

A Look Ahead

The Weather and the 1944 Grain Crop and How it May Affect the 1945 Grain Crop.

By H. L. WALSTER, Director

THE 1944 crop season has given us the kind of weather which produces a "bumper" crop but unfortunately in considerable parts of the State the harvest for getting in and storing that crop has been one of the worst on record. The September 1st crop report of the Bureau of Agricultural Economics, Office of the Agricultural Statistician, announced on September 13, 1944, a decrease of 13,638,000 bushels in the prospective production of all North Dakota spring wheat and of 2,679,000 bushels of barley below that predicted on August 1, 1944. Although not all of this decrease can be charged to wet weather, most of it is associated with wet weather. These figures do not take into account what has happened to the grain. The wet weather affects the test weight of the grain, even standing grain has had its test weight lowered and grain laid in the swath is equally affected. Grain which has been subjected to wet weather tends to shatter and sprout. Shattering causes actual loss of kernels and sprouting lowers the milling and baking value and hence lowers the grade of grain to be marketed.

Constant wet weather and a damp fall provides ideal conditions for molds and bacteria to grow upon the grain. As a result of this contamination of the surface of kernels with molds and fungi, not all the consequences of this unfavorable harvest season will show up this fall, some of it will show up when we put the seed into the ground next year because the seed will be contaminated with organisms which may cause rotting of the seed, blight of the seedlings, etc.

The purpose of this note is to call attention to some of the consequences which lie ahead. In short, this is a series of warnings.

Warning No. 1.

High moisture grain spoils rapidly in the bin. Watch your grain bins. Make every possible effort to turn the grain or shift from bin to bin. If the bin is not provided with ventilation, provide it with some ventilation.

Warning No. 2.

If you have damaged grain, grain containing sprout damage, both you and the buyer are equally interested in a fair appraisal and a test of the extent of damage. The percent of sprout damage can only be determined by actual count of kernels which are damaged. Some kernels only very slightly sprouted, will have had their value lowered by

the sprouting. Watch the grading of this grain as it is marketed, be sure a truly representative sample is taken for testing.

Warning No. 3.

Look out for low germination next spring. Test all grain for germination before seeding. There will be plenty of good germinating seed next spring, but some will not be good especially in some parts of the State. You may put high moisture grain into a bin, the seeds may be all alive when put into the bin, but if the moisture content is so high that heating takes place, the germs can all be killed by the heating. If your grain is dirty, contains weeds and trash and other material which

heats, the heating of the non-grain material will provide favorable conditions for the growth of molds and other damaging micro-organisms which injure the grain.

Grain may be damaged for seed probably long before it reaches the bin. This will be especially true of grain threshed from the swath or shock where sprouting has taken place. Such grains may be sprouted before it gets to the bin and hence will not show a normal germination percentage.

We are not likely to see a lot of dark red kernels this year. Many kernels of grain have been bleached or discolored. That damage which may be slight in character may not have any real effect upon the germination, but organisms causing blights and rots may be coating the kernel and yet you can't see them at all.

Warning No. 4

Treat all grain next spring for control of diseases carried on the seed. A lot of the blights and rots as well as the smuts are carried on the dry seed. North Dakota Agricultural Experiment Station Circular 69 describes suitable seed treatments for wheat, oats, barley, flax, emmer, and millet. Seed treatment

will not eliminate all blights and rots from next year's crop because the soil may be infected. Seed treatment does insure a better start for the seedling.

Warning No. 5.

Because of the extensive wet fall one may hesitate to try to plow heavy clay soils and may be tempted to wait for spring plowing. Even though the fall plowing may leave some of the soil in bad physical condition, the freezing and thawing which takes place in the spring will provide a better condition than will working down a spring plowing of heavy clay soil.

Warning No. 6.

Wet weather means weeds, all kinds of weeds, old enemies like perennial sow thistle and Canada thistle will appear in larger numbers than they have in the dry years. With the shortage of labor, plants have been allowed to go to seed when they might have been mowed had labor been available. Weeds have stolen a march on us during the war and we are going to have to bring up reinforcements promptly to tackle these weeds. Some of the land needs a rest and while it is resting it is a good time to kill weeds.

Flax, Wheat and Chromosomes

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WITH the invention of the compound microscope man found a new world, a world of the very small. This new world does not get simpler as it gets smaller—perhaps the contrary. Both plants and animals are found to be composed of cells. The average human being is said to be made up of something like 1000 billion cells. Each cell is so complicated scientists have yet only a meager knowledge of its structure. An interesting set of gadgets practically always present in each young cell are the chromosomes or colorbodies, which are of the highest importance in the life history of the plant or animal for they bear the heritage of the race. Each chromosome in a cell has its mate with which it pairs each time the cell divides. At the time of reproduction of the plant or animal the number of chromosomes is halved in each sex cell so then it has half the normal complement. Then when the male cell unites with the female egg cell the fertilized egg regains the normal number of chromosomes and proceeds to develop a new organism generally much like the parent average. Changes within the chromosomes and changes of the chromosomes themselves furnish the