**BEFORE THE SENATE JUDICIARY COMMITTEE**

**HEARING ON "CONSOLIDATION AND COMPETITION IN THE U.S. SEED AND AGROCHEMICAL INDUSTRY"**

**ANSWERS TO WRITTEN QUESTIONS**

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## Questions from Senator Grassley

**Are you familiar with S.3323, a bill I introduced to ensure American companies and consumers have a chance to prove up claims they may have against foreign state-owned entities? Do you believe that this bill will help American companies, farmers and consumers be on the same footing as foreign companies controlled by foreign sovereigns?**

Yes, I am familiar with S. 3323. I believe this bill would help American companies, farmers and consumers be on the same footing as foreign companies controlled by foreign sovereigns in certain circumstances. This is because it would hold foreign state-owned enterprises (SOEs) to the same standard as foreign private enterprises in those circumstances. Where a foreign SOE and an affiliate of the SOE have an "alter ego" relationship, the SOE may be capable of being sued for the acts of the affiliate under the commercial activity exception of the Foreign Sovereign Immunities Act (FSIA). However, if the corporate relationship between the SOE and its affiliate is sufficiently complex or opaque, a U.S. victim may be incapable of defeating an SOE's assertion of foreign sovereign immunity even when the SOE and affiliate do in fact have an "alter ego" relationship, and the commercial activity exception should otherwise apply.

In that instance, the SOE would seem to enjoy a unique advantage over a similarly situated private enterprise. Whereas a foreign private enterprise likely would have to defend against a U.S. victim's claim, the SOE may be able to rely on the presumption of immunity afforded by the FSIA for no reason other than the complexity or opacity of its corporate structuring. This creates an imbalance where U.S. victims are concerned. As I understand S. 3323, it would help rectify that imbalance by enabling suit where the SOE directly or indirectly owns a majority of shares of the affiliate.

What I find commendable about S. 3323 is that it implicitly recognizes the need for a nuanced approach, rather than relying on formalistic line drawing, when seeking to strike a balance between appropriately affording deference and respect to foreign sovereigns and inappropriately limiting the rights of U.S. victims of illicit conduct by foreign firms. Respect for comity principles is arguably more important than ever, but excessive deference to comity principles is also more dangerous than ever. The stakes have been raised in this era of free trade and globalization, because the risks and scope of harm to U.S. victims from conduct by foreign firms are higher than they have ever been. This is particularly true with respect to the staggering growth of international cartels, which often involve foreign firms engaging in conduct that causes direct, substantial, and foreseeable harm to businesses and consumers in the United States. Deciding questions of immunity and the extraterritorial reach of U.S. law through simplistic and formalistic line drawing is often dangerous and ineffective. A more nuanced approach that allows for consideration of facts and circumstances is the better course.

**You've previously indicated that any reallocation of share within the large incumbents through divestitures would create a game of market concentration "musical chairs," or would even further increase concentration in the industry. Why wouldn't divestiture or a conduct remedy be enough to address concerns with these proposed deals?**

Any merger in an already small field of rivals is more likely to substantially lessen competition. This is the case with the "Big 6" firms that compete in the markets for traits, seeds, and chemicals. An effective remedy is required to fully restore competition lost by a merger. Moreover, if an acceptable set of assets was in fact targeted for divestiture in a merger investigation, any viable buyer of such assets would need to possess the scale and scope to compete with remaining firms, have a demonstrated track record of competing at that level, and successfully maintain the divested assets.

A viable buyer of any to-be-divested assets would be difficult to find in a highly concentrated industry where firms are also integrated across traits, seeds, and chemicals. Were assets to be spun off to another Big 6 incumbent, it is unlikely that the divestiture would reduce the increase in market concentration attributable to the merger to within acceptable levels. Such a divestiture could in fact *increase* market concentration because of the already concentrated nature of the market.

