

# North Dakota Leads in Barley Production

By  
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**N**orth Dakota ranks first among the states in production of barley. During the last 4 years the production of this crop in North Dakota has ranged from about 54 to 67 million bushels, averaging about 60 million bushels. This represents about one-fifth of the U. S. crop and about one-third of the barley produced in the 12 north central states.

Unfavorable conditions for barley in some of the other states in this area, resulting from an increase in those diseases to which barley is susceptible, has led to a sharp decline in the barley acreage and production in those states. These disease conditions have not been so severe in North Dakota and with moisture and temperature conditions generally favorable, both our barley acreage and production have tended upward. The North Dakota barley grower has, therefore, been in a splendid position to take advantage of the larger market demand which has existed for barley and especially for barley regarded as most suitable for malting.

The trends in barley acreages for the principal barley growing states in this area are shown in Figure 1. The trends in production are shown in Figure 2. These data show that when the average production for 1942 to 1945 is compared with the average 10-year production, 1932 to 1941, only North Dakota and South Dakota have shown an increase, while the decrease in production in each of the other states has been very substantial.

Of the approximate average 60 million bushels of barley produced in North Dakota in recent years, more than 50 percent has been sold off the farm (Fig. 3). Barley thus has for many farmers been a substantial cash as well as a feed crop. While there is a considerable market outlet for barley as a feed, the larger

market for barley is for malting purposes. In recent years this has approximated 100 million bushels annually, some of this because of the larger need for industrial alcohol in the war program. The annual consumption of barley for malting purposes before 1941 approximated 65 million bushels.

## Malting varieties

Barley varieties which are in most demand for malting purposes are Wis. 38, "L" (Kindred), Manchuria and O.A.C. 21 (also called Arctic). Wis. 38 has preference for the production of brewers' malt while the others are preferred for the production of distillers' malt, but may also be used for brewing purposes. The largest industrial outlet is for brewers' malt.

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## BARLEY ACREAGE TRENDS SIX NORTH CENTRAL STATES 1932-1945

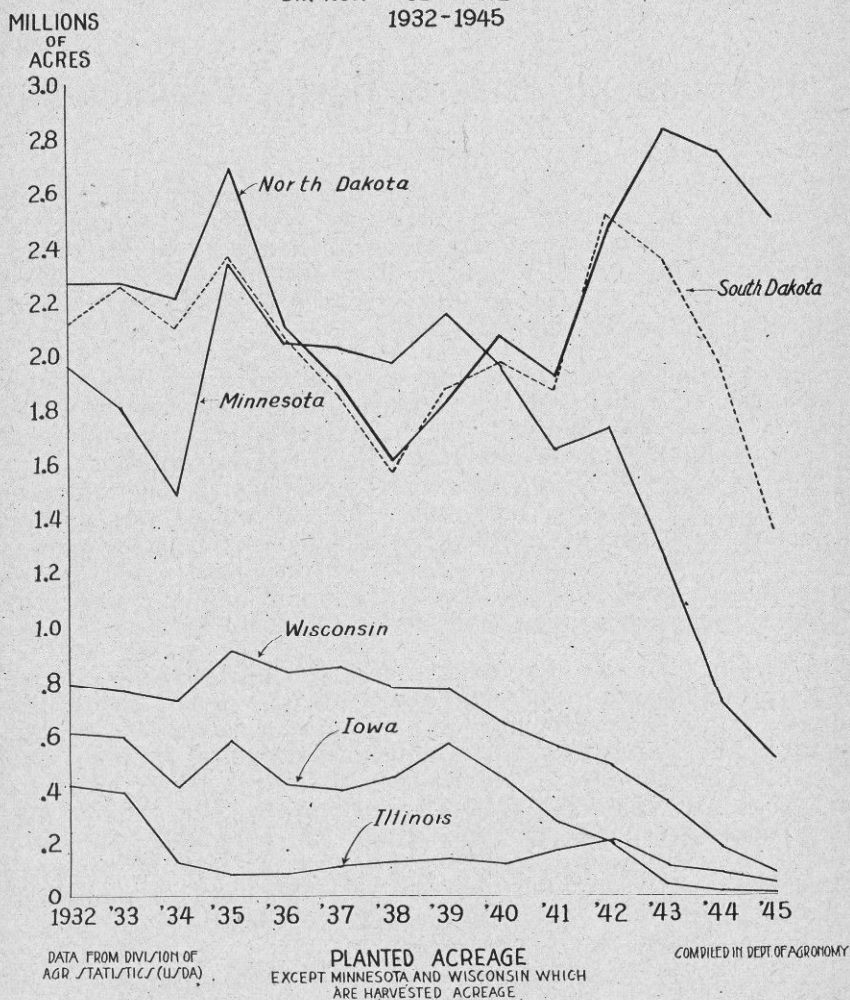


Fig. 1—Recent trends in the acreage sown to barley in six north central barley growing states, 1932 to 1945.

