

Monsanto is shifting its focus from corn to new biotech soybeans

By Rachel Melcer

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A shift is becoming visible in the research labs and executive suites of crop giant Monsanto Co.

After years of focusing on corn, the Creve Coeur-based company is developing new biotech soybeans. Monsanto's leaders also are thinking as much about demand from China's growing middle class and from health-conscious Americans as they are about feeding biofuel facilities.

The company's soaring earnings and share price last year largely were attributed to growing ethanol use, but other factors are coming into play.

"Agriculture is in new territory," Hugh Grant, Monsanto's president, chairman and chief executive, said in a recent interview.

"I'm not belittling biofuels, but I think there's a tremendous opportunity behind it," Grant said. "There's a larger global factor that's being masked, in some ways, by biofuels — and that's the demand curve coming out of Asia."

Scott Rozelle, an agriculture economist and China expert who teaches at Stanford University and the University of California-Davis, said both factors are fueling unprecedented global demand for soybeans, corn and other grain.

"If they were two elephants sitting on a teeter-totter, which one would inch up and which one is going to inch down?" he said. Biofuels eventually will be outweighed by demand from China, "but they're both going to break the teeter-totter."

Farmers need new technology to help them squeeze greater yield out of every acre, Rozelle said. They must supply the world while facing shortages of prime cropland and water.

Monsanto, the world leader in developing genetically modified crops and using molecular technology in breeding, is working feverishly to help them.

The company spends nearly 10 percent of sales each year on research and development. In fiscal 2007, its R&D budget topped \$780 million. The result is a pipeline of 26 biotech crop products — a dozen in soybeans, nine in corn, four in cotton and one in canola.

The first to hit the market will be Roundup Ready2Yield soybeans, which will give farmers a yield increase of between 7 percent and 11 percent beginning in 2009, the company said. On its heels will be the launch of SmartStax corn, which combines eight traits to boost yield and make it easier for farmers to deal with weeds and pests.

Monsanto sees these as platform technologies, upon which it will layer traits that consumers value: Soybeans enriched with heart-healthy Omega 3 fatty acids or modified to produce inexpensive oil that can match the product of olives in dietary benefits.

Also in the pipeline are crops that can survive with less water and nitrogen fertilizer. They are valued by growers because they are more dependable and cheaper to grow.

Consumers also appreciate these improvements because they make agriculture more sustainable and easier on the environment, said Robb Fraley, the company's chief technology officer. "You don't have to be a farmer to understand what 'drought' means," he said.

Drought-tolerant seeds "resonate with consumers," he said, and, along with soybeans that

contribute to healthier diets, should help overcome lingering opposition to genetically modified crops in many circles.

Food companies, which resisted commercialization of biotech potatoes and wheat, are anxious for improvements in soybean oil, Fraley said.

Many consumer foods already include oil from herbicide-tolerant Roundup Ready soybeans, which are grown in more than 90 percent of the U.S. crop.

Nevertheless, there are vocal proponents of organic agriculture and consumers who believe genetically modified crops pose a threat to human health and biodiversity.

The Roundup Ready trait, commercialized in 1986, is the only one Monsanto has on the market for soybeans. Growers are anxious for new technology, said John Hoffman, president of the Creve Coeur-based American Soybean Association and a farmer in Waterloo, Iowa.

"We're excited about these products. There's a lot of buzz out in the countryside, even though they're a few years off," he said.

In a few years, soybeans with dietary traits for consumers will help growers differentiate their crops from commodity varieties grown in Brazil and Argentina and fetch higher prices, Hoffman said. More immediately, growers are looking forward to the yield bump from Roundup RReady2Yield varieties.

"Global demand is tremendous for more soybeans," driven by the expansion of biodiesel as well as the booming population in Asia, Hoffman said. "So this new technology will arrive just in time..." "... Farmers are going to readily want to adopt it."

Henry Nguyen, director of the National Center for Soybean Biotechnology at the University of Missouri-Columbia, said soybeans have been "on the back burner" as growers and agriculture companies focused on corn-based ethanol opportunities.

However, researchers believe ethanol eventually will be made more efficiently from cellulosic materials, such as switch grass and corn stalks, and that demand will subside.

Soybeans, on the other hand, are approaching a peak, he said.

Monsanto hasn't deliberately neglected soybean innovations. Rather, it refined its strategy a few years ago to focus solely on corn, soybeans, cotton and technology — dropping development of biotech wheat, rice and forestry, Grant said. Once that decision was made, the company began addressing opportunities in the four row crops and corn came first.

Monsanto began ramping up investment in soybeans about four years ago, he said. It takes about seven years for the company to develop hybrids using genetic marker technology, and eight to 10 years to get a biotech crop to market.

Academic researchers, foreign governments and competitors see the same opportunities and needs as Monsanto, and also are developing biotech crop technologies.

"But I think Monsanto outspends most foreign countries in terms of research, so they're going to be a very important player," Rozelle said.

"Their technology program is very, very innovative and they'll have some great products coming out" to meet demand that can't be accommodated in any other way.

rmelcer@post-dispatch.com | 314-340-8394