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Is Your Stored Grain Safe?

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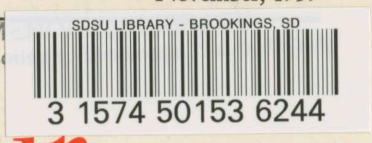

Is Your Stored Grain SAFE?

Grain with More than
14 Percent MOISTURE, or Unprotected
from INSECTS and RODENTS
Is in DANGER!!!

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Dry Grain *Thoroughly* Before Storing in Bin

Grain Must Be Dry

How dry must grain be in order to "keep?" This depends on temperature and length of time it is to be stored. Assuming storage for a three month period:

Grain containing not over 14% moisture—safe under all reasonable temperature conditions.

Grain containing not over 15% moisture—safe if temperatures are not higher than 70°F.

Grain containing not over 16% moisture—safe if temperatures are not higher than 60°F.

In years when corn is cribbed with from 17% to 25% moisture spoilage is averted only by cold winter temperatures. Winter drying of this corn may reduce the moisture sufficiently so that when warm weather comes in spring the corn is safe. However, if corn should not have dried out sufficiently, spoilage may occur at about corn planting time. Corn that was cribbed dry in the fall does not spoil in the spring if properly protected from direct contact with water.

Natural respiration in grain may, under warm temperatures, have an effect on storage. In sacks or small bins, there is generally enough aeration to carry away the slight amount of water that is constantly being produced. In deep tight bins the part below 8 feet, oxygen is soon exhausted and respiration stops before there is any increase in moisture. In the top 6 feet or 8 feet musty grain may develop in warm weather if grain is not disturbed.

Therefore, moisture is the important factor in "keeping" grain. 14% is the important figure to remember.

The Danger Line Is 14 Percent

Moisture	
14%	At 14% moisture, grain is safe from spoilage under all reasonable temperature conditions. *Except flax, which must not have more than 11%.*
15%	Safe only if temperatures are not higher than 70°F.
16%	Safe only if temperatures are not higher than 60°F.
17%	When corn is cribbed with 17% to 25% moisture spoilage is averted only by cold winter temperatures.

Once cleaned grain is dried to 14%, when properly protected from direct contact with water, it does not gain enough moisture through air humidity to cause damage. Such grain is safe for a long time, except for insects.

Insects May Cause Heating

Heating of grain is caused by excessive moisture. However, heating may also be due to insects breeding in the grain. When excessive moisture is due to the presence of insects, fumigation will stop the heating process; but if moisture is excessive at the time of storage, fumigation will not prevent nor stop heating.

Stop Those Weevils

The best measures for controlling stored grain insects and preventing damage are cleanliness and fumigation. Most insect damage is caused by placing grain and corn in bins or cribs that are not cleaned up. These storage spaces should be thoroughly cleaned and treated so that new grain will not be infested from insects hiding in cracks, crevices, old sacks, floors, bin sides and other hold-over spots. After removing all grain, etc., spray floors, bin sides, etc., with a deodorized kerosene pyrethrum fly spray. After drying, dust those places with ordinary lime.

Fumigate When Infested

Once the grain in storage has become infested with insects, fumigation is the only practical method of stopping damage. Corn cribs cannot be fumigated since the bin or storage room must be air tight. It is, therefore, necessary to transfer weevily corn to air-tight bins or galvanized tanks for fumigation. Before fumigated grains and corn are returned to original storage room, clean and spray thoroughly.

To Prevent Insects *Clean and Treat* Grain Bins Thoroughly

Here Are Ways to Protect Your Grain

Fumigate with Carbon Bisulfide

1. Use airtight bins.
2. Use Carbon Bisulfide at rate of one pound to each 100 cubic feet of space or one to three gallons per 1,000 bushels of grain.
3. Fumigations at grain temperatures below 60°F. are not highly effective.
4. Carbon bisulfide is highly inflammable, and when mixed with air, explosive. DO NOT SMOKE, LIGHT MATCHES, ETC.,—even a spark from striking a nail may cause an explosion.
5. Carbon bisulfide boils at 115°F., therefore, should not be applied to grain that has heated over 100°F.
6. Apply carbon bisulfide directly to grain or spread burlap sacks on grain and pour liquid on them. Gas which is produced is heavier than air and sinks into the grain. Spread tarp or sacks over fumigated grain.
7. Expose grain to fumes up to 36 hours.
8. If grain is over five feet deep increase dosage by one-half.
9. Grain can be aerated by transfer to other storage places.
10. Carbon bisulfide is poisonous to humans if carelessly handled. Observe all precautions.

Keep Out Rats and Mice

1. Rat-proof your granaries and cribs.
2. Poison rats and mice with one ounce of powdered red squill to one pound either of fish or ground hamburger, or use oatmeal squill bait prepared by the Biological Survey.
3. Gas rats by fumigating burrows or beneath tight floors or center of large filled cribs with calcium cyanide dust. Use dusting pump with flexible hose. Cyanide is deadly poison to human beings. BE CAREFUL IN HANDLING AND STORING.
4. Gas from car or truck exhausts may be used in burrows or beneath tight floors. Adjust carburetor for rich mixture. Introduce gas through hose.
5. Avoid rat viruses as they are too uncertain in efficiency.
6. Cut off rats' food supply. Food shortage limits number of rats, renders poisoning more effective.
7. Rat control is a community enterprise—Cooperate!

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