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EC55-102 Fall-Sown Small Grain Varieties for Nebraska, 1955

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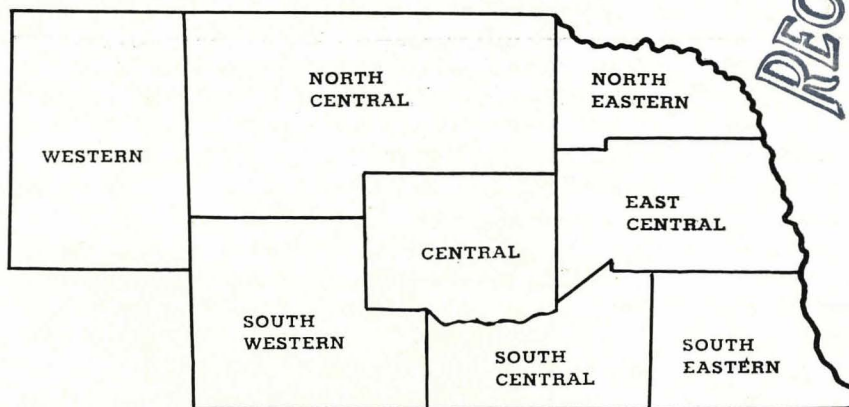
August 1955

E. C. 55-102

Fall-Sown Small Grain Varieties for Nebraska, 1955

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Nebraska Crop Testing Districts



Recommended Varieties for Planting in 1955

West	Southwest	South-central	Southeast	East-central	Northeast	North-central	Central
WINTER WHEAT							
Cheyenne Nebred	Cheyenne *Comanche Nebred Pawnee	Cheyenne *Comanche Nebred Pawnee	Nebred Pawnee Ponca	Nebred Pawnee	Nebred	Cheyenne Nebred	Cheyenne Nebred
WINTER BARLEY							
Production not recommended	Dicktoo Kearney (if winter barley is to be planted)	Dicktoo Kearney	Dicktoo Kearney	Production not recommended	Production not recommended	Production not recommended	Production not recommended
WINTER RYE							
Balbo Pierre	Balbo Pierre	Balbo Pierre	Balbo Pierre	Balbo Pierre	Balbo Pierre	Balbo Pierre	Balbo Pierre

* Southern two tiers of counties.

Extension Service
University of Nebraska College of Agriculture
and U. S. Department of Agriculture
Cooperating
W. V. Lambert, Director

Fall-Sown Small Grain Varieties for Nebraska, 1955

by J. C. Swinbank and
Virgil A. Johnson

Winter Wheat

Selecting the right variety of grain for your locality is an essential part of efficient crop production. This is especially true if you are a wheat farmer, because you must consider not only the performance of the crop on your farm, but also whether the wheat is the right quality to meet the needs of the milling and baking trades.

The map below shows which varieties are considered the "best bets" for each of Nebraska's wheat growing regions in 1955. Advantages and disadvantages of the recommended varieties—and of several other common varieties—are discussed on the following pages. Objectionable varieties are also listed.

Most Nebraska wheat is sold "at the market" and is processed by mills. Nearly 80 per cent of the wheat milled goes into the production of baker's flour—flour that must meet the rigid specifications of today's mechanized assembly line production of bread.

Baker's flour is not made from any one variety of wheat from any one locality. Rather it is made by blending wheats of varying characteristics in order to produce a flour that is just right for the baker. Milling and baking characteristics differ with different varieties of wheat.

Most wheat varieties grown in the hard winter wheat region have mel-

low or medium-strength gluten. Hence, there is an abundance of this type of wheat. Flour mills cannot produce baker's flour from medium-strength wheats alone. The strong-gluten wheats, sometimes called booster wheats, must be blended with the more plentiful mellow-gluten wheat in order to produce a flour with enough mixing tolerance to be used in modern mechanical dough-mixing equipment. There is now an acute shortage of these booster wheats.

West in Strong Position

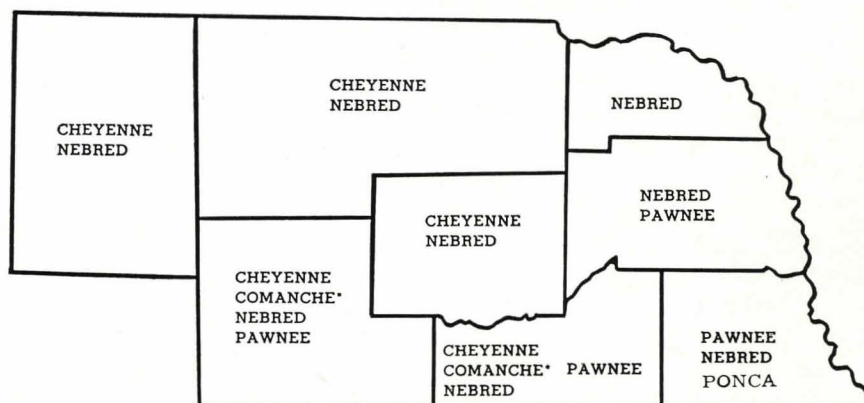
The western third of Nebraska is the only sizable area in the hard red winter wheat region where varieties with strong-gluten qualities are produced almost exclusively. This has resulted in excellent demand and the payment of substantial premiums for strong-gluten wheat—especially that of higher protein content.