The U.S. enforcement agencies have grappled with this fundamental problem in the recent challenged or abandoned mergers of Staples-Office Depot, Baker Hughs-Halliburton, and Sysco-U.S. Foods. Moreover, the list of past failed divestiture remedies in merger cases is growing. This demonstrates how difficult it is to "fix" mergers in highly concentrated industries. And, if a structural remedy, such as divestiture, would be difficult to craft in the current instance, then behavioral remedies are even more likely to be ineffective. Behavioral remedies do not eliminate the merged company's incentive or ability to exercise market power. They require significant monitoring and enforcement -- activities that the courts are not well suited to carry out.

**Some in the industry argue that head-to-head competition may be strengthened by virtue of companies like Monsanto and Syngenta having a stronger rival in the crop input market by virtue of Dow and DuPont merging. Do you agree with this assessment? Why or why not?**

I disagree with this rationale for merger. "Bulking up" to become a larger, stronger, or more equal sized player in response to rivals that have also bulked up is a dangerous reason to allow further mergers. This is particularly true of mergers in highly concentrated markets. There are several reasons for this.

One is that because of the recognized risks of higher concentration, Section 7 of the Clayton Act is designed to prevent mergers that may enhance market power and lead to anticompetitive effects. The importance of this "incipiency" doctrine cannot be overstated. Once a merger is consummated and a market thus restructured, both the merger and the market are difficult, if not impossible, to unscramble. Both courts and enforcers recognize the importance of stopping anticompetitive mergers in their incipiency.

Another reason is that there is no obvious "stopping" point for allowing successive mergers premised on the basis of bulking up to compete better with large rivals. Under this scenario, merger activity could continue until a market contained a very small number of equal sized rivals. This would enhance the probability of market outcomes determined by anticompetitive coordination, as opposed to robust, head-to-head competition. Finally, if the rationale for merger is to better

compete in light of Monsanto's long-standing dominance in some crop areas, then merger is the wrong enforcement "tool" to address any competitive problems relating to such dominance. Abuse of dominance should be addressed under Section 2 of the Sherman Act, not by using Section 7 to create a larger competitor.

Questions from Senator Leahy

Specific Questions

**The merging companies all argue that the proposed mergers would not negatively impact competition because each transaction combines one firm strong in seeds and traits with a firm strong in crop protection products. All of the companies testified that their particular transaction is "pro-competitive" because such consolidation would create efficiencies, allowing the post-merger companies to create more integrated products. This argument is similar to ones we have heard in a number of industries lately, including health insurers and telecommunications providers. In your view, is focusing primarily on the absence of overlapping product portfolios the correct view of how these mergers might impact competition?**

I do not believe that any claimed efficiencies such as combining 'complementary" packages of assets in the Dow-DuPont and Monsanto-Bayer mergers should be the major focus in a merger investigation. The Horizontal Merger Guidelines are clear that defendants bear a heavy burden in proving that any claimed cost-savings or consumer benefits (i.e., efficiencies) are merger-specific and cognizable and would countervail anticompetitive effects. As I noted in my testimony, these effects are potentially significant and are likely to emerge in three distinct ways.

First, the mergers would eliminate head-to-head competition in markets for certain crop seed and chemicals. Second, the mergers would eliminate competition in agricultural biotechnology innovation markets and reduce opportunities for procompetitive R&D collaborations. Third, the combinations would create "platforms" that are likely to be engineered for the purpose of creating exclusive packages of traits, seeds and chemicals that do not "interoperate" with rival products. Economic evidence indicates that soybean and cottonseed prices under vertical integration tend to be higher than under licensing arrangements across firms. Moreover, integration 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.

The types of efficiencies claimed by the companies will likely be difficult to prove. Realizing any efficiencies associated with the packaging of complementary traits, seed, and chemicals assets will depend critically on the projected success of integration, managerial oversight, and execution of cost-savings and product development plans. However, there is a growing record of efficiencies claims in merger cases (e.g., airlines) that have never panned out. Moreover, evidence from the management consulting literature demonstrates that managers have great difficulty in realizing claimed efficiencies in mergers.

