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Patent Exhaustion and Self-Replicating Technologies: What Might the Supreme Court Say?

By Matthew A. Chivvis, Rachel Krevans, and Michael R. Ward

In *Bowman v. Monsanto*, the Supreme Court recently requested the views of the Solicitor General on whether to grant certiorari. The question presented has two issues, one narrow and one broad: “Whether the Federal Circuit erred by (1) refusing to find patent exhaustion in patented seeds even after an authorized sale and by (2) creating an exception to the doctrine of patent exhaustion for self-replicating technologies?” While the first issue could directly affect the practices of major seed producers worldwide, the second has the potential to impact the entire biotechnology industry.

BACKGROUND

Patented seed technologies are in part responsible for the vast increase in U.S. farm productivity over the past several decades.¹ Indeed, the majority of all corn, soybean, and cotton produced in the U.S. these days was grown from seed developed as the result of either scientific breeding methods, genetic engineering, or both.² The seed industry is now worth more than \$25 billion worldwide.³ Major seed companies include Pioneer Hi-Bred (a subsidiary of DuPont), Monsanto, and Syngenta among others.

The *Bowman* case involves a seed-purchasing customer’s use of a transgenic “Roundup Ready®” seed variety first invented and developed by Monsanto.⁴ Monsanto’s Roundup Ready® technology includes seeds for growing corn, soybeans, and other crops that exhibit resistance to an herbicide known as glyphosate.⁵ Glyphosate is rated “least dangerous” compared to other herbicides and pesticides because it does not bioaccumulate and breaks down readily in the environment.⁶ Thus, it had long been a goal in crop science research to develop crop varieties with glyphosate resistance. Monsanto achieved this in soybeans by using the cauliflower mosaic virus (a virus capable of infecting plants) to create a vector for incorporating chimeric genes into soybean germplasm.⁷ The chimeric genes were derived in part from a strain of *Argobacterium* that exhibited glyphosate resistance. Transgenic plants expressing the chimeric genes are also resistant to glyphosate, which allows farmers growing the transgenic plants to use less herbicide, as the glyphosate specifically targets the non-transgenic weeds.

Vernan H. Bowman is an Indiana soybean grower who signed a technology agreement allowing him to purchase

¹ USDA: The Seed Industry in U.S. Agriculture / AIB-786.

² *Id.*

³ *Id.*

⁴ *Monsanto Co. v. Bowman*, 657 F.3d 1341, 1343 (Fed. Cir. 2011).

⁵ *See id.*

⁶ EPA R.E.D. Facts: Glyphosate / EPA-738-F-93-011.

⁷ *Monsanto*, 657 F.3d at 1343-44.

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“Roundup Ready®” soybean seeds⁸ from Pioneer Hi-Bred, an authorized seed producer of Monsanto’s and a seed developer in its own right.⁹ Mr. Bowman planted seeds purchased pursuant to the technology agreement from 1999-2007 as his first yearly planting. While the technology agreement forbade saving seeds for use in replanting, it did allow the unrestricted sale of harvested soybeans (*i.e.*, the seeds) as a commodity to grain elevators. In fact, 94% of soybeans sold into commodity markets in Indiana in 2007 used Monsanto’s Roundup Ready® technology. Starting in 1999, Mr. Bowman — in addition to the seeds he purchased from Pioneer Hi-Bred for his first yearly planting — also began purchasing commodity soybean seeds from a grain elevator for a second yearly planting. He found that these seeds showed the same herbicide resistance as Roundup Ready® soybean seeds, and began saving these seeds for subsequent second plantings.¹⁰ Mr. Bowman was candid with Monsanto about his purchase and use of commodity soybean seeds. Monsanto investigated and found that the unlicensed seeds Mr. Bowman was using for his second plantings contained Monsanto’s patented technology. It then sued for patent infringement. The district court granted summary judgment of infringement for Monsanto, awarding \$84,456.20 in damages.¹¹

THE DECISION OF THE COURT OF APPEAL FOR THE FEDERAL CIRCUIT

On appeal, Mr. Bowman’s principal argument was that, under the Supreme Court’s decision in *Quanta v. LGE*, patent exhaustion applies to the authorized sale of seeds into commodity markets and any downstream product of purchases from those markets that “substantially embodies” the same characteristics (*e.g.*, plants and seeds grown from the commodity seeds).¹² In *Quanta*, the Supreme Court held that authorized sales of computer chips substantially embodying LGE’s patented technology exhausted its right to sue for infringement as to products (*e.g.*, computers) that incorporated those same chips.¹³

