (2) Use the varieties recommended for your locality. (3) Timely planting is important in obtaining maximum yields of mature grain.

Weed control. (1) Destroy early weed growth by careful seedbed preparation. (2) Plant weed-seed-free grain. (3) Spray weedy grain fields with new chemical weed killer.

Harvesting. (1) When harvesting with a combine, allow the grain to ripen and become as dry as possible in the field. (2) Avoid combining in the morning and evening when grain is moist with dew. (3) Harvest and store weedy grain separately.

Handling. (1) Store damp grain and dry grain separately. A small pocket of damp grain may spread damage throughout the entire bin. (2) Avoid piling grain on the ground. (3) Check the moisture content of grain before storing. Your local grain dealer or P.M.A. office will do this for you. (4) Examine grain often during the storage period.



TOO MUCH GRAIN IS SPOILED IN STORAGE

In recent years Nebraska farmers have experienced heavy losses from bin damage in their stored grain.

Recent inspection of several thousand farm bins of "government loan" wheat revealed that nearly 7% of the grain had "gone out of condition" in storage -- thus substantially reducing its market value.

MOISTURE IS THE NO. 1 CULPRIT



Moist bin damage in grain is the result of too much moisture. Maintaining a moisture content of about 12% will insure safe storage of grain over a long period of time.

Moisture much above 12% generally means "sick wheat", musty odors or mold, insect damage, and low germination.

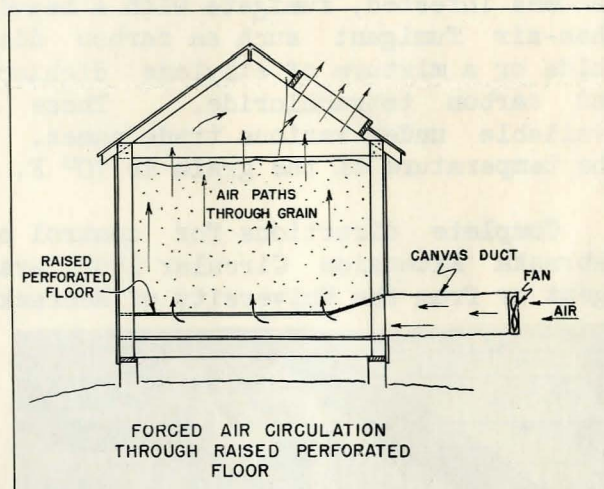
To maintain grain at the low moisture level necessary for prolonged storage, bins with tight sidewalls and good roofs are required.

GRAIN CAN BE DRIED IN THE BIN

If the moisture content of the combined grain exceeds the safe storage level of approximately 12% then bin drying seems to offer a practical method of curing that grain.

At the University of Nebraska grain has been dried--successfully and economically--by forcing unheated air through the bins by means of a power-driven fan.

Bins are prepared for drying grain by installing raised, perforated floors or a special duct system. A new circular describes installation and equipment for bin drying on the farm. This circular may be procured from your county agricultural agent. Ask for your copy of Extension Circular 736, "Grain Drying With Forced Air Circulation".



SHIFTING GRAIN IN THE BIN

GIVES TEMPORARY BENEFIT

"Turning" or shifting grain will give temporary benefit where wet pockets and hot spots are involved. It is doubtful, however, that grain can be dried sufficiently for prolonged storage by this method.

INSECTS MAY TAKE A BIG "CUT"

Insects that attack stored grain take a bigger "cut" out of Nebraska farm income than most insects attacking crops in the field. The present practice of holding grain on the farm for long periods of time has greatly increased the danger of insect invasion.

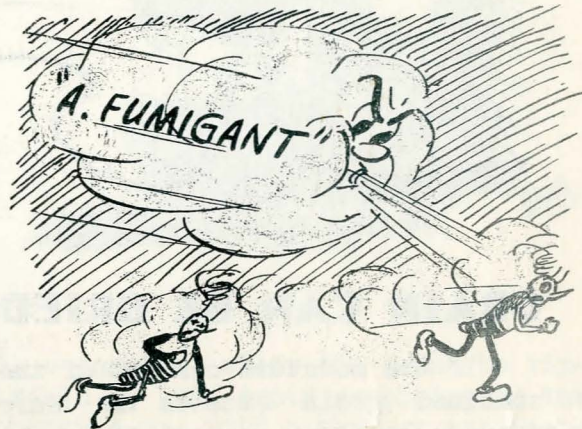
Stored grain insects can be controlled by the following methods:

1. Store only dry, sound grain. Moisture content should not be over 12%. Practically no insect damage occurs when moisture content is 9% or less.

2. Clean granaries and bins thoroughly. All old grain must be removed from the cracks in the floor and sidewalls before the new crop is stored.

3. Spray walls and floors carefully. Insects hide in cracks and crevices. The recommended spray is a 2% or 3% solution, emulsion or suspension of DDT.

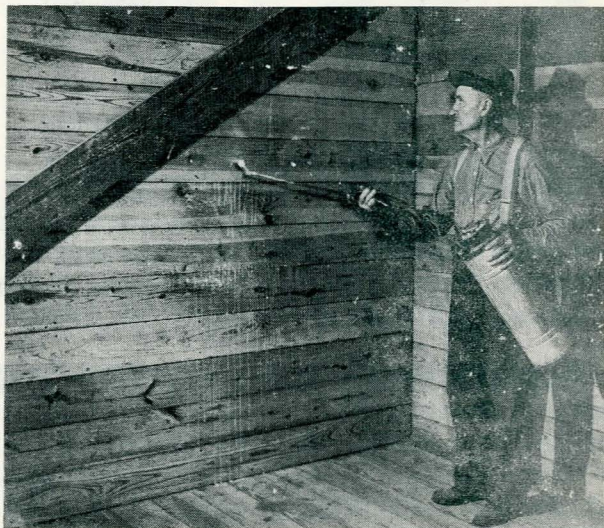
4. Fumigate if necessary. If grain becomes infested, fumigate with a heavier-than-air fumigant such as carbon disulphide or a mixture of ethylene dichloride and carbon tetrachloride. These are available under various trade names. These fumigants give best results when the temperature of the grain is 70° F. or above.



Complete directions for control of stored grain insects are given in Nebraska Extension Circular 1552, available from your county agricultural agent or from the University of Nebraska College of Agriculture.



Clean the Bins



Spray Them Thoroughly