**What impact would the creation of more integrated products within one company have on the market for cross-licensing of seeds and traits that currently dominates the seed industry?**

I believe that the creation of more vertical integration within the agricultural biotechnology industry could have potentially negative consequences for important pro-competitive cross-licensing opportunities. As I noted in my testimony, opportunities for pro-competitive collaborations in biotechnology will shrink with the elimination of competition between Dow and DuPont and Monsanto and Bayer as standalone rivals. All four companies engage in significant activity in cross-licensing their technologies to create new stacks in corn, soybeans, and cotton.

Moreover, the mergers would result in more tightly integrated platforms of traits, seed, and chemicals components. These platforms will be bound together both economically and technologically for the potential purpose of creating exclusive packages of traits, seeds and chemicals that do not "interoperate" with rival products. Together, these effects will reduce the ability and incentive for firms to innovate, with adverse effects on competition, farmers, and consumers through higher prices, less innovation, and less choice.

**The focus of most of the genetically engineered (GE) traits used in the market today is to build pesticide resistance into the crops in a way that has resulted in a surge in pesticide, which in turn has led to an increased problem with herbicide-resistant weeds, so-called "superweeds," that has been blamed for an even greater surge of pesticide use. Given this fact, <u>what is the potential for these transactions to exacerbate anti-competitive conflicts of interests whereby farmers must buy expensive pesticide-linked seeds from a firm that sells those same pesticides, and has the market power to increase the price of both those seeds and chemicals?</u>**

The proposed mergers have the potential to worsen the degree to which farmers are locked in to a smaller number of proprietary systems of traits, seeds, and chemicals. As I noted in my testimony, current merger proposals involving the Big 6 are arguably motivated by the drive to develop integrated, exclusive portfolios of traits, seeds and chemicals. As one farmer we interviewed noted of being locked into a single platform "[I] can't mix chemicals with other companies' products to remedy Roundup resistance." Should the Dow-DuPont and Monsanto-Bayer mergers proceed, more integrated traits-seeds-chemicals platforms would likely raise entry barriers for smaller rivals and increase the risk that they are foreclosed from access to technology and other resources needed to compete effectively. This could result in less choice, higher prices, and even greater weed and insect resistance problems.

**I see many similarities and parallels between these proposed mergers and the consolidation and concentrated and coordinated ownership we have had in the dairy sector in recent years. Many blame that consolidation for the unsustainably low prices paid to dairy farmers in this country and in my home state of Vermont. In the case of dairy, it has meant far fewer buyers in the marketplace that has put dairy farmers against each other in a never-ending search for lower milk prices. <u>In considering these proposed transactions and the increased consolidation they will bring to the seed and crop protection markets, what can we do to protect farmers and consumers from the challenges that have plagued the dairy industry?</u>**

Agricultural producers (e.g., growers and ranchers) have been "squeezed" by ongoing consolidation in the food and agricultural supply chains. Consolidation in upstream agricultural input sectors such

as seed and fertilizer raises the specter of higher input prices for producers. At the same time, consolidation downstream in processing, food manufacturing, and retail grocery creates powerful buyers of agricultural commodities that push down the prices that producers receive. The proposed mergers risk further "squeezing" producers.

For example, technology fees represent a significant proportion of seed costs. The U.S. Department of Agriculture notes that the prices of farm inputs, led by crop seed, generally have risen faster over the last 20 years than the prices U.S. farmers have received for their crops and livestock. Seed price increases also have outpaced yield increases over time—the very problem that biotechnology is purportedly designed to solve.

