

# Y Series *Makes* Debut

## *New Generation Of Soybean Will Deliver Unprecedented Yield Gains*

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MidAmerica Farmer Grower

**P**ioneer Hi-Bred announced the introduction of a new generation of soybean products in a special Pioneer teleconference call. The new soybeans will deliver unprecedented yield gains to meet the incredible demands for soybeans, said Jerry Harrington, Public Relations Manager of Pioneer, who introduced the program to media.

"We're calling this the Y Series class of soybeans from Pioneer because each variety is designated with the letter Y in the middle of its numeral name," he said. A press release on the introduction is available at [www.dupont.com](http://www.dupont.com) and at [www.pioneer.com](http://www.pioneer.com).

Paul Schickler, DuPont vice president and general manager and Pioneer Hi-Bred president, was the first to speak.

"Here at Pioneer we take our jobs to increase productivity very seriously," he said. "In the current situation of high commodity prices and low stocks we have been saying that we have the science to help address this incredible demand for agricultural commodities. I'm very excited to announce today that we will deliver a stock change improvement in soybean yields in unprecedented volumes for the 2009 growing season. No one else in the industry is bringing this kind of soybean yield improvement to the number of acres that Pioneer will this coming year."

He noted that Pioneer has been the soybean brand leader since 1989 and has gained 6 points of market share over the last eight years. The company expects a yield advantage in large volumes of Y Series soybeans will expand its industry leading soybean position and further expand the Pioneer share of North American soybean acres in 2009.

"The yield improvements we are seeing in these soybean varieties are possible through proprietary technology that is improving our base genetics," he added. "This is not solely a side benefit of a herbicide resistant trait. This strategy allows us to go after increased yield from multiple fronts."

Don Schafer, senior marketing manager for soybeans at Pioneer, noted that higher yields have never been more important to the ag economy and the world as they are today.

"Higher, more efficient and more stable yields on every acre are more critical than ever," he said. "The Y Series soybeans from Pioneer that we are introducing today will lead the way in meeting that challenge for the North American soybean farmers. This is truly the best class of new soybean products I've seen during my 27-year career here at Pioneer."

The entire Y Series class has shown a five percent yield advantage over key competitors in more than 1,800 on-farm comparisons with some of the Y Series varieties yielding as much as 10 percent better than the key competitors. The Y Series varieties with the highest yield advantage are also the varieties Pioneer is introducing in the largest volumes for the 2009 planting season.

"I've talked a lot about yield up to this point but it is critical for our customers that high yielding genetics also have key genetic traits and agronomic stability to protect that yield," Schafer said. "The Y Series is up to those challenges as well."

"If the Y Series soybeans deliver a five percent yield advantage, that's about two and one half additional bushels per acre," he said. "With soybeans trading around \$15 per bushel, those initial two and one half bushels will bring the farmer over \$37 additional income per acre. That increased value is real exciting, especially when considering the 9 million acres to be planted next year."

This is the largest volume product launch in the 82-year history of Pioneer. With the Y Series yield advantage, the volume projected and the potential increase impacted, these products have the potential to add about 19 million bushels of soybeans to the U.S. production next year.

The 32 new Y Series soybean varieties from Pioneer that will be available for the 2009 planting season will also be available in Group 0 through Group VII. This means the growers will have the opportunity to plant a Y Series variety across the entire North American soybean growing area.

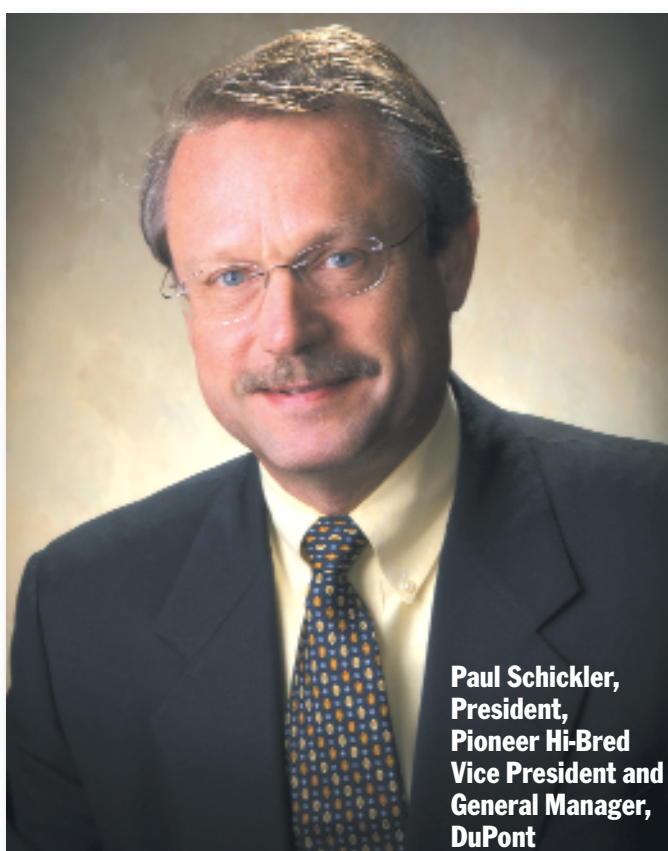
John Soper, senior research director for soybean product development at Pioneer, discussed how Pioneer is employing its proprietary accelerated yield technology (AYT) to boost yield potential and the agronomic performance of these products.

