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P. B. Price

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# PRIMUS II Barley

Agronomy Department  
Agricultural Experiment Station  
South Dakota State University, Brookings  
in cooperation with U. S. Department of Agriculture

# Primus II Barley

By PHIL B. PRICE<sup>1</sup>

Primus II (pronounced PRY-mus two), a selection from the variety Primus, was developed by the South Dakota Agricultural Experiment Station and the Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture and given final release in December 1968. The original Primus has performed well in commercial production under dryland cultivation in South Dakota, Minnesota and North Dakota during the 1967 and 1968 crop years and limited irrigated cultivation in South Dakota in 1968. Primus II is being released because of its better uniformity in certain agronomic characters and slight superiority in grain quality. It appears to be identical with Primus in yielding ability and disease reaction. Registered and Certified seed increase during the 1969 crop year will be made by South Dakota Crop Improvement Associations from approximately 4,500 bushels of seed released by the Foundation Seed Stocks Division, South Dakota State University. Minnesota and North Dakota have supplies of Primus II for simultaneous release.

## History

Primus II (C.I.13796) was developed from bulked head selections of Primus which were made in 1965 by Phil B. Price. This variety combines into one plant type the best

features of three parents (Brandon 3902, Liberty, Swan), which contributed to the earliness, general adaptability, yielding ability, high bushel weight, and desirable quality features of this release.

## Characteristics

Primus II is an early-maturing, modified Manchurian spring type six-row barley. The spikes are long, lax, smooth-awned, and emerge well from the boot. The kernels are strongly attached, heads do not shatter readily at maturity and neck breakage is minimal. The medium-size plump kernels have tightly adhering hulls, colorless aleurone and thresh free of awns. Primus possesses outstanding heat tolerance and drought resistance, and these features, coupled with its earliness, make it a very suitable variety for South Dakota and the Upper Midwest.

## Disease Reactions

This new variety is resistant to prevalent races of stem rust. It is susceptible to common foliar diseases and head blights. Resistance to these diseases would be desirable, but they are not frequently serious enough to make a high degree of resistance necessary when grown in the Upper Midwest.

<sup>1</sup>Agronomist, Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, at South Dakota Agricultural Experiment Station, Brookings.

### Yield and Test Weight

The variety Primus has made an outstanding record in its 2 years of commercial production. Its yielding ability, standability, bushel weight and high percent plump kernels have given it wide acceptance by growers. Primus II is equal in all respects to Primus and has a slight superiority in grain quality. Table I indicates the superior performance of Primus II under South Dakota conditions when compared with three standard malting varieties, Conquest, Dickson, and Larker.

### Malting Quality

Good grain quality and acceptable biochemical characteristics are necessary features of the seed produced by any new variety in order that it may be acceptable for both feeding and malting purposes.

Primus II is being released as a feed variety. Small scale tests of Primus have indicated it has good malting features. Large scale plant tests of Primus are being conducted on the 1968 crop by the malting and brewing industry. A final decision as to the acceptability of Primus and Primus II will be made in 1969.

Table 1. Summary of Yield and Test Weight—19 Station Years\*

Variety	Average Yield bu./acre	Average Test Weight lbs./bushel
Primus II .....	59.9	48.0
Larker .....	53.5	48.0
Conquest .....	53.4	46.1
Dickson .....	52.4	46.6

\*A station year is a test at one station, one growing season.