Field Peas Tested at North Central Station, Minot

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Search for new crops which can be grown economically is universal. This station tested field peas as a crop which possibly would have economic value.

Six varieties were tested over a three year period, 1962 to 1964. The peas were seeded with a common double disc drill, using drill settings recommended by the manufacturer. Before seeding, all seed was innoculated to insure proper nodulation. The tests were planted on fallow. They were fertilized with 23 pounds of phosphate (P_2O_5) in 1963 and 1964 but not in 1962. The plots always were seeded at the beginning of the seeding season. Seedling emergence was slow, requiring an average of 21 days from seeding to emergence. The plants were fifty per cent in blossom 70 days after seeding and required an average of 108 days to mature.

Late spring frosts in 1963 and 1964 did not injure the young plants. This demonstrated that field peas have considerable frost tolerance in the seedling stage.

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Flea beetles attacked the seedlings in 1963 but injury was not severe and the seedlings recovered without application of control measures.

Plant disease was limited to a moderate infection by powdery mildew in midsummer. No control measures were used.

Several methods of harvesting were tried. Harvesting with a binder and threshing resulted in heavy shattering losses. Swathing and then combining was more satisfactory but not as satisfactory as straight combining. A rake type pick-up attachment was used on the combine to pull the pea vines and feed them into the combine. This method caused very little shattering in harvesting the peas.

During the years 1962-64, rainfall during the growing season was above normal. From April 1 to September 1, precipitation received was 1.95 inches above normal in 1962, 7.54 inches above in 1963 and 7.13 inches above in 1964.

Highest yields were obtained when stands of 3 to 5 plants per foot of row were established. The rows were 7 inches apart. When stands were thinner, annual weeds became established sufficiently to compete with the crop for moisture and plant nutrients.

Table 1. Yield of field pea varieties in pounds per acre at Minot, N. D. 1962-1964.

Variety	Yield in pounds per acre 1962	1963	1964	3-yr. av.
Stral	1434a	1716ab	2076ab	1746a[1]
Maple	1194bc	1782ab	2250a	1740a
Chancellor	1260b	1776ab	1896bc	1644b
Canadian Yellow	1122bc	1914a	1776c	1602b
Dashaway	1098c	1722ab	1938bc	1590b
Austrian	1140bc	1692b	1878c	1572b

1/ Average values within each year or 3-year average column do not differ significantly at the 0.5 level if they are followed by the same letter.

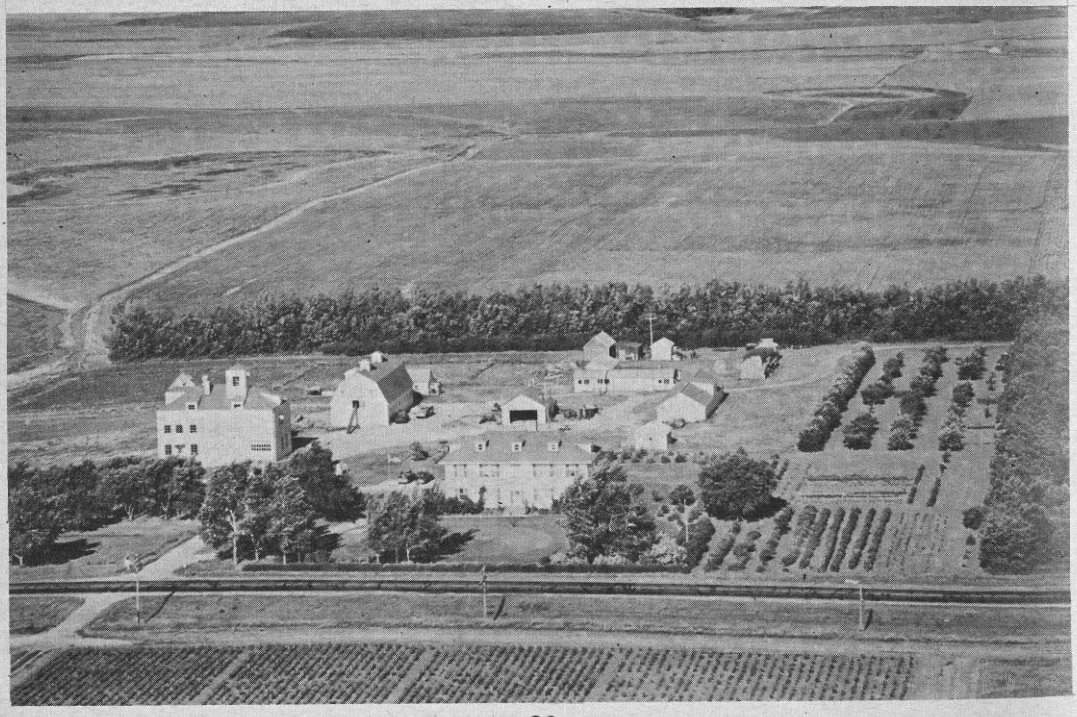
As shown in tables 1 and 2, the Stral variety produced the highest yields and had the shortest growing period. The variety Maple produced nearly as much as Stral. Both these varieties yielded significantly more than the other four varieties in the test.

Table 2. The test weight and the number of days from planting to 50 per cent bloom and maturity for field pea varieties grown at Minot, N. D. 1962-1964.

Variety	Ave. Test Wt.	Days to 50% bloom	Days to maturity
Stral	63.9	66	104
Maple	63.2	69	105
Chancellor	64.5	67	107
Canadian Yellow	64.5	69	108
Dashaway	64.1	69	107
Austrian	63.8	68	105

Since there is no local market for field peas, there is no way at present to determine the economic value of the crop. If research, using them as a protein supplement in animal feeds showed they had value as such, interest might be developed in planting field peas on some of the idle acres farmers now have because of wheat and feed crop acreage restrictions.

North Central Agricultural Experiment Station headquarters.



FROM THE DIRECTOR —

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Additionally, we are turning our efforts toward testing and development of other "specialty" crops for North Dakota, not to compete with wheat and other long-grown staple crops, but to give our farm operators a broader base for their production, or, to turn the metaphor, an "umbrella" over their production. A hungry world needs more protein — can we produce better soybeans, that fastest increasing crop nationally, to supplement our high protein wheat?

The world also needs high quality industrial and edible oils. Does North Dakota have a place in safflower production, or sunflower production, or crambe, or rapeseed? This state now tops the nation in sunflower seed production. Will livestock producers need supplements made from by-products of these crops? How will irrigation change the picture with respect to any or all of these crops? What is the future of flax?

Agricultural policy no longer is as simple as asking whether the crop will grow and whether it has domestic uses. Tariffs, transportation, world supply and demand, war or peace in any part of the globe that produces food can affect us, swiftly and surely. New products and production methods at home can change our eating habits in a few years. Excellent examples of this are the frozen foods industry and the potato processing industry.

North Dakota is not isolated. We are a part of the world and a very vital part of it. We will continue to look to wheat for human food as the keystone of our agricultural industry. We will continue to maintain and improve these wheats. We also will continue to seek new ways of using wheat, for more efficient production and marketing, and for new or better crops and livestock production techniques to supplement and broaden our farm production industry.

You will hear more of these research efforts, in this publication and in others from this experiment station.