This time of year when most Louisiana farmers are taking in the year's harvest or already have it out of the field, Stephen A. Harrison and his crew at LSU are just putting in their crop. Harrison is LSU's wheat man. More formally, he is the wheat plant breeder in the agronomy department of the LSU Agricultural Center.

Growing wheat in Louisiana starts in the fall. Farmers plant wheat at that time, and it grows over the winter and bears in the spring. The schedule provides a neat fit with soybeans, a summer crop. Among other undertakings, Harrison coordinates the state's wheat variety trials. Various places around the state plant different strains of wheat to see how they perform in Louisiana's climate and on Louisiana soils. Data are collected, and some judgments are made about which varieties will produce well in the state.

Besides trying varieties developed by other wheat breeders, Harrison has his own strains in trials now. The agronomy department reports some are well on the way to becoming new varieties. Harrison has seven lines in state variety trials and another 200 lines of wheat in preliminary yield trials at Baton Rouge, Alexandria and St. Joseph, according to Edward P. Dunigan, head of the agronomy department.

Dunigan said Harrison has added great emphasis to wheat breeding at LSU since he joined the faculty eight or nine years ago. "He has really taken the program over and expanded it since his time here," he said.

Wheat research was already under way -- one past wheat breeder is Kenneth Tipton, now head of the Louisiana Agricultural Experiment Station. But, Dunigan said, Harrison "has brought it to the forefront considerably."

Not so long ago, wheat was not an important Louisiana crop. Before the 1980s Louisiana wheat acreage was usually below 100,000 acres and frequently below 50,000 acres.

In recent years as farming became more diversified, farmers have planted as high as 500,000 acres -- comparable to this year's rice acreage. Last year farmers harvested close to 200,000 acres, and this fall they may plant some 400,000 acres, Harrison said.

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Researcher developing new types of wheat for Louisiana

The variety must produce early, so it can be harvested in time to follow it with the soybeans, Dunigan said. Disease resistance is also important in screening varieties.

Harrison looks for high yields and high test weights. He said he hopes to get 58 to 60 pounds per bushel.

He wants a variety that will stand up against rain and wind. Samples of the harvest are sent to a laboratory to be tested for milling and baking qualities, he said.

Southern states usually grow soft wheat. Flour from soft wheat is suitable for baking foods that crumble easily, like cookies, crackers, biscuits and cakes, Harrison said.

Hard wheat, grown farther north, has a different kind of starch and protein that make it good for bread, he said.

With researcher Tim Croughan at the LSU Rice Research Station at Crowley, Harrison is working on strains of wheat with genetic variance that may prove useful in developing new commercial varieties.

Harrison also is trying to breed "photoperiodic" wheat, meaning its flowering would be governed by day length. According to Dunigan, "This would allow for a broader range of planting dates, which would help eliminate the need to worry about planting too early and having a crop damaged by a late freeze, or planting late and not having vernalization take place." Wheat "vernalizes" when it blooms too early, thus exposing the bloom to a freeze.

The wheat breeder has two research associates, J. David Thompson and Ivan Dickson. He also has the assistance of a visiting scientist, Istvan Lovc.

Besides Agricultural Center funds, Harrison's work is supported by grants from companies, variety-testing program fees, and grants from the Louisiana Soybean and Grain Research and Promotion Board.

One aim of Harrison's work is to see that Louisiana farmers get varieties of wheat adapted to Louisiana growing conditions. According to Dunigan, a wheat variety must suit Louisiana's practice of double-cropping with soybeans. It must grow on a short stalk so that it produces a minimum of straw at harvest time. Harrison said the farmer probably is going to plant soybeans on the field after the wheat is harvested in spring. Straw gets in the way of plowing, he said.