

## DIGGING UP THE DIRT: CHINA'S EXPLOITATION OF TRANSGENIC SEED APPROVALS

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*In 2013, China rejected shipments of U.S. corn imports due to the presence of an unapproved transgenic trait, creating an international trade disruption that sent ripples throughout the U.S. agriculture industry and grain markets. Syngenta, the seed company that began selling the trait to U.S. farmers prior to receiving China's import approval, largely shouldered the blame. U.S. farmers held Syngenta singularly liable and initiated a class action in an attempt to force Syngenta to pay for the drop in grain prices due to the disruption. The highly publicized domestic legal dispute left China's opportunistic actions largely unnoticed. The time has come to provide context to the circumstances surrounding China's actions in the 2013 trade fiasco. The United States can no longer ignore China's international trade violations, especially in light of the drastic consequences of the class action lawsuit. Holding Syngenta liable without addressing China's delinquent regulatory system will set a dangerous precedent for seed companies and threaten the future of agricultural innovation. This Comment argues that the United States should file a World Trade Organization complaint against China for its violations of international trade agreements to ensure that agricultural technology companies can make informed commercialization decisions and deliver U.S. farmers needed*

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*products without fear of future international trade disruptions.*

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## INTRODUCTION

John Denver once said, “life on the farm is kinda laid

back.”<sup>1</sup> But rising production costs and falling commodity prices have many farmers wondering how much longer they can stave off creditors and keep the family farm above water, which suggests that the farmers are no longer as stress-free as they once were. In fact, many grain farmers across the country are operating on increasingly thin margins (some even negative margins).<sup>2</sup> During these times, unexpected swings in prices can mean big impacts on a farm’s bottom line.<sup>3</sup> This scenario played out for corn farmers in 2013 when China’s rejection of U.S. corn shipments led to an unexpected drop in domestic corn prices.

In late 2013 China rejected multiple shipments of U.S. corn because of the presence of a transgenic trait that China had not yet approved.<sup>4</sup> Because of the presence of this transgenic trait, China also cancelled future corn shipments effectively banning import of all U.S. corn.<sup>5</sup> The loss of the Chinese market reduced export demand for U.S. corn and caused corn prices in the United States to plummet.<sup>6</sup> Corn prices dropped eleven cents per bushel as news of the rejected

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1. JOHN DENVER, *Thank God I'm A Country Boy*, on *BACK HOME AGAIN* (RCA Records 1974).

2. David Kohl, *Decision Making with Negative Margins*, *CORN+SOYBEAN DIG.* (Jan. 13, 2015), <http://cornandsoybeandigest.com/blog/decision-making-negative-margins-part-1> [<http://perma.cc/KE4Y-HWN8>].

3. Barclay Rogers, *Making Agtech Matter in Today's Agricultural Economy*, *AGFUNDERNEWS* (July 5, 2016), <https://agfundernews.com/making-agtech-matter-in-todays-agricultural-economy.html> [<http://perma.cc/H4QJ-QG7A>] (“[A] 6% increase in either yield or price would be sufficient to move from an operating loss to break even”). Farmers determine cost of production for a crop by breaking down input costs to arrive at a cost per acre of production figure. Brent Gloy, *2016 USDA Cost of Production Forecasts Point to More of the Same for U.S. Farmers*, *AGRIC. ECON. INSIGHTS*, <http://ageconomists.com/2015/08/03/2016-usda-cost-of-production-forecasts-point-to-more-of-the-same-for-u-s-farmers/> (last visited Nov. 1, 2016) [<http://perma.cc/2X7G-PPQ5>]. Using trend yields, the cost per acre can be further broken down to calculate a per-bushel cost of production. *Id.* Grain prices are provided in a per-bushel figure so once the farmer has a set cost of production per bushel, the bottom line profit becomes the difference between the per-bushel cost of production and the per bushel market price. *Id.* tbl.1.

