

The United Soybean Board's Better Bean Initiative: Building United States Soybean Competitiveness from the Inside Out

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Improving compositional quality traits for oil and protein content in soybeans has been a key factor in the industry for almost a decade. In order to build United States soybean competitiveness, the United Soybean Board and soybean checkoff have initiated an effort entitled the Better Bean Initiative (BBI) and its Technology Utilization Center (TUC) to explore and improve soybean composition. This article addresses current trends in US soybean production that have affected our global competitiveness and how the BBI can improve our overall competitiveness position and increase share of domestic and internal markets. The importance of identifying and addressing key end-user needs are also highlighted.

Key words: Better Bean Initiative (BBI), checkoff, composition, competitiveness, oil, protein, soybean(s), United Soybean Board (USB).

Background

The United Soybean Board (USB) consists of the 62 farmer-directors from 29 soybean-producing states that oversee the investments of the soybean checkoff. The checkoff collects 0.5% of the price of each bushel sold. Half of these funds are invested at the state level, where the soybeans are grown, and the other half is forwarded to USB. The farmer-directors who serve on USB invest soybean checkoff dollars in five key areas: (a) international marketing, (b) domestic marketing, (c) production research and coordination, (d) new uses development, and (e) communications.

The United Soybean Board first stepped up efforts to develop soybeans with improved compositional quality traits for oil and protein content in the mid-1990s. Health issues, global competition, and changing customer needs were beginning to alter the soybean marketplace. These initial efforts to explore soybean composition evolved into the Better Bean Initiative (BBI).

Goals & Strategies

The goal of the BBI is to enhance compositional traits targeting soybean meal and oil with the primary focus of meeting the needs of our customers and increasing the intrinsic value of US soybeans. US soybean meal and oil both have strong global reputations for high quality. However, US soybeans can maintain a competitive edge only if US producers are the first to develop and deliver through the BBI the enhanced composition traits now desired by customers. US soybean products face increasing competition from soybeans produced in other countries and from other crops such as canola and sun-

flower, as well as from synthetic meal-displacing additives.

In December 2002, USB approved a new BBI strategic plan that contained several specific goals: (a) identify oil and meal traits that improve quality, value, and competitiveness of US soybeans and research tools that can speed up development of soybeans with targeted BBI traits; (b) incorporate BBI compositional quality traits into elite commercial germplasm without reducing commercial yield or agronomic potential; (c) develop analytical standards and tools that accurately and reliably measure quality trait improvements that meet the needs of value chain participants; and (d) profile the impact of potential quality traits so the industry understands market size and dynamics and financial barriers when assessing BBI trait commercialization plans.

Composition

The strategic focus of the BBI includes continuous working with industry partners to identify oil and meal traits that increase the value and subsequent competitiveness of US soybeans. Identified compositional quality traits will be incorporated into elite commercial germplasm to meet the needs of end users. Current targeted traits include low saturates, low-linolenic fatty acid and mid-oleic levels in the finished oil, high protein content, higher metabolizable energy, and lower-phytate phosphorus. It is critical to ensure that the compositional improvements are not made at the expense of plant agronomics or yield.

Although enhancement of compositional traits will improve the intrinsic quality of US soybeans, the marketplace must recognize and compensate for the

