

RESPONSES TO WRITTEN QUESTIONS FROM
THE SENATE COMMITTEE ON THE JUDICIARY's

September 20, 2016 Hearing

“Consolidation and Competition in the U.S. Seed and Agrochemical Industry”

Dr. Robert T. Fraley, Executive Vice President and
Chief Technology Officer, Monsanto

Question from Ranking Member Leahy to all Witnesses

1. All farmers, whether they use genetically engineered (GE)-traited technologies or not, are still looking for non-GE choices to expand their rotations and to seek higher value markets. Many of you have discussed the impact that the pending seed and chemical company mergers will have on innovation. Some have argued that the mergers will enhance innovation, and others that it will stifle innovation. Those who are concerned about less innovation if the mergers are approved have noted the difficulty in crafting a potential remedy for that concern, as questions about innovation present unique challenges that are far more complex than simply divesting existing businesses or product lines.
 - a. What are the potential opportunities and mechanisms for enhancing public plant breeding capacity to address the loss in diversity of seed choices for farmers, and the many needs of farmers that will not be addressed by the private sector, whether or not we continue to see mergers in seed companies?
 - b. As you consider the challenges farmers are facing today needing access to seeds that are well adapted to their farming systems, soils, and the changing climate, would you support additional investments in public research on diversification of seed stocks and publically available plant varieties in this country that could lead to greater genetic diversity?

Dr. Fraley's Response to Senator Leahy's Question

The challenge ahead is to help create a global food system that can feed the 10 billion people who will be on the planet by 2050. Moreover, some three billion more people will join the middle class, which along with the growing population is a combination that will require a 60% to 100% increase in food production. To meet that demand, society will have to produce more food than has been produced in the history of the world. As society works to meet that demand, there will be opportunities for the public sector to help meet the needs of farmers.

Monsanto supports additional investments in public research, particularly through enhanced research funding levels for the United States Department of Agriculture (USDA).

Additionally, Monsanto has played a strong leadership role in the funding of public research efforts. For example, in 2009, we donated 4,000 cotton molecular markers and associated information to Texas AgriLife Research, an agency of the Texas A&M System.

More recently, in June 2016, we donated our Leland Agronomy Center to the B.F. Smith Foundation, a nonprofit organization in the Mississippi Delta. Mississippi State University's Delta Research and Extension Center will use the greenhouse and laboratory space for plant breeding and other agronomic research aimed at accelerating the path toward better varieties of plant material adapted for the Mid-South region.

Question from Senator Blumenthal for Mr. Blome, Dr. Fraley, and Dr. Moss

1. Is there a risk that the significant debt Bayer is taking on to complete the acquisition of Monsanto (and avoid a shareholder vote on the deal) will result in significantly higher prices for consumers?
 - a. If not, please explain in detail how this would be avoided

Dr. Fraley's Response to Senator Blumenthal

As the company being acquired, Monsanto respectfully suggests that it is not in the best position to respond further to this question and defers to Bayer.

Question No. 1 from Senator Cruz to Dr. Fraley

Earlier this month, the Agricultural and Food Policy Center (AFPC) at Texas A&M University issued a report, "Effects of Proposed Mergers and Acquisitions Among Biotechnology Firms on Seed Prices." This report concludes that the proposed mergers between Dow and Dupont and Monsanto and Bayer will increase seed prices for corn, soybeans, and cotton. Notably, the report indicates that the price of cotton could increase by almost 20%. Do you have any response to these findings? Will seed prices increase? If not, what did the report get wrong?

Dr. Fraley's Response to Senator Cruz's First Question

The Monsanto-Bayer combination will be extensively reviewed by U.S. and global regulatory authorities. While the companies are complementary businesses with very little overlap, both companies do have cotton businesses. In our experience, the regulatory process has worked and we are confident that it will work again. We will work cooperatively with the relevant agency officials as this transaction is reviewed.

Question No. 2 from Senator Cruz to Dr. Fraley

In the last quarter century, the agricultural industry has consolidated dramatically into the “Big Six” companies that now control the market. With these proposed mergers, it looks like we’re heading toward a “Big Four.” In her written testimony, Dr. Moss states that the Dow/DuPont and Monsanto/Bayer mergers “will likely raise entry barriers for smaller innovators and increase the risk that they are foreclosed from access to technology and other resources needed to compete effectively.” Can you respond to this? How would these mergers affect the smaller businesses and entrepreneurs in Texas?

Dr. Fraley’s Response to Senator Cruz’s Second Question

We do not agree with Dr. Moss. Since the first biotechnology traits were launched in 1996, Monsanto has long been committed to the broad licensing of the technologies we develop. We did so because we decided early on that our technology would have far greater reach and provide much greater choices for farmers if it were broadly licensed. The Monsanto-Bayer deal, which will combine our research and development capabilities and resources, will result in more innovation, competition, and better products for growers.

Over the years, we have licensed our seeds and traits technology to over 200 companies around the world. This broad licensing has provided growers with the ability to choose the seeds they want. It has also created competition. For example, Ag Reliant is third largest seed company in the United States. It was founded about 15 years ago and has become one of the leading seed companies because of the ability to license technology. We are doing the same thing with our data science business and it has created an incredible opportunity for more technology.