4. Tom Polansek, *China's Rejection of GMO Corn Has Cost U.S. up to \$2.9 Billion*, *HUFFINGTON POST* (Apr. 16, 2014, 6:37 PM), [http://www.huffingtonpost.com/2014/04/17/gmo-corn-china\\_n\\_5162921.html](http://www.huffingtonpost.com/2014/04/17/gmo-corn-china_n_5162921.html) [<http://perma.cc/JMZ8-39FE>].

5. Andrew Harris, *Syngenta-Modified Strain Ruined Corn Market, Farmers Claim*, *BLOOMBERG* (Oct. 29, 2014, 5:05 PM), <http://www.bloomberg.com/news/articles/2014-10-30/syngenta-modified-strain-ruined-corn-market-farmers-claim-1-> [<http://perma.cc/UHB9-XJ9Z>].

6. Polansek, *supra* note 4.

shipments spread.<sup>7</sup> A farmer growing 1,000 acres of corn yielding 200 bushels per acre potentially lost up to \$22,000 for the 2013 crop year due to the drop.<sup>8</sup> This lost profit hurt the already struggling farmers attempting to keep their farms in business.

Now picture the same farmer, but now he is also dependent on the latest seed technology to reduce input costs and obtain the yields needed to turn a small profit or at least break even.<sup>9</sup> What if that critical seed technology is delayed or even withheld from commercial distribution while the seed company sits and waits for China's approval?<sup>10</sup> Even further, consider how China could disrupt the launch of new transgenic seeds because it knows that seed companies must wait for its approval prior to commercialization.<sup>11</sup> While this has not happened yet, a pending class action lawsuit focusing on the 2013 incident walks a very fine line between remedying a loss and putting China in control of when and how U.S. farmers receive the latest seed technology.

After the 2013 market drop, all fingers pointed the blame to Syngenta,<sup>12</sup> the seed company that developed the transgenic trait that China discovered in the U.S. corn shipments.<sup>13</sup> Ironically, at the time, Syngenta had full regulatory approval

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7. *Id.*

8. This figure is a simple example to show how a shift in price per bushel can affect a farmer's profit. In practice, farmers look to many factors in deciding how to market their crop. Don Hofstrand & Bob Wisner, *Grain Price Hedging Basics*, IOWA ST. U., <https://www.extension.iastate.edu/AGDM/crops/html/a2-60.html> (last visited Nov. 1, 2016) [<http://perma.cc/CGJ5-994K>]. Concepts such as grain market hedging and forward purchase contracts help mitigate the risk of price fluctuation. *Id.* These concepts are not explained here and, instead, the example predicts an expected loss if the farmer sold the entire crop into the current cash market based on before and after value.

9. David Krufft, *Impacts of Genetically-Modified Crops and Seeds on Farmers*, AGRIC. L. RESOURCE & REFERENCE CENTER (Nov. 2001), [https://pennstatelaw.psu.edu/\\_file/aglaw/Impacts\\_of\\_Genetically\\_Modified.pdf](https://pennstatelaw.psu.edu/_file/aglaw/Impacts_of_Genetically_Modified.pdf) [<http://perma.cc/QH6R-GNBT>].

10. *See infra* Part III.B.

11. *See infra* Part III.B.

12. Syngenta is a Swiss agrochemical and seed company with operations and offices in the United States. Adding to this complicated scenario, ChemChina, China's largest state-owned agrochemical company, is attempting to buy Syngenta in a \$43B deal. Jacob Bunge et al., *Powerful U.S. Panel Clears Chinese Takeover of Syngenta*, WALL ST. J. (Aug. 23, 2016, 12:45 AM), <http://www.wsj.com/articles/powerful-u-s-panel-clears-chinese-takeover-of-syngenta-1471914278> [<http://perma.cc/4KQD-JN3Q>]. The Committee on Foreign Investment in the United States recently approved the deal amidst national-security concerns. *Id.*

13. Polansek, *supra* note 4.

in the United States to begin selling the transgenic hybrid.<sup>14</sup> But even with such approval, U.S. farmers and grain exporters filed a class action against Syngenta, hoping to recuperate some of their losses.<sup>15</sup> The lawsuit completely ignores China's culpability in the trade disruption.<sup>16</sup> Further, the lawsuit threatens the future of U.S. agriculture by allowing China to maintain veto authority for new seed technology through exploitation of its transgenic seed approval process.<sup>17</sup>