If the acreage planted to mellow-gluten varieties should increase in

western Nebraska, the premiums that have been paid in this area during the past three years would be threatened. The premiums might disappear entirely if buyers could not depend on getting strong-gluten wheat from country elevators in the premium area.

Some of the varieties included in the mellow-gluten category are Pawnee, Sioux, Wichita, and Early Colorado. For all practical purposes, Early Colorado is identical to Wichita. Included in the list of strong-gluten varieties are Nebred, Cheyenne, and Comanche.

Nebred can be grown throughout the state. Cheyenne is best suited to the central, southwestern and western cropping districts while Comanche, because it lacks winter hardiness, should be limited to the southern two tiers of counties. Pawnee, while not a strong-gluten variety, is considered the best bet for southeastern Nebraska because of its hessian fly resistance, moderate resistance to leaf rust, and high yielding



* Southern two tiers of counties.

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Best wheat varieties for Nebraska in 1955.



Wheat breeders continually seek better varieties for the state. Here Dr. Virgil Johnson transfers pollen from one promising strain to another.

ability. Farmers in the western third of the state will profit by maintaining their high acreage of Nebred and Cheyenne.

Demand for Other Types

With the emphasis on strong-gluten wheat from the western third of the state, farmers in central and eastern Nebraska may wonder if there is no demand for their wheat. There is a definite demand for good wheat from these two regions as it serves a useful purpose in mill blends and the production of family-type flour. Since there is a relatively plentiful supply of this type of wheat, it has not commanded premiums such as those paid for strong-gluten wheat from western Nebraska.

Improving the over-all quality of central and eastern Nebraska wheat will help create a more favorable market for it. Quality can be improved by eliminating rye mixtures, by taking more care in harvesting and storing the crop, and by planting only recommended varieties.

Recommended Varieties

The varieties described here have good, long-time performance records in Experiment Station tests and on Nebraska farms. They are recommended for planting in Nebraska in 1955.

☆ ☆ ☆

Cheyenne is the product of a selection from Crimean wheat, made at the Nebraska Experiment Station in 1922. It has stiff straw and short erect heads, which makes it a good variety for combining. This variety is somewhat tolerant of hessian fly and does not shatter easily but is susceptible to bunt, leaf rust, and stem rust. Cheyenne is slightly more winter hardy than Turkey and is recommended in the western, south-western, central, north-central and south-central cropping districts of the state.

At the North Platte and Box Butte Experiment Stations, as well as in western outstate field tests, it has been the highest yielding variety for many years.

Cheyenne produces a very strong gluten flour that requires long dough mixing time. It is of special value for strengthening mill blends in the production of bakery flour.

☆ ☆ ☆

Nebred was selected from a strain of Turkey wheat at the Nebraska Experiment Station. Plants of Nebred differ from those of Turkey in being slightly earlier, shorter, and stronger. The variety is resistant to all races of bunt known in Nebraska and is less susceptible to stem rust than Turkey or Cheyenne. It is two or three days earlier in maturing than Cheyenne, is equally winter hardy and is resistant to shattering. Nebred yields about as well as Cheyenne in most parts of the state, but not quite as well as Pawnee in southeastern Nebraska. The variety is recommended for the entire state.

Nebred ranks high in milling and baking characteristics. It has moderately long mixing time, good dough

handling properties, and serves as an excellent wheat for blending with weaker type varieties.

☆ ☆ ☆

Pawnee resulted from a Kawvale x Tenmarq cross and was developed cooperatively by the Nebraska and Kansas Experiment Stations and the U.S.D.A. The variety was first released in Nebraska in 1943 and is now grown on a third of the state's hard red winter wheat acreage.

This variety has a short, stiff straw and is resistant to loose smut, and moderately resistant to bunt and hessian fly. It has a tendency to shatter when ripe. Pawnee is early in maturing (nearly a week earlier than Cheyenne) and less winter hardy than Turkey, Nebred, or Cheyenne. Its hessian fly resistance and high yielding ability have made it the best producing wheat available for southeastern Nebraska.

Pawnee does not possess the dough stability and mixing tolerance of Nebred and Cheyenne. Because of its mellow gluten, it is an excellent variety for family-type flour and for mellowing strong-gluten varieties.