Wis. 38 when not injured by disease, as it was in some sections of the State in 1943 and 1944, is the highest yielding of the malting varieties. An unfavorable characteristic of Wis. 38 is a long weak neck that breaks readily when ripe, sometimes resulting in considerable loss of heads, if the crop can not be har-

vested promptly. The "L" barley, like other Manchurian types of barley, has fair tolerance to diseases, thus would be more dependable in years and under conditions when such diseases are common. "L" barley also has some resistance to stem rust. Rough awns and a weak straw are the most serious disadvant-

ages for this variety. Manchuria, and more especially O.A.C. 21, have a bluish aleurone kernel and in grading are less likely to be classed as mellow and grade malting than varieties which do not have this bluish color.

To malt well a variety of suitable malting quality should be uniform, plump, well filled, starchy, not damaged in threshing, free from admixtures, and especially admixtures of Trebi and two-row barleys. Barley of high malting quality is most likely to be obtained in a season when there is a favorable moisture supply throughout the growing season and the ripening temperatures are moderate.

**The grower who intends to sell barley for malting purposes**

should have in mind the kind and quality of barley preferred on the market and strive to produce and deliver such quality grain. Because of the shortage of malting barley and the increasing demand for such barley, North Dakota growers have in recent years enjoyed a much larger outlet for their barley than usual. We may be able to retain a large portion of that market in the coming years if care is used in the choice of varieties grown for sale, and proper effort is made to market a crop generally free from undesirable admixtures and otherwise of high quality.

**Feed barleys**

Differences in the feeding qualities of the several varieties

MILLIONS OF BUSHELS

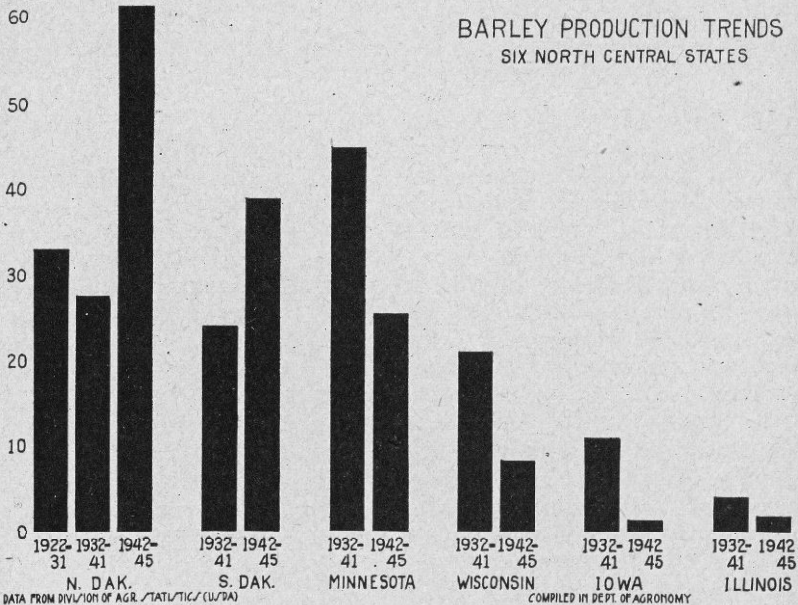


Fig. 2—Comparing the average production and the recent trends in production of barley in six of the states in this area usually producing most of the barley sold for malting purposes. With the exception of North Dakota and South Dakota there has been a distinct decline in production.