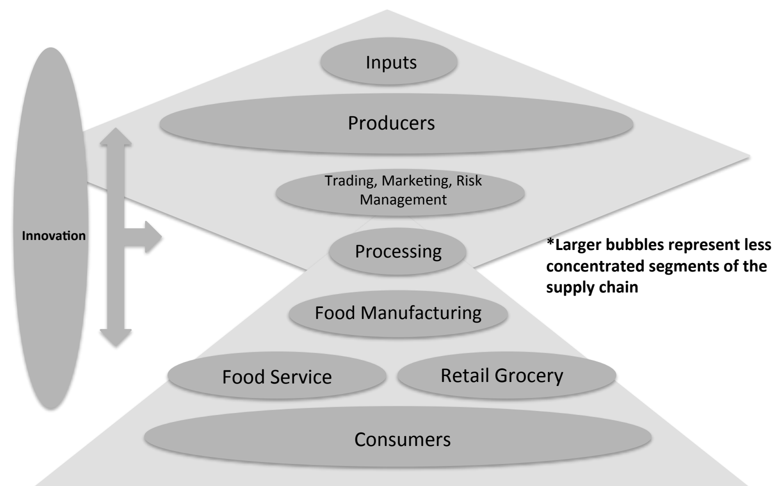
Protecting farmers and consumers will require more vigorous antitrust enforcement than what we have seen in the past. Maintaining competition in input markets and in the markets into which producers sell their commodities will reduce the potential for squeezing agricultural producers. This includes enforcement on the merger front, but also in enforcing the antitrust laws in regard to collusion and exclusionary practices.

Questions from Senator Blumenthal

**Can you outline the path that would take us from these acts of consolidation to American consumers paying higher prices at the grocery store?**

Numerous supply chains populate agriculture, ranging from grains, to fruits and vegetables, meat, poultry, and milk. Agricultural input markets such as fertilizers, chemicals, and crop seed, are particularly important for growers. The Figure below depicts a generalized food/agricultural supply chain. Innovation is shown to the left because it affects most stages in the chain. At the top are input markets, which include products such as crop seed, fertilizers, and agricultural chemicals. Many of these markets have been the subject of significant competitive concerns, including consolidation, anticompetitive coordination, and exclusionary conduct. In a seminal 2011 report, for example, the U.S. Department of Agriculture highlighted growing concentration in key agricultural input markets – crop seed and biotechnology, agricultural chemicals, farm machinery, animal health, and animal genetics.

As discussed in my testimony, the proposed mergers of Dow-DuPont and Monsanto-Bayer threaten to reduce head-to-head competition in seed and R&D markets. Such reductions in competition give fewer players more incentive and ability to exercise market power by increasing technology fees and seed prices, reducing choice through less innovation, raising entry barriers to smaller innovators, and stifling competition in the conventional and hybrid seed industry. These effects are borne by farmers and by consumers who could likely see fewer choices in the grocery store and pay higher prices for some food products.




**Can you explain how mergers of companies that do not directly compete in selling individual products can reduce research and development?**

Much like in pharmaceuticals, R&D programs in agricultural biotechnology create the "capacity"

to innovate in any number of different product areas. Economies of scale, scope, and coordination in R&D support the development, testing, and potential commercialization of a variety of ultimate products across a variety of crop areas. This is true even if individual companies do not compete head-to-head in particular product markets. The current broad R&D pipelines for any of the merging companies (Dow, DuPont, Monsanto, and Bayer) demonstrate this point. The effect of the Dow-DuPont and Monsanto-Bayer mergers would be to reduce the number of major R&D programs in the agricultural biotechnology industry from six to four, significantly reducing competition in innovation markets.

**How would the negative effects of reducing head-to-head R&D outweigh any potential benefit of companies eliminating what they term "duplicative R&D programs"?**

Maintaining standalone competition in R&D is essential for ensuring that incentives remain strong to continue existing and prospective product development programs. Such competition is particularly crucial for innovation in an industry, such as agricultural biotechnology, where the probability of commercial success is relatively low. Data on genetic events approved in the U.S. illustrate that Dow, DuPont, Monsanto, and Bayer account for a significant portion of innovation in important traits in corn, soybeans, and cotton. It is also clear that they compete head-to-head in these markets as independent rivals. Eliminating "parallel path" R&D programs is therefore likely to have anticompetitive effects in innovation markets -- effects that are unlikely to be outweighed by any cost savings from eliminating duplicative R&D programs.

