Garden/Farm

No till soybeans

These soybeans planted by Kenneth Hendrix were the first in Hoke County. They are shown here under irrigation. The no-till method of planting is seen as a cost-saving measure for farmers.

Hoke Agricultural Extension News

by Willie Featherstone, Jr.
Agricultural Extension Agent

Tobacco Disease Control

Management is really the key to good plant production, including the control of diseases.

Growers have learned how destructive diseases such as blue mold can be and realize that plans must be made in advance to manage this disease and others which might appear.

Proper drainage is an extremely important consideration because most plant bed diseases are favored by poor drainage conditions. This applies to problems such as damping-off, blue mold, and anthracnose.

A Look Ahead

Three new varieties from the North Carolina Agricultural Research Service will be available for growers in 1984. Each of these varieties has met standards required for release and seed will be increased for each of them during the coming season.

Tobacco Pathology Extension Newsbriefs

NC 50 is a new variety with good yields and high quality. It is resistant to Granville wilt, black shank, and root-knot nematodes (Meloidogyne incognita). Many growers may want to look at this variety to see where it can fit into their production plans.

NC 567 will also be available in 1984. This variety offers resistance to mosaic and tobacco cyst nematodes, along with black shank, Granville Wilt, and root-knot (M. incognita). NC 567 will provide growers with an additional choice, especially if they have chronic problems with mosaic. It is believed that this variety offers higher quality than that currently available in mosaic resistant varieties.

NC 22-NF is being increased for grower use next year. This variety is a so-called "non-flowering" variety - which was predicted for you in the first issue of **Newsbriefs** in 1981. The variety is highly photosensitive which means that flowering is delayed until days become short in the fall. Obviously, the advantages from a variety such as NC 22-NF are the elimination of premature flowering and easier sucker control.

Management will be the key in successful production of NC 22-NF. Topping and other cultural practices must be done as with any conventional variety; otherwise, quality will be down and growers will not be satisfied.

All of these new varieties will be in extension disease tests this year and in tests and demonstrations conducted by extension agronomists. A significant amount of each will be planted at various parts throughout the state. It would be helpful to gain experience and information on each of these varieties to better select your varieties for the 1984 season.

A STUDY IN CONTRASTS. Hugh M. Hefner launched *Playboy* magazine while he worked on the staff of *Children's Activities* magazine.

No-till Planting Helps Farmers

by Sam Warren,
District Conservationist

With inflation eating away at farmer's profits, he has to double crop when possible to squeeze maximum yields from the least cash outlay.

The most profitable, double-cropping method behind small grain is no-till soybeans or "stubble-cropping"

Research and farm experience has shown an average of $15 per acre less investment stubble-cropping than the conventional method of burning, disking, or bedding land for the late soybean crop.

Yields have averaged about the same to often better, due to the moisture conservation and planting days earlier. Extension Service experts say that a bushel per acre in yield is lost each day planting is delayed after June 15. Also, the no-till method allows narrow 15-20 inch rows which have been proven to boost yields and reduce weed problem by earlier alley shading.

Soil Conservation Service studies show that each year in North Carolina, soil erosion on cropland removes more than 47,000 tons of soil. About 5 tons per acre per year is considered to be a tolerable soil loss, but the average annual soil loss for all cropland is 7.64 tons per acre.

These losses may take centuries to replace. For the nation as a whole, SCS has estimated that wind and water have damaged 50 million acres of America's best cropland so badly that it is no longer useful for crop production. Another 100 million acres has been severely damaged.

Some conservationists feel a psychological stigma is attached to the acceptance of conservation tillage.

In general, the savings of fuel, equipment and man hours outweigh the added expense of herbicides. To better help farmers overcome the expense of modifying their planters, cost-sharing is available from ASCS for $10 per acre.

If you need more information, feel free to call on the Raeford SCS or Extension Service.

