Local farmers can double small grain yields

LANDISVILLE — Contending that northeastern farmers could readily double yields of wheat, oats and barley, Penn State and federal researchers are growing experimental wheat on 10 Centre and Lancaster County cooperating farms

They are led by Harold G Marshall, adjunct professor of plant breed and coordinator of the Center for Cereals Research Supported by the U.S Department of Agriculture, the reseachers aim to dispel a "defeatist" aura that has made small grains the poorly managed, low priority crops of a farm-rich region

"Our own findings that yields easily can be doubled - as well as routine harvests almost double those of the Northeast in European areas with similar growing conditions-have convinced us," says Marshall

With intensive crop management and genetically improved varieties, we believe small grains rapidly could become major crops in Pennsylvania, New York and Maryland - resulting in a mini-agricultural revolution, which would help transform a food- and feed grain-deficit area into a variable breadbasket

Moreover, wheat alone easily could compete with corn as a cash crop This would reduce, or hopetully reverse, a dangerous trend toward genetic vulnerability, due to increasing dependence on corn as the grain crop of the region "

Taken together, he says, yield bonanzas for wheat, oats and barley would greatly benefit the region's farmers, consumers and agribusiness And should yields exceed [illegible] farmers, with easy access to seaports, potentially could capitalize on worldwide food demands

Looking only at the future, the monetary gains could be enormous Thus, the Northeast annually harvests about 650,000 acres of wheat - of which 260,000 acres are in Pennsylvania The average yield is 35 bushels per acre, though top producers are getting much more

Assuming only a very conservative five bushel-per-acre average increase for the region, says Marshall, and given the current wheat price of $4 40 a bushel - the annual value of the region's wheat crop would go up by $14 3 million, and that of Pennsylvania by $5 7 million

In oats, Pennsylvania annually harvests about 55 bushels-per-acre, on 350,000 acres. At $2 40 a bushel, an increase of five bushels would give farmers an extra $4 2 million With a similar yield hike, the rest of the region would get an additional $13 3 million. For barley, the respective gains for Pennsylvania and the region from a five-bushel increase would be $1 7 million and $7 million

Keep in mind,' Marshall emphasizes, that these estimates are very conservative and achievable in a couple of years '

Seeking to make such predictions a realty, Marshall, a USDA research agronomist, sought, and in 1979 received, federal support for the establishment at Penn State of the CCR Today, working full or part-time, 14 agronomists, plant breeders and pathologists, weed scientists, crop physiologists and agricultural economists have a two-fold goal.

They are trying to prove to farmers that, using current crop varieties - as well as more intensive cultural practices and coordinated pest management strategies - enormously larger small-grains harvests are possible now

Also, looking to the future, they re developing new cultivars, to achieve still greater yields, by building in better resistence to diseases, insects, weeds and diverse other environmental stresses peculiar to the region

For the moment, the CCR team is engaged in a three-year pilot project, aimed at developing and demonstrating optimum management practices

Last October, the researchers planted soft red wheat (mainly used for cookies, cakes and pastries) on six Lancaster and four Centre County farms While the researchers try 48 intensive treatment" combinations on 12-by-100 foot test strips, farmers will use conventional management practices on surrounding land

After harvest, the experimental and normal crops will be compared for yields, as well as for incidence of disease, insects, weeds and lodging , a common problem where wheat stalks, too tall and weak, break readily

The outcome is predictable, says Marshall For 30 years, northeastern small grain yields have been stagnant Farmers still grow such grains largely because they're necessary for livestock feed and bedding

However, discouraged by low yields, farmers have lacked an incentive to manage small grains as intensively as they do corn and alfalfa Likewise, they haven t had the know-how to use innovative growing techniques

Part of the problem has been low research priorities This has led experts to neglect the region s small grain s problems, and to fail to develop varieties designed for the region's basically cloudy, humid weather A major cause of low yields is the fact that cultivars used here were developed for the sunnier, drier clime of Ohio, Illinois and Indiana '

Thus, it is not surprising that, in 1978, for example, Pennsylvania wheat farmers averaged 33 bushels-per-acre-while their English counterparts got 77 bushels

Moreover, while Pennsylvania wheat yields barely have changed since 1950, Britain s have doubled The difference. use of improved varieties and intensive crop and pest management systems

Because intensive growing systems were used by Penn State s CCR team in 1979, their experimental wheat plots averaged up to 95 bushels-per-acre

Actually, Marshall explains, they only used two intensive procedures a high seeding rate and a large amount of nitrogen fertilizer

What are other components of intensive management' Basically, intensive means using combinations of cultural and pest management practices which, in the absence of genetic resistence, will do two things yield denser grain stands and cut losses due to plant pathogens

Other main intensive techniques are careful crop rotation and land preparation and uniform seeding depth

(Turn to Page A22)