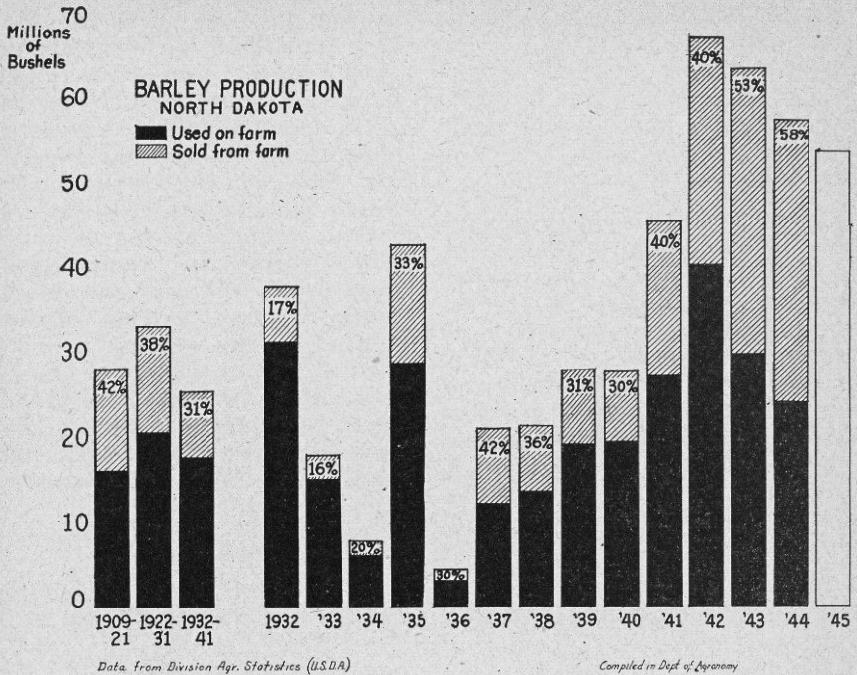


Fig. 3—A large acreage and favorable conditions for high yields has resulted in a large total production of barley in North Dakota. A short crop in some of the other states, and an increasing industrial demand for barley, has resulted in an increasingly large market for North Dakota barley.

grown apparently are not significant. Some of the "feed" barleys now available, however, appear to yield better than those which class as "malting" varieties. Tregal and Trebi have rather consistently been higher in yield than the other varieties and therefore deserve a large consideration where the barley is grown mainly to be fed on the farm. Tregal has the smooth or semi-smooth awn character and a smaller kernel as distinct from the coarse rough awn and large hard kernel so characteristic of Trebi. Both these varieties appear to yield well under a fairly wide range of seasonal conditions. They have a rather short straw, and carry the head more erect than most of the barleys.

Plush has a good strong straw and stands up well, but does not yield consistently. Spartan is a two-row, smooth awn, early variety, suited for areas where earliness and strength of straw is especially desired. Under reasonably favorable conditions for barley Spartan usually does not yield up with other varieties. In our trials to date Mars has not been outstanding in yield. Its advantages for this area appear mainly in strength of straw, fairly early maturity with some resistance to stem rust.

Barley will do best in a relatively cool season and in years when there is a favorable distribution of summer rainfall. Select a soil that retains moisture



well; a soil that is fertile so that the plants are well nourished, and practice early sowing so that the crop can develop and approach maturity before the high-

er summer temperatures or late drouth may occur. These are factors which together with the use of a good variety will assure the most satisfactory yield.

## Blights Affect Barley Production

By  
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North Dakota has taken a leading place in the production of barley in the United States. This favored position which our state now enjoys was obtained because of a combination of circumstances affecting not only the market but also the production of barley in other regions. A number of important diseases have increased in the barley growing regions and have reduced profitable returns to such a marked degree as to affect materially the desire on the part of growers to produce barley. Barley blights have attracted considerable attention in other states and these same diseases may become destructive in our own State. There are several different types of blight which affect the yield and market quality of barley. They have three avenues of approach to the growing plant, (1) through the seed, (2) through the soil from soil infestations and (3) through air currents which bring in the infecting germs from a more or less distant source. This report is largely concerned with the blights which originate from the seed but deals to some extent with blight originating from the soil.

Blight generally is considered to be some disease of the seed which causes a measure of shriveling and impairment of germination, accompanied by a reduction in the quality and value of barley on the market. However, blighted seed is not always unfit for sowing, depending upon which blight is present. A very common blight in barley is caused by the fungus *Alternaria*. This disease often does not shrivel the seed and apparently has no effect upon the germination. Buyers are unable to distinguish with certainty one blight from another without first making a laboratory test, requiring several days. Time will not permit this delay. Feeders of live stock know that scabbed barley is poi-

sonous to some animals especially hogs and, as a safety measure, they will disqualify all blighted grain. The maltster cannot use blighted grain and since the feeder and the maltster are the principal purchasers of barley all blighted grain, regardless of the type, may be sold only at a discounted price.

The importance of high quality seed as a factor in barley production has been demonstrated. Also the value of seed disinfectants for seed of lower quality has been proven by experiments begun in 1944. A lot of rather light Wisconsin 38 barley was separated into three grades by the use of a grading machine; namely, a heavy grade weighing

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