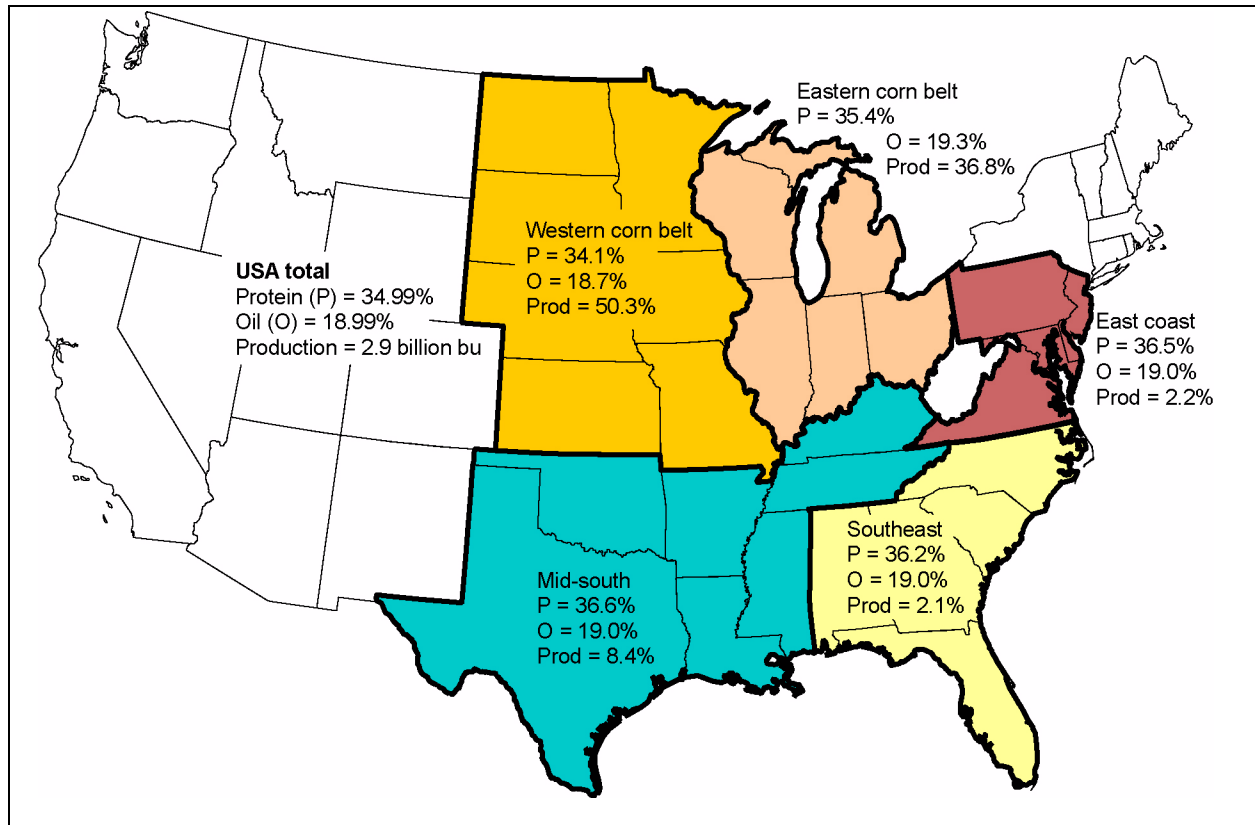


Figure 1. United States soybean quality and production.

enhanced traits throughout the value chain. Successful introduction of improved soybean quality traits will require active engagement of the industry. The soybean checkoff serves a key role as a catalyst throughout the value chain to initiate an industry coalition to aggressively commercialize enhanced compositional improvements.

Another factor driving US soybean farmers to target compositional improvements is the United States Food & Drug Administration's proposal for trans-fat labeling. The proposed regulation would require all food products to indicate trans-fat levels above 3.5g per serving. The deadline for regulation compliance will likely be January 2006.

As compositional traits are incorporated into elite commercial germplasm to meet customer needs, commercial yield and agronomic standards must also be maintained. A critical step in recognizing enhanced compositional traits throughout the entire value chain is ensuring that the trait can be measured accurately at each step in the value chain. The BBI is focused on development of analytical tools that accurately and reliably measure trait improvement levels. The BBI will

evaluate markets and gain industry support throughout the value chain for incorporation of compositional traits into commodity soybeans to ensure that all US soybean farmers benefit from these compositional improvements.

Domestic and International Competition

Many international and domestic customers demand a soybean that contains a total of 54% protein and oil, in order to produce a 48% (Hi-Pro) protein soybean meal. In recent years, there has been a significant decrease in soybean production in the south, where protein and oil levels are traditionally higher. As Figure 1 indicates, currently approximately 85% of our soybeans are produced in the midwest in lower maturity groups with lower protein levels. The western Corn Belt, which produces more than 50% of the soybean crop, is the area with the lowest protein and oil content.

This shift in US production, along with a continued focus on growing high-yielding soybeans with less regard for quality, is reducing the overall quality of the US soybean crop—thus affecting our global competitiveness.

