



**Statement of Sarah Carden
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**Prepared for the U.S. Department of Agriculture Listening Session on
Competition and the Intellectual Property System: Seeds and Other
Agricultural Inputs**

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My name is Sarah Carden and I am a policy advocate with Farm Action, a farmer-led advocacy organization working to build a food and agriculture system that works for everyday people instead of a handful of powerful corporations. Our network includes farmers, ranchers, rural community leaders, food system workers, and policymakers.

I'm going to focus on two primary subjects today. The first is how consolidation across the seed, agrochemical, and digital farming industries has disempowered farmers and robbed rural communities of their independence. The second is what USDA should do about it.

As the American Antitrust Institute detailed in its recent comments to USDA on competition in seed and other agricultural input markets, a tight oligopoly of three mega-firms now controls the agricultural biotechnology industry. The "Big Three" are the product of a spate of mergers that occurred between dominant incumbents in the late 2010s — between Bayer and Monsanto in 2018, Dow and DuPont in 2017, and ChemChina and Syngenta in 2018.

These six giants were themselves the result of two previous waves of consolidation in the industry. Between the 1980s and the late 2000s, the Big Six acquired the vast majority of conventional and hybrid seed-breeding companies — locking in the intellectual property from their seeds and germplasm. At the same time, they negotiated exclusive contracts with agriculture universities to access their germplasm and obtained germplasm from international seed collections.

In this most recent wave of consolidation, the Big Three have further tightened their grip on the seed supply by sharply consolidating control over transgenic traits, transgenic seeds, and crop protection chemicals — tying these products together into proprietary "systems" that do not interoperate with alternatives. The Big Three have also swept up digital farming startups and amassed unprecedented quantities of data about what farmers are doing around the clock — both on a field-by-field and crop-by-crop basis.

The result has been a seed and agrochemicals "market" — if it can be called that — in which farmers are increasingly told what seeds they can plant, what chemicals they can spray, what techniques they have to use, and how much they're going to pay for all of it.

Over the past three decades, the Big Three and their predecessors have either cut back on non-biotech seeds or dropped them entirely — dramatically reducing the availability of conventional seeds and region-specific seed varieties for commodity crops. Simultaneously, the widespread adoption of crops with herbicide-tolerant and insect-resistant transgenic traits since 1996 has fostered the emergence of herbicide-resistant weeds and trait-resistant insects. As this dynamic has reduced the effectiveness of early transgenic technologies, the dominant seed companies have promoted a narrow portfolio of integrated crop systems to be their replacement.

But these systems have not reflected innovative chemistries, modes of action, or other technologies for selective weed or insect control. Instead, they have paired the same broad-spectrum herbicide chemistries we've been using since the last century — marginally differentiated and re-patented, of course — with “next-generation” seeds designed to combat resistance with more expensive and complex traits. In this way, these systems essentially “patch” declining crop effectiveness, but they do so with “solutions” that will almost certainly spur the evolution of *new* resistant traits in weeds and insects — which, in turn, will make those “solutions” obsolete and require farmers to purchase the next edition of their supplier's crop systems.

In this context, commodity-crop farmers have become structurally disempowered. The extreme consolidation in the seed industry means there are few, if any, practical alternatives for commodity farmers facing resistant weeds and insects other than buying into one of the Big Three's crop systems. And once they do, it is exceedingly difficult for them to get out. Since the Big Three have integrated traits, seeds, and agrochemicals, the ability of farmers to mix and match these products from different suppliers has become limited. At the same time, switching between entire systems involves substantial costs, operational changes, and cropping risks — not to mention the risk of getting sued by one of the seed companies for somehow violating their terms of use.

All of these factors and others we don't have time to go into — like herbicide drift and defensive planting — have caused commodity farmers to become increasingly locked-in to using the seed oligopoly's crop systems. And the seed giants haven't been shy about exploiting their market power. Over the past 20 years, intrusive data collection has been normalized. The price of seeds has risen faster than the price of any other farm input. Farmers have been required to hand over the rights to enormous amounts of previously proprietary, private, or untapped farming data without compensation. And in recent years, the Big Three have begun using this data to gauge farmers' ability to pay and adjust their prices to extract the maximum profits possible.

This situation is bad enough. But it's also about to get much worse. In 2019, Bayer rolled out the first “outcome-based” seed pricing program — introducing tournament-style price discrimination and micro-management into commodity farming for the first time. Since then, the other two seed giants have followed Bayer's lead and introduced their own “outcome-based” programs. Instead of charging a flat rate for seeds or agrochemicals, under these programs the seed companies sell their products based on a performance guarantee, such as a specific crop yield or level of weed reduction. If the products underperform, the company has to refund part of

the cost to the farmer. But if the products overperform, the farmer has to pay the company a share of their additional profits — potentially as much as 50 percent.