The lawsuit centers on events that began in 2010 when Syngenta obtained U.S. regulatory approval to commercialize an insect-resistant corn hybrid, Viptera.<sup>18</sup> The same year that Syngenta began selling Viptera to U.S. farmers, Syngenta had applied for, but China had not yet approved, import of grain containing the trait.<sup>19</sup> By 2013, China had still not approved Viptera for import, but Viptera was being sold and produced in the United States.<sup>20</sup> China's Viptera approval delay persisted, and in late 2013 China discovered traces of Viptera in its U.S. grain imports and subsequently rejected multiple shipments.<sup>21</sup> With world record corn production in 2013 already driving

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14. Syngenta's Memorandum of Law in Support of Motion to Dismiss Producer and Non-Producer Plaintiffs' Amended Class Action Master Complaints at 7, *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177 (D. Kan. 2015) (No. 14-md-2591-JWL-JPO) [hereinafter Syngenta Memo].

15. Plaintiffs' First Amended Class Action Complaint, *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177 (D. Kan. 2015) (No. 14-cv-02571-JWL-JPO) [hereinafter Complaint]. For the purpose of full disclosure, this author is a shareholder of Westerman Farm, Inc., an entity currently involved in the Viptera litigation against Syngenta.

16. *See id.* (noting all plaintiffs claim Syngenta is singularly liable).

17. *See infra* Part III.

18. *Syngenta Seeds, Inc. v. Bunge N. Am., Inc.*, 820 F. Supp. 2d 953, 958–59 (N.D. Iowa 2011). Viptera is trademarked by Syngenta Seeds, Inc. *Id.* at 958. *See also Plant Pest Risk Assessment for MR162 Corn*, USDA APHIS, [https://www.aphis.usda.gov/brs/aphisdocs/07\\_25301\\_pra.pdf](https://www.aphis.usda.gov/brs/aphisdocs/07_25301_pra.pdf) (last visited Nov. 5, 2016) [<http://perma.cc/9E8N-43V9>] (concluding that MIR 162 corn is unlikely to pose a plant pest risk).

19. *Syngenta Seeds, Inc.*, 820 F. Supp. 2d at 959–61. While seed companies are not required to obtain import approval from countries prior to selling the seed to U.S. farmers, import approvals become important once the U.S. farmers begin commercial production with the seed because the grain harvested from the seed is commingled with other corn in the domestic supply prior to export. Importing countries then buy large shipments of the commingled U.S. grain. *See infra* Part I.D.

20. Karl Plume, *China Rejects U.S. Corn Cargo for Unapproved GMO Variety*, REUTERS (Nov. 18, 2013, 1:08 PM), <http://www.reuters.com/article/2013/11/18/china-corn-gmo-idUSL2N0J316B20131118#VS6TzqqiSmORiyB7.97> [<http://perma.cc/VVU6-XS3F>].

21. Polansek, *supra* note 4.

prices down, the rejected shipments caused a further crash in corn prices.<sup>22</sup>

China's repudiation of U.S. corn contracts caused an uproar among U.S. farmers and grain exporters.<sup>23</sup> Feeling the brunt of the economic loss, farmers and grain exporters are now attempting to utilize the U.S. legal system to hold Syngenta liable for harm caused by its alleged "premature commercialization"<sup>24</sup> of Viptera.<sup>25</sup> The class action<sup>26</sup> filed against Syngenta asserted many claims, but the claim most likely to succeed is negligence.<sup>27</sup>

Unlike prior transgenic<sup>28</sup> contamination cases,<sup>29</sup> the Viptera case presents a novel issue because Syngenta obtained full U.S. regulatory approval for Viptera prior to the alleged

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22. Average corn price dropped from \$6.89 per bushel in 2012 to \$4.50 in 2013. David Pitt, *Crop Values Drop 9.8% in 2013 as Prices Fall*, USA TODAY (Feb. 17, 2014, 4:05 PM), <http://www.usatoday.com/story/money/business/2014/02/17/crop-values-lower-corn-soybean-prices/5559163/> [<http://perma.cc/8KSF-4CUR>]. Estimates for the drop in corn price due to China's rejection are eleven cents per bushel. Polansek, *supra* note 4.

