



NORTH DAKOTA
Farm Research

Bimonthly
Bulletin

Vol. 40, No. 4

January-February, 1985



GUEST COLUMN



T. Ross Wilkinson
Associate Dean and Associate Director

Agriculture in North Dakota could not be where it is today without the relentless efforts of researchers in the laboratory and the field. They are trying to make a good product even better and the unknown a reality. Who would ever imagine five or ten years ago that the citizens of this state would be supporting research efforts in recombinant DNA, better known as genetic engineering? This area of research shows excellent promise in reducing diseases in plants and animals, in controlling the adverse effects of weeds and insects, to better utilize our natural and renewable resources such as atmospheric nitrogen, to improve yields in crops and livestock, and to make other significant advances in the science of agriculture. Too bad this technology cannot manipulate the agricultural economy! And yet it may, through the reduced need for herbicides, fertilizers and who knows.

An ever-growing problem facing future developments in agricultural technology is the availability of human resources. Today men and women are needed in all aspects of agriculture from farming to processing to teaching to research to administration at the state and federal level. According to national statistics, demand for college-trained graduates in agriculture will exceed the supply by 15 percent in 1985. Enrollment information from colleges of agriculture throughout the country has reflected a significant trend away from careers in agriculture and related fields. There are 8.6 percent fewer undergraduates majoring in agricultural disciplines than last year and 16.9 percent fewer than in 1978.

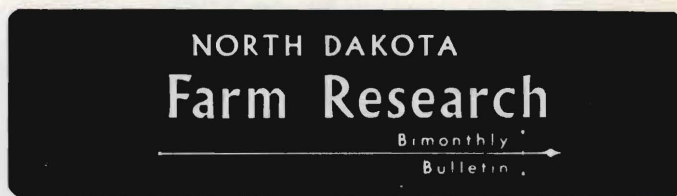
A parallel decline has not yet been experienced in North Dakota. Current enrollment data in the College of Agriculture indicate 4.6 percent fewer students have elected to prepare for careers in agriculture than a year ago and a 6.1 percent decrease since 1978. Under normal circumstances, only a small percentage of these undergraduates (13-16 percent) go on for advanced degrees to become part of the existing scientific work force. Should the number of undergraduates continue to decrease, it will have a dramatic effect on the number of trained agricultural scientists. This, in turn, will impact on technological developments, agricultural productivity, and so forth — a "Catch 22" situation.

continued on page 6

In This Issue

Land Use Changes in the Fargo-Moorhead Fringe Area, 1975-1980 <i>Vernon Dobis and Jerome E. Johnson</i>	3
ND249, ND250, ND252, NSCS, and NDS: Three New Inbred Lines and Two Germplasm Sources of Early Corn <i>H. Z. Cross</i>	7
Effects of Energy Development in Rural Areas: A Case Study <i>Karen C. Maki and F. Larry Leistritz</i>	12
Parent Education: Perceived Needs and Sources of Information <i>Ann K. Mullis and Ronald L. Mullis</i>	18
Zinc Deficiency of Flax in North Dakota <i>J. T. Moraghan</i>	23
Annual Report of the North Dakota Agricultural Experiment Station	27

On the Cover: Dr. David Gabrielson, associate professor in the Department of Bacteriology, coaches the laboratory technique of Jean Nemzek. In this issue's Guest Column, Dr. Ross Wilkinson discusses the need for training young men and women in the agricultural sciences. Photo by James Berg.



Vol. 40, No. 4

January-February, 1983

A BIMONTHLY progress report published
by the
**Agricultural Experiment Station,
North Dakota State University of
Agriculture and Applied Science**
Fargo, North Dakota 58105
H. R. Lund
*Dean of Agriculture, and Director
of Agricultural Experiment Station*
EDITOR
Gary Moran

Buyers' and sellers' opinions on selected land-use statements indicated that both groups favored preservation of high quality agricultural land by regulating urban growth. Both buyers and sellers felt that present regulations do not adequately protect agricultural land from urban and industrial growth in the Fargo-Moorhead fringe area. However, sellers also felt that farmers and potential buyers should be able to buy and sell land without any regulations, which means that sellers have conflicting feelings on regulating land use. Soil erosion by wind and water was reported as a problem by buyers and sellers. They felt strongly that farmland operators should be required to use good soil conservation practices.

Increased demand for small parcels of fringe area land for nonfarm residential sites has shifted agricultural land to urban-type uses. This trend partly reflects changing ownership patterns of land resources in fringe areas. Buyers were younger, better educated, had higher incomes, and a higher percentage were trained and experienced in professional and managerial occupations than were the sellers. The primary reason buyers moved to fringe areas was the desire to live in the country where there is more privacy and quiet. Transfer activity and price paid per acre were much greater for land "close-in" as compared to land farther out from Fargo-Moorhead. Current fringe area land uses reflect both agricultural and urban influences.

continued from 2

The College of Agriculture is addressing the future educational needs of our students in order to insure that they become competent and productive professionals. However, the citizens of North Dakota must encourage their sons and daughters to select careers in agriculture whether it be in agronomy, animal science, agricultural economics, veterinary medicine, soil science, agricultural education, bacteriology, entomology, plant pathology, cereal chemistry and technology, agricultural mechanization, horticulture, or agricultural extension. Expertise in all of these areas, including biochemistry, botany and home economics, is needed to continue and improve the agricultural industry.

The last 50 years have brought significant advances in production, processing and marketing of agricultural

products. Twenty percent of the Gross National Product and 23 percent of the labor force (including 4 percent on farms) are involved in today's agricultural industry. Farm output has increased by two and one-half times during this period, utilizing 6 percent fewer acres than in the 1930s. Today's farmer creates employment for five non-farm workers and produces enough food and fiber for 78 people as compared to 50 years ago when a farmer could produce food and fiber for only 11 people. The importance of agriculture and its influence on the well-being of the nation should be obvious to all.

What will the next 50 years bring, and will the human resources in agriculture be available to meet the demands placed on this industry?

Agricultural Experiment Station
NORTH DAKOTA STATE UNIVERSITY
of Agriculture and Applied Science
University Station
Fargo, North Dakota 58105
Publication

H.R. Lund

DIRECTOR

to

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101



BULK THIRD-CLASS

RANDY COON
MORRILL
AG ECON