Additionally, since 2003, approximately 15 companies have obtained de-regulated status for biotech traits, which were primarily focused on fighting pests and weeds in key crops. Since then, the competition has more than quadrupled, as 61 companies have now received permits enabling advanced development of new biotech traits -- and that is just for corn, cotton, soy, canola, rice, alfalfa, and sugarbeets. In fact, over 100 companies and public institutions have applied for over 2,000 permits for their own development efforts for biotech traits across all crops.

Innovation and competition goes beyond biotech traits. New tools, such as gene editing and advanced breeding technologies, are also delivering new native plant traits that provide improvements. Since 2010, nearly 30 companies have sought regulatory input for their new non-biotech traits, and several companies have already announced plans to commercialize this next wave of crops using these native plant traits.

Question No. 3 from Senator Cruz to Dr. Fraley

Several of the people I have spoken with in the farm and agricultural industry believe that effects stemming from these mergers should be reviewed collectively. If you disagree, could you please explain why?

Dr. Fraley's Response to Senator Cruz's Third Question

The antitrust regulators will review these proposed mergers in accordance with the applicable statutes, regulations, and case law. The regulators will examine them in the context of the factual circumstances that exist at the time of review and respond accordingly.

Question No. 4 from Senator Cruz to Dr. Fraley

The Wall Street Journal has noted that Federal Reserve policies after the financial crisis inflated asset prices, and more recently, that the end of Fed stimulus has led the dollar to rise sharply, which has given us falling prices in many farm commodities. We have seen this effect very clearly in Texas's energy industry, which has seen prices fall more than in half since 2014, hitting the entire regional economy. Do swings in commodity prices, specifically crop prices, have a negative impact on the agricultural industry as whole? Would it be better for your company to have a more stable dollar and more stable commodity prices? What role do Federal Reserve policies play when your company makes decisions, such as the decision to merge with another company?

Dr. Fraley's Response Senator Cruz's Fourth Question

We engage in manufacturing, seed production, research and development and sales in many parts of the world. Economic factors such as swings in commodity prices, and specifically crop prices, can negatively impact our business, our grower customers, and the rest of the agricultural industry. As required by the fiduciary duty owed to our shareholders, we account for these and many other factors in the development and execution of our business strategies.

To manufacture seed, we contract production with multiple growers at fair value and retain the seed in inventory until it is sold. These purchases constitute a significant portion of the manufacturing costs for our seeds. Additionally, our chemical manufacturing operations use chemical intermediates and energy, which are subject to increases in price as the costs of oil and natural gas increase.

Increases in commodity prices may negatively affect our cost of goods sold or cause us to increase seed or chemical prices, which could adversely affect our sales. Where practical, we use hedging strategies and raw material supply agreements that contain terms designed to mitigate the risk of short-term changes in commodity prices. However, we are unable to avoid the risk of medium- and long-term increases. Farmers' incomes are also affected by commodity prices; as a

result, fluctuations in commodity prices could have an impact on farmers' purchasing decisions and negatively affect their ability and decisions to purchase our seed and chemical products.

Our operations outside the United States are subject to special risks and restrictions, which include fluctuations in currency values and foreign-currency exchange rates. For example, our customers in weakened economies may be unable to purchase our products, or it could become more expensive for them to purchase imported products in their local currency or sell their commodity at prevailing international prices. Further, changes in exchange rates may affect our net income, the book value of our assets outside the United States, and our shareowners' equity.

Senator Perdue's Questions for all Company Witnesses

Over the last two decades the ag seed and chemical industry has seen a substantial increase in the cost and time of getting new technologies from discovery and development to farmers in the field. Studies have shown that it takes an average of 13 years and \$136 million to get new biotechnology registrations and 11 years and \$286 million to get new crop protection products to market. A large portion of these increased costs are from the increasingly complex federal regulatory framework.

- In what ways do federal regulations specifically impact your company's process from discovery to registration?
- In what ways could this regulatory burden be eased on your company?

Dr. Fraley's Response to Senator Perdue's Questions for all Company Witnesses

Monsanto has had experience working with regulatory agencies in nearly 60 countries around the world. In our experience, the U.S. Coordinated Framework remains the gold standard. However, it can be improved by being more predictive and adhering to regulatory timelines.

Another key challenge is that China does not begin its regulatory approval process for import approval until the country of the technology permit's origination has completed its regulatory process. Consequently, there are always delays and China becomes the final decision-maker on the approval of products.

As a company that invests \$1.5 billion annually in research and development, including cotton research in Tifton, Georgia, intellectual property is our lifeblood. Long regulatory delays result in delays in commercialization, which in turn impacts patent durability. Specifically, regulatory delays cause us to lose patent term life, which cannot be recovered under current law.

Regulatory delays also directly impact growers. Cotton and soybean growers in Georgia and across the country have been waiting for over six years (pending since April 2010) for a new technology to help combat weed resistance. This delay has caused them to incur additional input costs to combat weed resistance.

Senator Perdue's Question for Monsanto/Bayer

Growers in Georgia have expressed concern with consolidation in the industry and how that will affect their input costs. If the Bayer/Monsanto deal goes through, then the two companies would control over 70% of the Southeast cottonseed market.

- How would you address farmers' concerns with competitively priced inputs in the future with one company controlling this much of the market?

Dr. Fraley's Response to Senator Perdue's Question for Monsanto/Bayer

The Monsanto-Bayer combination will be extensively reviewed by U.S. and global regulatory authorities. While the companies are complementary businesses with very little overlap, both companies do have cotton businesses. In our experience, the regulatory process has worked and we are confident that it will work again. We will work cooperatively with the relevant agency officials as this transaction is reviewed.