23. Harris, *supra* note 5.

24. Commercialization means marketing the hybrid for commercial production. Premature commercialization is a term of art. Syngenta had full U.S. regulatory approval, leaving the commercialization decision solely with Syngenta. See Complaint, *supra* note 15, at 2 (defining premature commercialization as "introducing a new genetic trait into the market prematurely before it has been approved in all significant export markets").

25. See generally *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177 (D. Kan. 2015). At the time of this writing, the case is still in progress. Individual cases were chosen to proceed to trial as bellwether cases to test the viability of class claims before the class action proceeds to trial. Steven Trader, *Bellwether Cases Chosen*, LAW360 (Nov. 23, 2015, 2:15 PM), <http://www.law360.com/articles/730279/bellwether-cases-chosen-in-syngenta-gmo-corn-mdl> [<https://perma.cc/P4D5-Q9WN>].

26. The separate state cases have been consolidated in multidistrict litigation (MDL) and have been granted class certification. Memorandum and Order re: Class Certification at 1, *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177 (D. Kan. 2015) (No. 14-md-2591-JWL-JPO) [hereinafter Class Certification].

27. See, e.g., *In re Genetically Modified Rice Litig.*, 666 F. Supp. 2d 1004, 1034 (E.D. Mo. 2009) (dismissing majority of producers claims except for negligence and private nuisance).

28. See *infra* note 41, and accompanying text.

29. See, e.g., Andrew Harris & David Beasley, *Bayer Will Pay \$750 Million to Settle Gene-Modified Rice Suits*, BLOOMBERG (July 1, 2011), <http://www.bloomberg.com/news/articles/2011-07-01/bayer-to-pay-750-million-to-end-lawsuits-over-genetically-modified-rice> [<http://perma.cc/Q6ZT-L4H3>]; Doreen Muzzi, *All Corn Growers Eligible for Starlink Settlement*, DELTA FARM PRESS (May 7, 2003), <http://deltafarmpress.com/all-corn-growers-eligible-starlink-settlement> [<http://perma.cc/AA2F-3WB5>] (Aventis settled for \$110 million).

transgenic contamination.<sup>30</sup> The case deals with a question of first impression: Do seed companies owe a duty to consumers when commercializing a transgenic hybrid even after receiving full U.S. regulatory approval? While the lawsuit addresses the conduct of Syngenta in its decision to commercialize Viptera prior to China's approval, the implications of imposing a duty on seed companies beyond the regulatory process have yet to be explored. The unintended consequences of imposing a duty on seed companies to obtain import approval from various countries prior to initiating sales in the United States could have a chilling effect on the future of U.S. agriculture.<sup>31</sup> Further, highlighting Syngenta's actions shifts focus away from China's increasingly lengthy delay in approvals—the true cause of the 2013 market crash.<sup>32</sup>

This Comment argues that the World Trade Organization (WTO) should enforce the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), which requires WTO members to process biotechnology approvals without undue delay. Part I introduces transgenic seeds and the infrastructure and processes for grain delivery, handling, storage, and export.<sup>33</sup> Part II explains the problem facing U.S. agriculture as illustrated by the Viptera events and subsequent lawsuit.<sup>34</sup> Part III explains how and why China exploits its transgenic seed approval process and why the Viptera lawsuit may actually assist China in its exploitation.<sup>35</sup> Part IV then proposes action against China under the WTO's SPS Agreement that would directly address China's manipulative policies and prevent China from gaining exclusive control over vital seed technology.<sup>36</sup>

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30. Compare *In re Genetically Modified Rice*, 666 F. Supp. 2d at 1012 (rice trait was still fully regulated in the field research test phase), and *In re Starlink Corn Prods. Liab. Litig.*, 212 F. Supp. 2d 828, 834 (N.D. Ill. 2002) (corn trait was still split regulated by the EPA with approval only for animal consumption and strict requirements to segregate from food channels), with *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177, 1186 (D. Kan. 2015) (corn trait fully deregulated).

