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BULK THIRD-CLASS

ficial to winter survival because of trapped snow plus a very firm seedbed (3). Seeding into flax or soybean stubble is preferred because of little residue. Seeding into wheat or barley stubble may result in yield losses from leaf-spotting diseases. No seedbed preparation is necessary unless the field is excessively weedy. Seeding should not be done on fall plowing.

Other cultural practices that pertain to all production areas include seeding date - September 1 to 15, or slightly later in southern areas; seeding rate - 45 to 60 pounds of seed per acre; adequate phosphate fertilizer applied at seeding time; and fertilizer application based on soil test recommendations.

#### Summary

Survival information on winter wheat varieties at several locations in North Dakota over a three-year period is presented. The varieties are grouped into three categories of high, intermediate and low winterhardiness based on their survival in these trials. Froid, Minter and Sundance had the best survival. The distribution of present

and potential winter wheat production with reference to climate is discussed. An expanded winter wheat acreage is possible if winterhardy varieties and good cultural practices are used. Winter wheat that survives satisfactorily usually produces higher yield than spring wheat. The state is subdivided into areas with different requirements for varietal winterhardiness and cultural practices recommended for winter wheat production. Firm seedbed preparation, use of a hoe drill, stubble seeding, proper seeding date and rate and adequate phosphate fertilization are helpful to winter wheat survival in North Dakota.

#### References

1. Dodds, D. L. 1972. **Wind erosion control on summer-fallow - continuous cropland.** Circular SC-572. Cooperative Extension Service. North Dakota State University, Fargo, North Dakota.
2. Jensen, R. E. 1972. **Climate of North Dakota.** North Dakota State University, Fargo, North Dakota.
3. North Dakota Agricultural Experiment Station. 1969. **Hard Red Winter Wheat in North Dakota.** North Dakota Agr. Exp. Sta. Bull. 478.

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