"I've been in the soybean breeding business for about 20 years now and this is one of the strongest classes that we've ever seen and one of the foundations of this Y Series is Pioneers' accelerated yield technology or AYT," he said. "AYT is really a matrix of proprietary molecular technology and Pioneer has been a leader in soybeans for the use of molecular technology since the mid-1990s. Historically we've developed molecular markers for traits such as resistance to soybean cyst nematode, Phytophthora root rot and brown stem rot resistance."

"One of the new breakthroughs in the last few years is developing molecular markers that actually track genes that can enhance yield performance per se," Soper said. "These molecular markers are the same technologies that are used in forensic science, where you go to a crime scene and you find a sample and do DNA analysis and then use that information to de-

termine the perpetrator of a crime or a victim. We have the same technology in soybeans but we use a sample of leaf tissue or a sample of seed tissue, extract the DNA and do a molecular fingerprint of that DNA, then utilize that information to identify genes that reside within the plants."

One challenge researchers faced when trying to uncover the actual genes that enhance yield,



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President,  
Pioneer Hi-Bred  
Vice President and  
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Soper said was that, unlike disease resistance or pest resistance, which are controlled by one or two genes, yield is controlled by many genes working in combination.

"It is very difficult simply to look at yield data and try to determine what genes are causing yield enhancement," he said. "Fortunately, we have ancestors of our soybean lines, we have the great, great, great grandparents of those lines. We developed the proprietary technology that's patented that's helped us identify those yield genes."

"We've done a genetic analysis of those soybean varieties and compared them to the genes that reside in today's elite varieties and we've identified genes that have gone from very low frequency five generations ago to very high frequencies today," Soper said. "Since we know breeders have focused on yield, there's a high probability these genes have increased as a result of breeders selecting for yield and thus the genes are actually associated with yield enhancement."

Soybeans have more than 30,000 genes and scientists had to filter through those to find some yield gene enhancing candidates. After the analysis, there were a little over 100 genes that they focused on as potential yield enhancers.

"Then we started testing those genes one by one to see if, indeed, they had yield enhancing properties," Soper said. "Fortunately when we did that, we were able to validate that certain genes do have yield-enhancing properties. This forms the basis of this new technology and the expansion of the use of AYT or molecular markers into yield enhancement."

With this technology many things can be done. Existing varieties can be improved by re-selections within varieties. As researchers go forward they are using the information to match up parents to make better combinations. They can combine different genes that enhance yield and derive progeny which have higher combinations or better combinations of yield enhancement.

"This is what the AYT is all about," he continued. "The overall goal is that we are doubling the rate at which we're bringing yield gain to customers. So historically, soybean breeders have gained on average a half-bushel yield increase per year. We expect the AYT technology to at least double that rate to two percent per year and it probably could go higher than that, based upon what we're seeing in their results."

Looking forward, Pioneer has a very aggressive goal beyond the Y Series. That goal is to increase soybean productivity by nearly 40 percent over the next 10 years. This is to meet the growing demand for soybeans used for food, feed and fuel.

"Historically, again, we've had about a one percent yield increase without the use of molecular markers," he explained. "So over a 10-year period just by using traditional breeding techniques we would expect to gain about 10 percent. Again, with AYT we expect to double that rate of gain per yield which would bring our total gain per yield over the 10 years to 20 percent. We have a number of transgenic and non-transgenic crop protection traits against various diseases and pests like Asian soybean rust, Chinese soybean aphids and insects that will be added to soybeans in the next three to five years that will add yield protection and yield enhancement to the number of products."

"We'll be coming to market with the Optimum GAT trait, which we also expect to have a yield enhancing effect on the soybean product line," Soper said. "Then towards 2015, 2016 we intend to have a transgenic yield enhancement trait which can raise the bar another 10 percent for yield. That's how the yield enhancement is anticipated to grow over the next 10 years."

"It's a really exciting time, we're really pleased to have this Y Series coming out, a step change for us," he said. "With the high volume it should have a wonderful impact on the market. Certainly, there will be lots more things in the pipeline as we move forward." Δ