Monsanto took the position that its technology agreement explicitly did not permit either the saving of harvested soybean seeds or the sale of those seeds for planting purposes. Additionally, Monsanto argued that Mr. Bowman was liable for infringement by planting commodity seeds because patent protection is independently applicable to each generation of soybeans (or any other crop) that “contains the patented trait.”¹⁴ The Federal Circuit affirmed, noting that “[a]pplying the first sale doctrine to subsequent generations of self-replicating technology would eviscerate the rights of the patent holder.”¹⁵ Thus, the Court found that “[e]ven if Monsanto’s patent rights in the commodity seeds are exhausted, such a conclusion would be of no consequence because once a grower, like Bowman, plants the commodity seeds containing Monsanto’s Roundup Ready® technology and the next generation of seed develops, the grower has created a newly infringing article” to which the patent exhaustion doctrine does not apply.¹⁶

⁸ Soybean seeds are the “beans” from the soybean plant. Thus, like corn, the commodity end-product of farm production can be used to grow subsequent harvests, though yields may decrease due to lack of hybrid vigor for certain varieties.

⁹ *Monsanto*, 657 F.3d at 1345.

¹⁰ *Id.* at 1346.

¹¹ *Id.*

¹² *Id.* (citing *Quanta Computer, Inc. v. LG Electronics, Inc.*, 553 U.S. 617 (2008)).

¹³ *Quanta*, 553 U.S. at 633-34.

¹⁴ *Monsanto*, 657 F.3d at 1347.

¹⁵ *Id.* at 1348.

¹⁶ *Id.*

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IMPLICATIONS OF MR. BOWMAN'S PETITION FOR CERTIORARI

The Supreme Court's decision to invite the views of the Solicitor General on Mr. Bowman's petition for certiorari suggests that it has taken an interest in the case. In *McFarling v. Monsanto*, the petitioner requested that the Supreme Court review similar but distinct issues concerning unlawful extension of the patent monopoly. There, the Solicitor General suggested that "the novel question whether (and, if so, to what extent) the patent-exhaustion doctrine applies to restrictions on the use of a materially identical patented product that was produced by the patented product sold by the patentee" was not yet ready for review because "it would be beneficial to have a fully considered resolution of that question in the lower courts."¹⁷ After receiving the views of the Solicitor General, the Supreme Court denied review. Mr. Bowman argues in his petition that now there has been a fully considered resolution of patent exhaustion in this context, and the Federal Circuit has misapplied the law.¹⁸

If certiorari is granted, it could have implications for more than just the seed industry. Indeed, when the Federal Circuit referred to "self-replicating" technologies in the *Bowman* opinion, it did not limit its finding to seeds. Thus, the opinion does more than just strengthen protection for transgenic plants. The biotechnology industry is replete with examples of self-replicating technologies, including novel DNA sequences, virus strains, microorganisms, and cell lines. Even the oil-eating bacteria that were the subject of the Supreme Court's seminal decision in *Diamond v. Chakrabarty*¹⁹ — and that are now commonly sold through retail channels — were "self replicating." If the Supreme Court reverses the Federal Circuit on the question of whether there is "an exception to the doctrine of patent exhaustion for self-replicating technologies," then competitors and consumers may be able to avoid patent infringement by growing, or otherwise duplicating a patented article from as little as a single sample purchased in the stream of commerce. Though the implications for the patented seed industry are fairly obvious as the Federal Circuit made clear in *Bowman*,²⁰ any change in the law could affect other industries as well. Accordingly, clients with novel self-replicating technologies that are (or could be) subject to commercial sales will want to work closely with counsel to protect their business investments, in case the Supreme Court expands the scope of patent exhaustion with respect to these kinds of inventions.

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¹⁷ *McFarling v. Monsanto*, No. 04-31, Brief of the United States as Amicus Curiae at 14 n.8 (U.S. 2005).

¹⁸ *Bowman v. Monsanto*, No. 11-796, Petition for Writ of Certiorari (U.S. 2011).

¹⁹ *Diamond v. Chakrabarty*, 447 U. S. 303 (1980).

²⁰ *Monsanto*, 657 F.3d at 1348.

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