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Comanche was developed from a cross of Oro and Tenmarq in experiments by the Kansas Experiment Station and the U.S.D.A.

It has high resistance to many important races of bunt, some resistance to leaf rust, and is not seriously injured by most races of stem rust. The variety is susceptible to loose smut and hessian fly. It ripens about the same time as Pawnee and is not so likely to shatter. Comanche has yielded as well or better than Turkey, but on the average not quite as high as Nebred, Cheyenne, or Pawnee. In Nebraska it is a recommended variety for the southern two tiers of counties.

Comanche has excellent milling and baking characteristics, and can be used to strengthen mill blends containing wheats of lesser strength.

Ponca resembles Pawnee in yield of grain, weight per bushel, time of maturity, strength of straw, plant height and resistance to loose smut. It is superior to Pawnee in leaf rust resistance, hessian fly resistance, and dough handling characteristics, and does not shatter so easily. It is less winter hardy and is more susceptible to bunt. It has recently been named a recommended variety for southeastern Nebraska.

Other Varieties

Turkey is more a type than a variety. Samples called Turkey, collected from different parts of the country, have differed widely in growth characteristics when compared in adjacent plots. Most Turkey wheats are winter hardy, a little late in maturing, have weak straw, and are susceptible to leaf rust, stem rust, smuts, and hessian fly. The milling and baking characteristics of Turkey are completely acceptable to the trade. Once the most widely grown of all hard red winter wheats, Turkey's popularity has declined in recent years because Nebred, Cheyenne, and Pawnee have yielded higher in their respective areas of adaptation.

Sioux, a cross of Cheyenne x Turkey, is a winter-hardy Turkey type of about the same maturity time as its parents. Although its field performance is comparable to that of Nebred and Cheyenne, its flour has a mellow gluten with medium to short mixing tolerance. Since production of mellow gluten varieties in western Nebraska would threaten the premium price structure for strong-gluten wheats, the variety is not recommended for planting in 1955.

Wichita, Kiowa, and Triumph originated in states south of Nebraska. All three are early maturing, mellow-gluten wheats which lack the winter hardiness and yield-

ing ability to compete with Nebred, Cheyenne, or Pawnee. Flour from Wichita, Kiowa, and Triumph is suitable for family use but not strong enough for the bakery trade. These varieties, like Sioux, are not recommended for planting in 1955.

Objectionable Varieties

Occasional fields of varieties other than those discussed here can be found in several areas of Nebraska. Such varieties fall into one or both of two categories: (1) varieties having inferior quality, and (2) unadapted and consequently low yielding varieties. Red Chief, Blue Jacket, Chiefkan, and KanKing belong in the first group while Yogo and Iowin are representative of the second. Soft red winter wheats lack both quality and adaptation. Continued use of these varieties constitutes a threat to the current excellent market acceptance of Nebraska wheat and their production should be discouraged.

Winter Barley

Nebraska farmers have been growing winter barley for several years but the varieties available have lacked the winter hardiness needed in this state. Research workers at the Nebraska Experiment Station cooperating with the U. S. D. A. have been searching for more hardy types. Out of these investigations have come new varieties called Kearney and Dicktoo. These varieties have about the same winter hardiness as the less hardy winter wheats. Hence, their production should be confined to the southern third of the state.

Winter barley is adapted to planting on summer fallow with resulting high yields not normally obtained by spring varieties. Barley is sometimes planted for fall

and winter pasture and experiments from several states show that it makes more pasture than wheat.

If winter barley is to be planted, **Kearney** and **Dicktoo** are the most winter hardy varieties available. These two varieties are very similar in their characteristics. They are moderately early, six-rowed, hulled and have rough beards. Under certain conditions they may lodge and in order to avoid possible losses from lodging they should be harvested promptly when ripe.

Winter Rye

Pierre rye originated at the South Dakota Experiment Station and is a composite of 16 inbred Dakold and Swedish lines. It is superior to most other varieties in winter hardiness and has equaled or excelled other varieties in yield of grain both in South Dakota and northern Nebraska. This variety also excels in test weight, usually showing an advantage of 1 to 2 pounds per bushel over most other common varieties. It is recommended where rye is grown, primarily in the northern two-thirds of the state.

Balbo was distributed by the Tennessee Agricultural Experiment Station in about 1933, having been received from Italy in 1919. The variety has an erect habit of growth and is highly resistant to hessian fly. It is very early and can be pastured earlier in the fall and spring than other varieties. Claims that it excels in pasture yields have not been substantiated by tests.

Balbo is about as winter hardy as adapted varieties of winter wheat, which means that it is less hardy than most varieties of rye. It is recommended primarily for grazing and is best adapted in southeastern Nebraska. In grain yields it is usually excelled by Pierre.