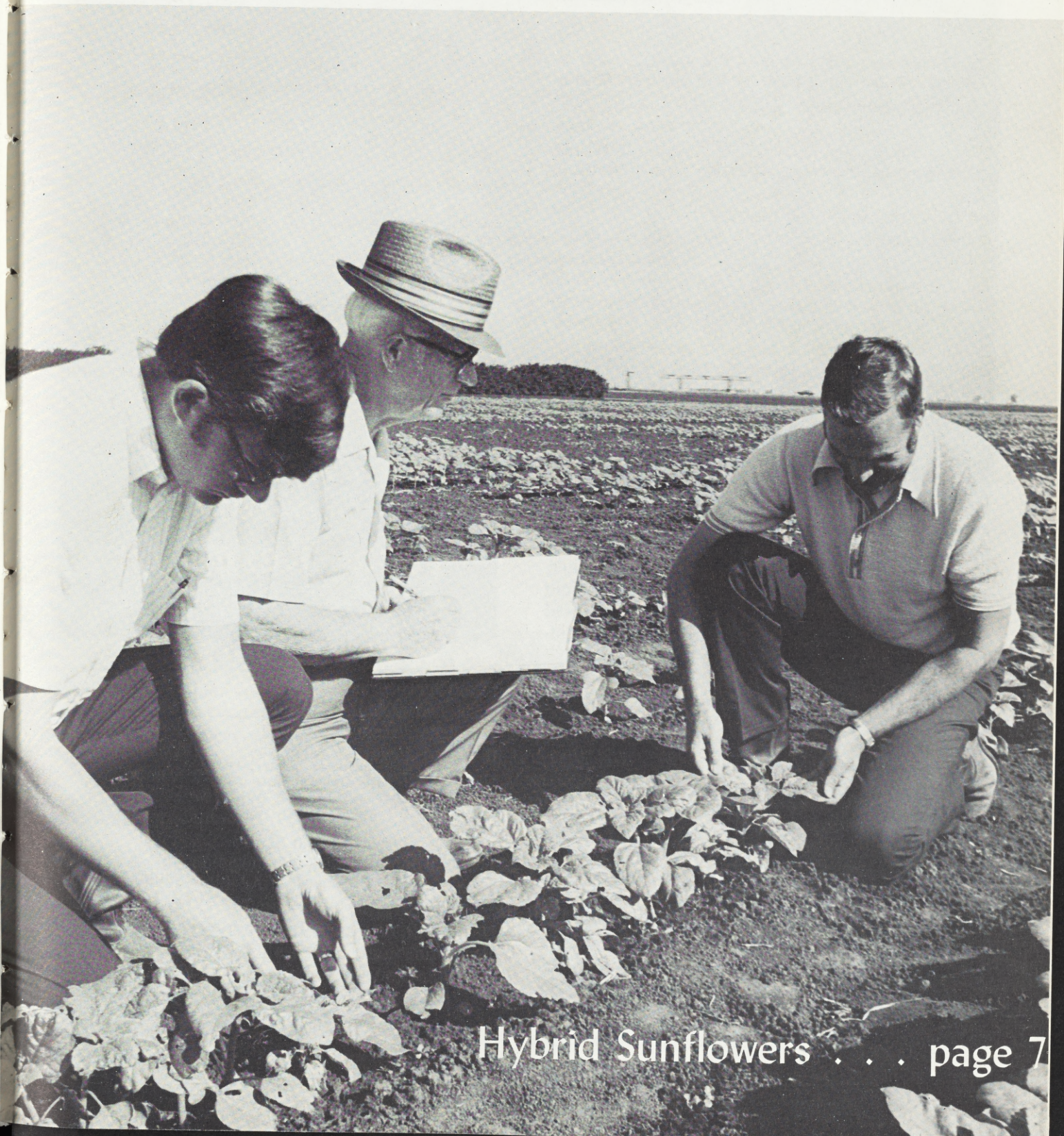
NORTH DAKOTA
Farm Research
Bimonthly Bulletin

Volume 29, Number 6 July - August, 1972



Hybrid Sunflowers . . . page 7

From the DIRECTOR

A. G. HAZEN

Within the last 10 years, the amber waves of grain in eastern North Dakota and western Minnesota have become intermingled with fields of yellow. In a scant decade, sunflowers have changed from an unheralded agricultural crop to more than 600,000 acres in North Dakota and Minnesota alone.

With this increased interest in sunflowers has come a need for research to solve the problems involved with sunflower production, for sunflowers are not a crop without diseases and insects. Downy mildew, rust, sclerotinia stalk rot, and verticillium wilt are troublesome diseases. Of the sunflower attacking insects, the head moth, the midge which caused concern in the Valley last year, stem maggots and stalk borers are most common. Once disease, weed, and insect problems are solved, bird damage, harvesting and handling problems still remain.

Although the non-oil sunflower acreage has increased since the introduction of the crop in this area, oilseed sunflowers provide the greatest opportunity for expansion. The recent discovery of cytoplasmic male sterile and fertility restorer lines, such as those used in corn and sorghum, should make possible more efficient production of hybrid sunflowers. Experimental hybrids have significantly outyielded open-pollinated varieties, by as much as 30 per cent.

The goal of the cooperative federal-state sunflower research program at North Dakota State University is to assist in establishing the sunflower as an attractive alternative crop in its area of adaptation. One specific objective of the program is to develop and evaluate cytoplasmic male sterile lines and restorer lines which when crossed produce superior performing hybrid varieties. Others are to discover sources of resistance to the major sunflower diseases and to use this resistance in the development of new varieties, and to study the etiology and epidemiology of sunflower diseases, hoping to develop management practices that can be used to reduce losses from the major sunflower diseases.

(Continued on Back Cover)

In This Issue

On The Cover: Dr. G. N. Fick, research agronomist, USDA; Clarence Swallers, assistant professor, Department of Agronomy; and Dr. David Zimmer, research plant pathologist, USDA, survey powdery mildew damage in a field of hybrid sunflowers.

NORTH DAKOTA
Farm Research
Bimonthly Bulletin

Vol. 29, No. 6 **July - August, 1972**

A BIMONTHLY progress report published by the
Agricultural Experiment Station, North Dakota State University of Agriculture and Applied Science
Fargo, North Dakota 58102

Arlon G. Hazen
Dean of Agriculture, and Director of Agricultural Experiment Station

EDITORIAL ADVISOR
H. Roald Lund

EDITORS
Robert A. Jarnagin
J. J. Feight *Gary Moran* *Dorothea McCullough*