31. See *infra* Part III.B.

32. See *infra* Part III.

33. See *infra* Part I.

34. See *infra* Part II.

35. See *infra* Part III.

36. See *infra* Part IV.

## I. BACKGROUND

Scientific research and development in seed technology has transformed crop production in the United States.<sup>37</sup> Transgenic seed development has promoted efficiency in crop production but has also complicated the regulatory process. This Part introduces the role transgenic seeds play in modern agriculture. Section A explains the revolutionary development of transgenic seeds and its impact on U.S. agriculture. Section B details the regulatory response and current framework governing transgenic seed production. Finally, section C introduces the players and the timeline for transgenic seed production from initial research and development to grain export.

### A. *Transgenic Seeds*

Genetic modification in grain crops is not a new concept.<sup>38</sup> Technically, all domesticated crops grown in the United States are genetically modified.<sup>39</sup> The new age of genetic modification came when advancements in genetic engineering provided for trait transfer without using conventional breeding practices.<sup>40</sup> Transgenic seeds are created when genetic material is selected, isolated, and inserted into the seed to obtain certain trait expressions in the plant.<sup>41</sup> Modern genetic engineering allows scientists to engineer unique combinations of characteristics into a plant that would be difficult or impossible to obtain through traditional plant breeding.<sup>42</sup>

The majority of commercial crop production in the United

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37. See generally Carl F. Jordan, *Genetic Engineering, the Farm Crisis, and World Hunger*, 52 *BIOSCIENCE* 523 (2002) (discussing how genetic engineering has changed agriculture).

38. See *THE GENE REVOLUTION: GM CROPS AND UNEQUAL DEVELOPMENT* 5 (Sakiko Fukuda-Parr ed., 2007) [hereinafter *THE GENE REVOLUTION*] (explaining the century old practices of plant breeding used by farmers to obtain optimal crop characteristics).

39. *Id.*

40. JENNIFER A. THOMSON, *SEEDS FOR THE FUTURE* 3–4 (Cornell Univ. Press 2007).

41. *Id.* This Comment will use “transgenic” instead of “genetically modified” to distinguish between old plant breeding methods and new gene insertion methods. See *What are Transgenic Plants?*, DEP’T OF SOIL AND CROP SCIS. AT COLO. STATE U., <http://cls.casa.colostate.edu/transgeniccrops/what.html> (last updated Mar. 11, 2004) [<https://perma.cc/H7PC-L6HP>].

42. THOMSON, *supra* note 40, at 4.



States now utilizes transgenic seeds to mitigate various risks throughout the growing season and to maximize yield.<sup>43</sup> The most common traits utilized for commercial production are herbicide tolerance, insect resistance, and drought tolerance.<sup>44</sup> Some plants contain traits that can actually produce toxins that kill various insect pests that feed on or bore into plant leaves and stems.<sup>45</sup> Herbicide-tolerant plants utilize traits immunizing the plant from herbicide applications that will kill weeds competing with the plant.<sup>46</sup> Plants with drought tolerant traits are able to respond to stress events by shutting down plant processes and allowing for more efficient use of water during drought conditions.<sup>47</sup> Many commercial corn hybrids now include stacked traits.<sup>48</sup> Stacking allows multiple traits to be incorporated into a single seed.<sup>49</sup> Common triple-stacked corn hybrids contain traits for corn borer resistance, corn rootworm resistance, and glyphosate tolerance.<sup>50</sup>

Not only has transgenic technology dramatically impacted modern agricultural practices, it also plays an integral role in the future of agriculture and is the only way to continue feeding our growing population while managing our diminishing resources.<sup>51</sup> Diminishing arable land and scarce water supply present challenges for older, inefficient agricultural practices.<sup>52</sup> Transgenic technology has provided

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43. JORGE FERNANDEZ-CORNEJO ET AL., USDA ECON. RESEARCH SERV., GENETICALLY ENGINEERED CROPS IN THE UNITED STATES 1 (2014), [http://www.ers.usda.gov/webdocs/publications/err162/43668\\_err162.pdf](http://www.ers.usda.gov/webdocs/publications/err162/43668_err162.pdf) [<http://perma.cc/8LNS-W4ZM>].