Crop Vulnerability Increasing

By Susan Talanda

Experts estimate that about 12 cultivated crops stand between the world and starvation. The barriers between these major crops and crop disease epidemics are eroding at an alarming rate, say scientists at North Carolina State University.

Crop vulnerability has increased to the extent that "conceivable environmental changes could reduce food production enough to cause unprecedented shortages and famine even in the present generation," said Dr. Gene Namkoong, professor of genetics and forestry at NCSU.

Genetic diversity in crops is nature's barrier against crop epidemic, he explained. But genetic diversity is now threatened by genetic wipe-out -- the extinction of plant varieties crucial to future crop survival and improvement.

By growing many varieties of each crop, you get a wide range of genetic resistance to pests, disease and environmental changes, Namkoong explained. But because crops of uniform size, shape, color, etc. are easier to process, more uniform crops are being produced world-wide. Uniformity of produce often leads to genetic uniformity. The greater the genetic uniformity of our crops, the greater their vulnerability to a single pest, pathogen or adverse change in climate, Namkoong said.

"If this process continues unabated, we place man's future in jeopardy," said Dr. Major M. Goodman, an NCSU statistical geneticist.

"At one time, crop rotation formed geographical barriers to crop epidemics, but in modern agribusiness, single crops are grown in dense fields stretching across entire states. There's nothing to stop disease from spreading."

Although hundreds of plants become extinct each year, those most critical to world hunger are corn, wheat and rice, which make up 68 percent of the world's seed crop, Goodman said. The United States is the largest producer and exporter of corn, and yet we grow only three out of about 250 races.

Current corn hybrids are bred for one trait -- high yield, said Dr. Paul H. Harvey, NCSU professor emeritus and chairman of the National Corn Research Coordination Committee (NCRCC). Although the hybrids have some resistance, pests and pathogens adapt rapidly to overcome resistance, he added. According to a 1982 NCRCC study, diseases and pathogens must be guarded against continually if we are to avoid epidemics such as the 1970 Southern corn leaf blight.

When this epidemic hit, 80 percent of the U.S. corn crop was genetically similar. About 20 percent of the U.S. crop (15 percent of the world's corn supply) was lost in the blight.

"If a similar epidemic had started in the Corn Belt, or had hit the Corn Belt earlier in the season, it would have been a disaster," Goodman said. It would have crippled the U.S. corn and livestock industries (90 percent of our corn crop is fed to livestock), and it would have caused starvation in countries dependent on U.S. corn and cornfeed imports.

"No other grain crop contributes more to the economic well-being of the nation than corn," the NCRCC study says. In 1981, foreign markets purchased one-third of a record 8 billion bushels of U.S. corn.

Another major U.S. crop --wheat-- is increasingly vulnerable. A few varieties of wheat are used over and over in the United States, said Dr. Charles F. Murphy, an NCSU crop scientist.

Our dense, highly fertile wheat crop creates ideal conditions for pathogens such as glume and leaf blotch, but no good genetic source of resistance has been identified, he said. In a major outbreak of such a disease, there would be no resistant strain to substitute, as there was in the 1970 Southern corn leaf blight, Murphy said.

Goodman agreed that for some crops, there isn't time between the onset of a crisis and the next planting season to develop resistant strains or shift to alternative crops. Thus, he said, a second crop could be damaged, increasing food shortages even more. Because wheat grows under quite harsh conditions, there are very few alternative crops for wheat farmers.

The introduction of genetically similar high-yield grain seed in Third World agriculture makes crop vulnerability an international problem. According to a recent issue of "High Technology" magazine, "There has not been another crop epidemic of the same magnitude as the 1970 Southern crop leaf blight, but a similar epidemic in other crops -- for example, the high-yield rices in Asia -- could be a disaster causing widespread starvation."

"A 5 to 10 percent drop in production of a major crop in India, for example, would cause mass starvation on a scale of 10 to 40 million deaths," Namkoong said. Countries like India don't have the capital to buy food on the common market if crops fail, he said.