

High-Performance Soybeans - A Few Years Away

FINDING the answer to high-performance soybeans is like finding a cure for the common cold. It isn't easy. But just like the cold, researchers in education and industry are working at full speed to ferret out the mysteries of superior soybean production.

Because soybeans are naturally self-pollinating, attempts at developing commercial hybrids have been unsuccessful. Improvements through genetic methods cannot progress in the soybean as fast as they have in seed corn since crosses must be meticulously done by hand on fragile flowers.

So agronomists are beginning to organize in a unified effort to explore alternate routes to the distant destination of the improved soybean. The National Soybean Research Coordinating Committee, a group of university scientists involved in soybean work, has recently banded together to set research priorities and to prevent duplication of effort among their own ranks.

Funds for research are coming from government, to the tune of \$1,000,000 to be dispensed through two agencies of the USDA; from industry-related groups, such as the National Soybean Crop Improvement Council which is providing \$200,000 toward the effort; and from commercial seed companies that are sinking untold millions into their own long-range soybean research programs.

Educators at Minnesota, Iowa State, Illinois, North Carolina State, Wisconsin, Purdue and Arkansas have been given grants from the National Soybean Crop Improvement Council for two-year programs that may give further answers to the questions of:

What is the most practical method of controlling pod set?

How do root characteristics affect the growth process?

How do carbon and nitrogen balances affect soybean yields?

Can the protein content of the soybean be improved through genetic means?

Is the rate of nutrient absorption by the roots a limiting factor in soybean growth?

While substantial basic research has been done by educators at land grant universities, many commercial seed producers have also been exploring totally new ground.

"With the recent rise in the significance of soybeans as a cash crop to the farmer and a food source to the world, many companies are putting a greater emphasis on soybean research than they have in the past," says Robert Strosnider, regional research manager for Asgrow Seed Company. According to Strosnider, his company has recently geared up its plans for controlled expansion in the soybean marketplace.

Research, production, quality control and distribution plans all must be coordinated, says Strosnider. But he emphasizes that "it may be four or five years before any truly significant improvements

over the certified varieties or blends of the certified varieties will be on hand."

"Our objective is to have significantly improved soybeans for sale in all maturity ranges as soon as possible," says Dr. John Schillinger, Asgrow's soybean project leader.

Schillinger is spearheading Asgrow's program at research farms in Ames, Iowa; Sun Prairie, Wisconsin; Oxford, Indiana;

Bridgeton, New Jersey; Delray Beach, Florida, and San Antonio, Texas.

"Of course, we can grow several generations in one year in southern climates," says Schillinger. "After enough parent material is produced in Florida, we then move north and grow the stock in the various maturity areas where they eventually will be grown."

Asgrow, along with other commercial seed producers,

will encounter the same hurdles in the race for a truly improved soybean variety. Superior genotypes are being developed. Although the process is slow, improved varieties will be available in a few years.

Disease and insect resistance can be identified in certain germplasm, but these problems are more localized and a variety that is excellent in one area may not be suitable in a neighboring state.

Work is being conducted to improve yields through more efficient use of soil fertility, especially potassium.

The germplasm base used in most soybean varieties

today is somewhat narrow. About eight parents are responsible for the majority of all soybeans grown in the U.S., according to Schillinger. He is quick to add that the base is not so narrow that there is significant danger of a recurrence of a disease fiasco such as the Southern Corn Leaf Blight outbreak of 1971 which resulted from the majority of the seed coming from susceptible Texas male sterile cytoplasm.

"There are several new potential sources of genetic material," says Schillinger, "most of which will come from the World Collection." The World Soybean

Collection is a large bank of soybean germplasm supervised by the USDA and state scientists at the University of Illinois. New plant introductions are released to plant breeders regularly in the hopes that some exotic variety, native to China, Japan and Manchuria, may exhibit promising characteristics that can be transferred into domestic lines and unlock the door to superior production.

"We have already discovered germplasm from the World Collection that shows potential for certain fertility response," says Schillinger.

FTC Scrutinizing Egg Industry Ads

The Federal Trade Commission is investigating a series of advertisements, sponsored by the egg industry, that disavow a relationship between eating eggs and developing heart disease.

The commission expects to decide within a few months whether to proceed against the industry for "unfair and misleading" advertising. Richard Herzog, director of the commission's Division of National Advertising, said that in light of the importance of the matter, he had directed his staff "to investigate the matter thoroughly and with dispatch."

At issue is the claim made in three industry-sponsored advertisements, published in two national newspapers, that "there is absolutely no scientific evidence that eating eggs in any way increases the risk of heart disease."

Two organizations, the American Heart Association and Action for Safety and Health, a Washington-based legal action organization, have filed complaints with the FTC, challenging the truth of the ads.

The complaints call upon the federal agency to file a cease-and-desist order, to obtain an immediate injunction to block further such ads and to require "corrective" ads telling consumers how they have been misled.

Should such a case come to trial, it is likely to be an explosive airing of a long-simmering controversy over the relationship between the consumption of high-cholesterol foods and the risk of heart disease.

The yolk of eggs is the most concentrated source of cholesterol among commonly eaten foods. One large egg yolk contains approximately 275 milligrams of cholesterol, or 85 per cent of the amount recommended for daily consumption by the American Heart Association, The National Academy of Sciences and other leading health organizations.

This recommendation is based on a variety of scientific studies that indicate that consumption of large amounts of cholesterol-containing foods raises the amount of cholesterol in the blood and that a high level of cholesterol in the blood enhances the risk of heart disease.

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