# Winter Barley for Possible New Pa. Malt Industry Studied at Penn State

Within a few years, Pennsylvania grown winter barley may create a new crop and a new industry for the Commonwealth--malt production.

High yielding winter barley and improved methods for repidly measuring malting quality have been developed by scientists of the College of Agriculture at Pennsylvania State University.

The results look promising for both farmers and industrialists. Increased demand for malting barley could potentially bring new income totaling $20 million annually for farmers and malsters in Pennsylvania, according to Dr. Robert P. Pfeifer, small grains breeder for the Agricultural Experiment Station at Penn State.

Availability of high quality barley, and the increasing demand for it, could encourage the establishment of malting plants in the Commonwealth, Dr. Pfeifer believes. The malting industry is growing at a rate of three to five per cent annually.

Present U.S. malt consumption is about 125 million bushels of barley a year. Anticipations are that the. malting industry will double by 1985 and consume 250 million bushels.

The traditional locations for production are not expected to expand--North Dakota and bordering states plus Canada and Europe. Thus, new production areas for malt barley must be developed and Pennsylvania is a possible location.

Over the past seven years, malt barley research at Penn State has developed equations for predicting malt quality. Effective seed size measurements or several malt quality characteristics were computed to replace traditional malt industry measurements. Another project developed improved techniques to use water absorption measurements as a factor in judging malt quality.

Dr. Pfeifer and associates have found that winter barley has more potential malt extract for the same size kernel than spring barley, the type commonly used in malt today. Winter barley also has the advantage of averaging 60 bushels per acre compared with 30 bushels an acre for spring barley.

Summing up research findings, Dr. Pfeifer says winter barleys may have a place in malt barley production since they yield more grain, are lower in protein content, and higher in sugar extract than spring-type barley.

He indicates the present breeding program has produced many excellent short strawed, high yielding, large seeded, disease resistant, and winter hardy selections. Experiments have included cross-breeding and in-breeding of various barley strains. Selection of the most promising malting types began in 1968.

# Semidwarf Wheats Increasing Foreign Yields

In 1970 high-yielding semidwarf wheats in developing countries accounted for over five per cent of the world's wheat land and eight per cent of total output, according to a report issued recently by the U.S. Department of Agriculture.

As recently as 1966, the eight major producing countries among developing nations--India, Pakistan, Mexico, Turkey, Afghanistan, Tunisia, Iran, and Morocco--planted these varieties on only 0.6 million hectares, compared with 10.6 million last year; output expanded from 1.6 million tons to 22.7 million. In 1970 these varieties accounted for 25 per cent of these nation's wheat land and 50 per cent of their wheat output.

USDA's Economic Research Service reviewed the short impressive history of the semidwarfs and discussed factors affecting future production. The study also considered the impact these varieties can have on the economies of the developing countries.

ERS holds that while there may not be a repeat of the sharp expansion that took place in India and Pakistan in 1968 and 1969, there should be marked gains in wheat output. Advances will hinge on individual government's programs, the efficiency of their agricultural industry, education and investments, and available acreage for the new wheats

Much of the success of these high-yielding varieties--over two tons per hectare against less than one ton of traditional local wheat in 1970--can be credited to contributions made by governments of some 30 developing countries.

Package programs included price supports and procurements, financial inducements, and promotional activities to "sell" the new wheat to skeptical farmers and buyers. The private sectors also aided through the increased availability of irrigation, fertilizers, seed, and other inputs

The new wheats have short strong stems that reduce fallover or lodging, make better use of fertilizer and water to gain higher yields, are better adapted to many areas because of insensitivity to length of daylight; mature early which allows multiple cropping, and have greater resistance to rust and other diseases.

A copy of "High-Yielding Varieties of Wheat in Developing Countries," ERS-Foreign 322, is available free on postcard (please include zipcode) or telephone (388-7255) request to the Division of Information, Office Management Services, U S Department of Agriculture, Washington, D.C. 20250


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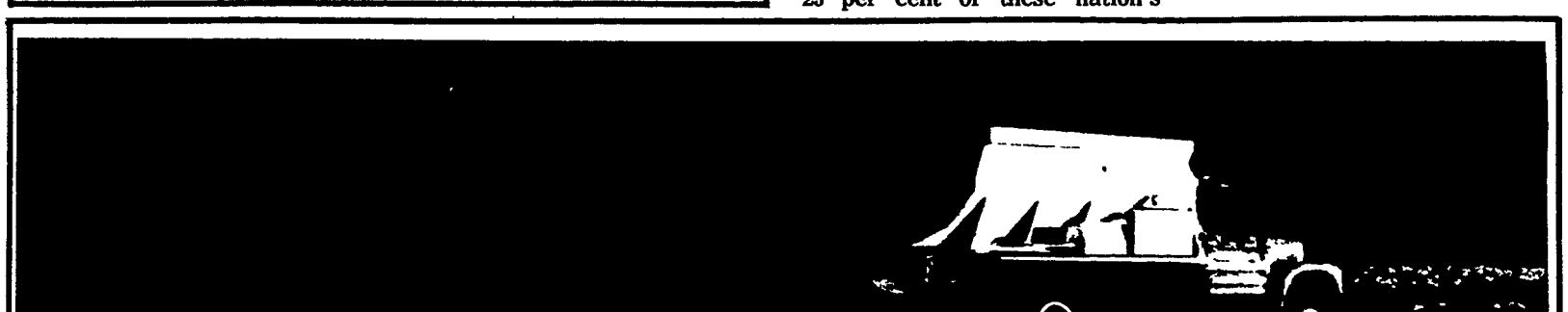

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