**Can you explain why you believe a merger of companies operating in different fields – for example, crop protection for one company and seeds and traits for the other – can harm consumers?**

Past mergers in biotechnology have increased vertical integration among traits, seeds and chemicals. Current merger proposals involving the Big 6 are arguably even more motivated by the drive to develop "integrated" portfolios of traits, seeds and chemicals. The proposed mergers would vertically integrate traits, seeds and chemicals currently produced independently by Dow and DuPont and Monsanto and Bayer. The result will be more tightly integrated platforms of components that are bound together both economically and technologically for the potential purpose of creating exclusive packages of traits, seeds and chemicals that do not "interoperate" with rival products.

Vertically integrated Dow-DuPont and Monsanto-Bayer traits-seeds-chemicals platforms would likely raise entry barriers for smaller rivals and increase the risk that they are foreclosed from access to technology and other resources needed to compete effectively. Moreover, economic evidence indicates that soybean and cottonseed prices under vertical integration tend to be higher than under licensing arrangements across firms. All of these effects increase the probability that innovation and choice will decline and technology and seed prices will rise. These outcomes would adversely affect farmers, but also ultimate consumers of food products.

**Can you outline the risks to consumers when a company that is already dominant in one area merges with a company that has a strong presence in another area?**

Integrating assets of firms that are dominant in particular areas (e.g., traits, seed, or chemicals),

particularly in highly concentrated markets, will have the effect of creating systems or platforms of traits-seed-chemicals. As I noted in my testimony, this is a strong motivation for this type of integration behind the current proposed mergers, as well as the threat that such systems will create proprietary, non-interoperable packages of products. The higher entry barriers raised by increased integration will increase the risk that smaller innovators are foreclosed from access to technology and other resources needed to compete effectively. These effects could be felt by consumers in the form of higher food prices and less choice.

**Are there particular risks of this kind of merger in the agriculture space, where companies can engineer their products in ways that limit farmers' ability to shop around?**

With more competition, firms would arguably have greater incentives to engage in pro-competitive R&D ventures (e.g., stacking of traits) and to create systems of traits, seeds, and chemicals that interoperate with rivals' products. But in markets where there are already few competitors, the proposed mergers will not only increase incentives to move toward integrated, non-interoperable proprietary systems, but will substantially reduce the number of systems that could compete head-to-head. This limits choice for farmers, exacerbates weed and insect resistance, and stifles alternative, conventional seed systems.

Questions from Senator Cruz

**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 your written testimony, you state 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 expand on this?**

Yes. As I noted in my testimony, the proposed mergers would vertically integrate traits, seeds and chemicals currently produced independently by Dow and DuPont and Monsanto and Bayer. The result will be more tightly integrated platforms of components that are bound together both economically and technologically for the potential purpose of creating exclusive packages of traits, seeds and chemicals that do not "interoperate" with rival products. This would likely raise entry barriers for smaller rivals and increase the risk that they are foreclosed from access to technology and other resources needed to compete effectively. In other words, if the larger, merged firms are producing packages of traits, seeds, and chemicals, there will be fewer opportunities for smaller rivals innovating in only in one or two markets to collaborate or to gain a foothold in markets.

**How would these mergers affect the smaller businesses and entrepreneurs in Texas?**

I believe that by raising entry barriers to smaller rivals in the agricultural biotechnology markets, the proposed mergers will reduce incentives for entrepreneurship, innovation, and market entry by those firms. This type of activity is a vital component of competition and economic growth and, among other things, could well affect economic development in local agricultural areas such as Texas.

**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. Do you agree or disagree?**

I agree. Much like in the recent health insurance mergers challenged by the U.S. Department of Justice, the fundamental reshaping of the landscape in agricultural biotechnology that would be accomplished by the Dow-DuPont and Monsanto-Bayer mergers strongly cautions against evaluating them in a vacuum. The antitrust agencies should, and most likely will, evaluate their likely competitive effects on a standalone basis, as well as together. This type of "scenario" analysis is vital for determining the mergers' individual and collective effects on affected markets.