From the DIRECTOR



A. G. HAZEN

Information vital to our modern society flows from the research program of the Agricultural Experiment Station at NDSU.

To a great degree, success in any industry depends upon research. The successful manufacturer tests all materials used in his products. He studies all phases of production and marketing. He maintains a trained research staff for these purposes.

The agricultural industry is no exception, but it spends far less on research than does the manufacturing industry. One of the better ways for North Dakota to improve her place in the national economy is to continue to improve the quality and production of the crops and livestock produced in the state.

North Dakota has the soil, the climate, and the human resources to produce the best. The catalyst is research, followed by education and good management.

What does research cost? The Experiment Station is supported from state and federal appropriations and institutional collections. The present annual operating budget totals approximately 3¼ million dollars. About 60 per cent of this is state, 20 per cent is federal appropriations, and the balance of 20 per cent is from gifts, grants, and sale of research by-products.

But does this expenditure represent a cost or an investment? The approximate annual cash farm income from farm marketings and government payments in North Dakota is approximately 750 million dollars. Relating just this income to the annual expenditure for agricultural research reveals these relationships:

reveals these relationships.	
Approximate annual cash farm income, North Dakota	\$750,000,000
Current annual budget, all sources of funds, Agricultural Experiment Station (one- half of the 1967-69 total), including buildings Percentage Station budget is of farm income Current annual budget, State Appropria- tions only, Agricultural Experiment Station (one-half of the 1967-69 total) Operating Buildings and Land	3,683,728 0.491% 2,015,004 325,500
Total	\$2,340,544
Percentage State Appropriations is of	0.312%

Thus, the total investment currently being made when compared with just the cash farm in (Continued on Page 12)

In This Issue

Barley For Beef

Dairy Beef — A Profit Potential	6	
Early Lambs, Late Lambs — Which Are More Profitable?	9	

On The Cover: Barley is well-adapted to North Dakota growing conditions, and is considered a good grain for fattening cattle. Experimental work was conducted at NDSU to determine whether adding two vitamins, Vitamin E and Choline, Fat and two minerals, zinc and sulfur, to barley fed to cattle would have any effect.

A New Handbook for Swine Producers11

Farm Research Bimonthly Bulletin

Vol. 26, No. 1

Sept. - Oct., 1968

A BIMONTHLY progress report published

by the

Agricultural Experiment Station, North Dakota State University of Agriculture and Applied Science

Fargo, North Dakota 58102

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FROM THE DIRECTOR

(Continued from Page 2)

come of North Dakota is indeed very small — on the order of one-half of one per cent.

It is realized that farm income in our state is not at a peak, but without the work of the Experiment Station it would undoubtedly be much lower.

Major areas of research are oriented toward the agricultural sciences and include a wide range of topics. Attention is devoted to production, management, financing, marketing, consumer use, quality, and processing of agricultural products.

Research activities are also directed toward several aspects of rural life, illustrated by housing, utilities, recreation, and population changes.

The Agricultural Experiment Station is composed of the Main Station, located on the NDSU campus, seven Branch Experiment Stations and the Agronomy Seed Farm. The branch stations are located at Carrington, Edgeley, Dickinson, Hettinger, Williston, Langdon, and Minot. The Agronomy Seed Farm is located at Casselton.

The Experiment Station is closely integrated with the College of Agriculture and many Experiment Station personnel also have teaching appointments and responsibilities in the College of Agriculture. For the combined agricultural teaching and research programs, there are some 1,800 acres

of NDSU's 2,180 acres devoted to plots, fields, barn areas, and other agricultural uses. The outlying stations total an additional 6,050 acres.

There are 344 authorized positions on the Experiment Station and College of Agriculture staff, of which 144 are professional positions. Of the 130 professional positions at NDSU, Fargo, 109 are jointly budgeted into the College of Agriculture teaching program. There are also 11 professional research personnel and their assistants stationed in University facilities and financed by the USDA. Agricultural information personnel and personnel in the USDA Metabolism and Radiation Research Laboratory on the campus also contribute to the research and teaching program.

To accomplish the research, there are 13 administrative departments: Agricultural Engineering, Agronomy, Animal Science, Bacteriology, Biochemistry, Botany, Cereal Chemistry and Technology, Entomology, Horticulture and Forestry, Plant Pathology, Soils, and Veterinary Science.

Information from research efforts is continuously interpreted, shared, and made useful in the form of publications, conferences, lectures, scientific papers, special group "short courses," assistance to the Cooperative Extension Service in its teaching program, and in college classrooms. Information is also shared in the regional research program with sister agricultural experiment stations and the USDA.

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to

Postage Paid U. S. Department of Agriculture

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