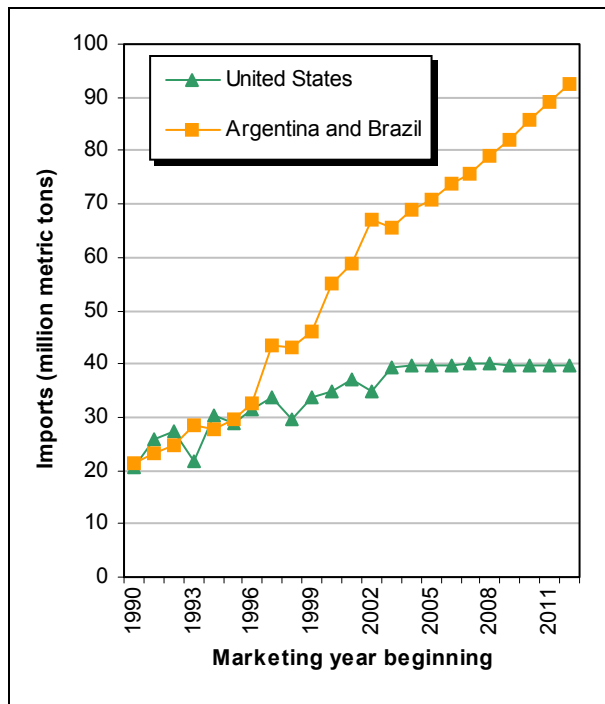


Figure 2. United States versus Argentina and Brazil soybean and soybean product exports (1990/91-2001/02) and USDA projections to 2012.

With limited acreage available for increasing production, US soybean production is expected to level off in the next decade. Brazil, on the other hand, has millions of untapped acres for soybean production. Brazilian soybean production is expected to increase 25-50% over the next 10 years. Although the United States cannot outcompete Brazil by outproducing it, being the first to develop and deliver soybeans with enhanced compositional traits desired by domestic and international customers will give US soybean farmers a competitive edge.

Figure 2 illustrates how much competition we have in South America when it comes to maintaining our share of the global market. South American production has shifted from Argentina to Brazil, where higher maturity group soybeans are grown.

Technology Utilization Center

Last year, USB and the soybean checkoff established the Technology Utilization Center (TUC)—a tool to help achieve BBI goals. The TUC was established to bring the soybean industry together to identify and incorporate key technologies to improve the composition of US soybeans.

The TUC will exist as a “virtual center” without bricks and mortar. A board of 22 directors, ranging from USB farmer-leaders to researchers, soybean processors, and end users, will oversee the TUC’s work. The USB chief executive officer will manage the center’s operations, and all TUC board members will be selected by USB. Through the TUC, industry leaders have an additional business platform they can use to work together to identify key market issues and jointly move forward to commercialize soybean technology that either currently exists or is being developed. Industry representatives from the public and private sectors are very supportive of the checkoff-funded BBI and TUC.

Previous contributions from key industry partners, such as Monsanto Company, are an example of how the TUC can bring together technology from the public and private sectors to benefit US soybean farmers. These tools should help BBI researchers breed plants more efficiently and accurately and shorten the timeline for development of higher quality varieties for US soybean farmers.

BBI Progress

Significant progress has been made toward achieving BBI objectives. For example, soybean checkoff farmer-leaders and staff have met with industry representatives from AGP, ADM, Bunge, Central Soya, Procter & Gamble, the US Department of Agriculture Agricultural Research Service (USDA ARS), and many others to determine optimal compositional traits for soybean meal and oil.

In 2001, the first variety developed through the BBI was harvested in North Carolina. This variety, developed by the USDA ARS through funding from the soybean checkoff, was designed to reduce the level of saturated fat and linolenic acid in soybean oil, thus reducing the need to hydrogenate the oil and making it more usable in certain food products. Some improvement was made, but more research is needed to meet food industry specifications.

During the summer of 2002, USB farmer-directors signed a formal Memorandum of Understanding with the USDA ARS to formalize a research partnership between the two organizations. The Memorandum of Understanding identifies the significance to both USB and the USDA ARS of improving the quality—and therefore the domestic and international competitiveness—of US soybeans.

Looking Forward

Domestic and international competition grows stronger each year. The United Soybean Board and soybean checkoff investments in activities such as the Better Bean Initiative and Technology Utilization Center provide an opportunity to improve our competitive position and increase share of domestic and internal markets. The Better Bean Initiative and Technology Utilization Center are not just soybean checkoff-driven initiatives, but a combined platform for industry and the checkoff to identify and address key end-user needs that will benefit the overall market. By choosing high-yielding soybean varieties that have good compositional quality, every US soybean farmer plays an important role in defining the value of the US soybean product.