These programs may seem like benign risk- and profit-sharing arrangements, but in reality they create a highly pernicious imbalance of power between participating farmers and the seed companies. Farmers who participate in outcome-based pricing programs are required to join their seed company's digital agriculture platform and comply with its prescriptions (“management recommendations”) of seeds, chemicals, and techniques. By joining a seed company's digital service, farmers give the company unprecedented visibility into their operations — enabling the company to engage in highly intrusive monitoring of their farming practices and to learn sensitive information about their crop's profitability. In contrast, participating farmers are given zero visibility into the “black box” of algorithms and internal systems that the seed companies use to establish the guaranteed performance level, develop farming prescriptions, or determine whether farmers have complied with them. The result is an asymmetry of information in which farmers have no option but to trust the seed companies and follow their orders — and exercise ever-diminishing control over their own operations.

If this sounds familiar, it is because the seed market is apparently being chickenized. That is what's coming. Just as poultry integrators have robbed chicken farmers of their right to make independent decisions about their own operations, so too are seed companies commandeering control of crop farmers' operations. Seed companies are pushing farmers to participate in systems that lock them, not only into buying certain products, but also into surrendering ever more of their privacy and data — which only gives those companies more control.

Communities that were once composed of independent farmers who decided which products to use and which businesses to support will evolve into communities that sharecrop for the Big Three. Similar to poultry growers, they will have little to no control over which products to buy or how to use them. Instead, they will be forced to follow the prescriptions of digital agricultural platforms managed by the same giant companies producing their seeds and agrochemical products. Farmers will no longer be supporting local businesses but instead funneling all of their expenses (and a portion of their profits) to the very corporations that have subjugated them.

Unless the Biden Administration does something about the consolidated structure of this industry, this is the future we're staring at.

The oligopolists won't wake up one day and start vigorously competing with each other just because it's the right thing to do. In fact, a recent Deloitte report about the industry made clear (a) that is not what they are doing, (b) that is not what they plan to do, and (c) that is not what they should do if they know what's good for them. Nor is an upstart competitor going to come to the rescue anytime soon. The barriers to entry are too high and they stretch across four different levels of production — transgenic traits, seeds, crop protection chemicals, and digital agricultural platforms. Even if a competitor did somehow threaten the Big Three's dominance, the Big Three would have no shortage of levers they could pull to suppress that competitor — and more than enough money to buy them out.

Against this background, we believe the USDA’s upcoming report should plainly recognize that monopoly power has become entrenched in seed and agrochemicals. We also believe USDA should recommend a number of aggressive actions under the antitrust laws to restore competition and prevent abuse of market power in the industry. Specifically, we urge the USDA to invite the FTC and DOJ to collaborate on the following five initiatives:

- **First:** A thorough 6(f) investigation into the Big Three; the mechanisms by which they have consolidated and exercised power across the agricultural biotechnology sector; and the effects of that power on farmers, competing firms, distributors, suppliers, and other stakeholders.
- **Second:** An enforcement program focused on investigating and prosecuting the Big Three’s use of tying arrangements, exclusive dealing, and commercial discrimination in violation of the Clayton Act.
- **Third:** An enforcement program dedicated to blocking all further mergers or acquisitions attempted by the Big Three — including those below the reporting threshold — for “tending to create a monopoly” in violation of Section 7 of the Clayton Act.
- **Fourth:** A rulemaking process under Section 5 of the Federal Trade Commission Act to define and prohibit “unfair methods of competition” in the seed and agrochemical industry. In particular, we believe the agencies should promulgate rules that would constrain the ability of dominant incumbents to: (a) tacitly collude; (b) discriminate between farmers in prices or services; (c) integrate or bundle products; (d) obstruct data portability; (e) offer biotech products that are non-interoperable with rival products; or (f) withhold or restrict IP licensing to competitors and other stakeholders.
- **Finally:** An effort to challenge the Big Three’s monopoly power directly — either by seeking break-ups under the Sherman Act or by seeking to unwind the most significant seed-and-agrochemical mergers of the last decade under Section 7 of the Clayton Act.

Thank you again for holding this listening session and for the opportunity to raise these issues.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sarah Carden', with a stylized flourish at the end.

Sarah Carden
Farm Action