44. THE GENE REVOLUTION, *supra* note 38, at 22 tbl.2.3.

45. *Id.* at 7.

46. *Id.* at 39–40.

47. *Id.* at 59–61.

48. *Stacked Traits in Biotech Crops*, INT'L SERV. FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS, <http://isaaa.org/resources/publications/pocketk/42/default.asp> (last visited Nov. 5, 2016) [<http://perma.cc/CCM4-GZ34>].

49. *Id.*

50. John Pocock, *Triple-Stacked in Your Favor*, CORN+SOYBEAN DIG. (Jan. 1, 2007), <http://cornandsoybeandigest.com/triple-stacked-your-favor> [<http://perma.cc/PUF7-RZMF>]. Glyphosate is the most common broad-spectrum weed killing herbicide. Roundup is Monsanto's trade name for this product.

51. Normal E. Borlaug, *Ending World Hunger. The Promise of Biotechnology and the Threat of Antiscience Zealotry*, 124 PLANT PHYSIOLOGY 487–90 (2000), <http://www.plantphysiol.org/content/124/2/487> [<http://perma.cc/T2TL-Z3SJ>].

52. FOOD & AGRIC. ORG., THE STATE OF THE WORLD'S LAND AND WATER RESOURCES FOR FOOD AND AGRICULTURE: MANAGING SYSTEMS AT RISK, at ix–x (2011), <http://www.fao.org/docrep/017/i1688e/i1688e.pdf> [<http://perma.cc/NHP4-PRPV>].

the continuing solution as science constantly finds ways to continue making plants more water efficient and higher yielding.<sup>53</sup> Estimates show that meeting our future food needs will require a 70 percent increase in food production by 2050.<sup>54</sup> Therefore, transgenic seed technology must continue to develop in order to meet the constantly increasing world demand for grain.<sup>55</sup> This technology is imperative to feed the ever-expanding world population.<sup>56</sup>

A transgenic rice variety, known as golden rice, exemplifies the importance of transgenic seed technology.<sup>57</sup> While stirring general controversy regarding transgenic technology, golden rice promises a nutritionally enhanced rice variety to areas plagued with hunger and malnutrition.<sup>58</sup> Golden rice is genetically modified to produce beta-carotene, providing substantial amounts of the important nutrient, Vitamin A.<sup>59</sup>

Golden rice was the product of the initial transgenic seed movement.<sup>60</sup> The scientists responsible for developing golden rice eventually licensed patent rights for golden rice to a company that would ultimately become Syngenta.<sup>61</sup> Syngenta scientists were able to improve the production of beta-carotene

53. Michael D. Edgerton, *Increasing Crop Productivity to Meet Global Needs for Feed, Food, and Fuel*, 149 *PLANT PHYSIOLOGY* 7, 10–11 (2009), <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2613695/pdf/pp1490007.pdf> [<http://perma.cc/X2EE-GQ9U>].

54. FOOD & AGRIC. ORG., *supra* note 52, at vii.

55. Transgenic technology has helped corn yields grow exponentially from approximately twenty bushels per acre in the 1940s to approximately 120 bushels per acre in 2012. Brad Plumer, *A Brief History of U.S. Corn, in One Chart*, WASH. POST (Aug. 16, 2012), <https://www.washingtonpost.com/news/wonk/wp/2012/08/16/a-brief-history-of-u-s-corn-in-one-chart/> [<http://perma.cc/QC9K-3GNY>].

56. See Peter J. Gregory & Timothy S. George, *Feeding Nine Billion: The Challenge to Sustainable Crop Production*, *J. EXPERIMENTAL BOTANY*, (Aug. 12, 2011), at 1, 5, <http://jxb.oxfordjournals.org/content/early/2011/08/12/jxb.err232.full.pdf+html> [<http://perma.cc/S8MK-2BL8>] (“Cereal yields and production have increased 3-fold in the last 50 years and will need to continue to increase at the same absolute rate for the next 40 years.”).

57. Amy Harmon, *Golden Rice: Lifesaver?*, *N.Y. TIMES* (Aug. 24, 2013), [http://www.nytimes.com/2013/08/25/sunday-review/golden-rice-lifesaver.html?\\_r=0](http://www.nytimes.com/2013/08/25/sunday-review/golden-rice-lifesaver.html?_r=0) [<http://perma.cc/X95J-KY3K>].

58. *Id.*

59. A bowl of golden rice would provide up to 60 percent of the daily Vitamin A requirement for healthy children. *Id.*

60. See *id.* (“Identified in the infancy of genetic engineering as having the potential for the biggest impact for the world’s poor, beta-carotene-producing rice was initially funded by the Rockefeller Foundation and the European Union.”).

61. *Id.*

in golden rice by adding a transgene from corn.<sup>62</sup> Syngenta has ensured open access for golden rice in developing countries.<sup>63</sup> Currently, a nonprofit group, the International Rice Research Institute, is developing golden rice for farmers in the Philippines.<sup>64</sup> These advanced seed varieties have triggered increased regulatory scrutiny in the United States.

### *B. Current Regulatory Structure*

All seeds used to produce food products for human consumption in the United States must receive approval from the Food and Drug Administration (FDA).<sup>65</sup> Transgenic seeds have forced government agencies to create a much more complex regulatory structure than unaltered seeds because of the substances created by the plant and the behavior of the plant in the environment.<sup>66</sup> Because transgenic seeds now contain traits that induce plants to create pesticides within the plant itself, the seeds must also be regulated as pesticides adding another agency to the regulatory structure.<sup>67</sup>

The United States spreads transgenic seed approval responsibilities over three different agencies.<sup>68</sup> The process is based on the antiquated framework laid out in the Coordinated Framework for Regulation of Biotechnology from 1986.<sup>69</sup> The FDA, Environmental Protection Agency (EPA), and United States Department of Agriculture (USDA) regulate different aspects of production prior to commercial sale of a transgenic

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62. *Id.*

63. *Id.* Golden rice will cost no more than other rice varieties and farmers will be able to save seeds to replant the following year. *Id.*

64. *Id.*

65. See 21 U.S.C. § 321(f) (2012) (defining food as “articles used for food . . . [and] articles used for components of any such article”); see also 21 U.S.C. § 393 (2012) (defining the role of the FDA).

66. See Allison H. Scott, *Genetically Modified Crop Regulation: The Fraying of America’s Patchwork Farm Lands*, 26 VILL. ENVTL. L.J. 145, 150–54 (2015) (discussing how some transgenic plants produce their own pesticides and how regulators closely monitor the interaction of altered plants with the surrounding environment).

67. This Comment does not attempt to criticize or recommend reform of the U.S. regulatory system for transgenic crops. See *id.* at 166 (using international examples to set forth a new framework); see also Maria R. Lee-Muramoto, *Reforming the “Uncoordinated” Framework for Regulation of Biotechnology*, 17 DRAKE J. AGRIC. L. 311 (2012) (proposing more agency coordination).

68. Lee-Muramoto, *supra* note 67, at 315.

69. *Id.* at 314.

seed.<sup>70</sup>

The FDA's role in the approval process is derived from authority under the Federal Food, Drug, and Cosmetic Act (FFDCA).<sup>71</sup> The FDA's role is to prevent unsafe, adulterated foods from entering the market.<sup>72</sup> The FDA classifies substances as either food additives or generally recognized as safe (GRAS).<sup>73</sup> Food additives require review and approval by the FDA while GRAS substances automatically receive exemption from food safety regulations.<sup>74</sup> The FDA has determined that substances from genetically modified plants are substantially similar to their conventional counterparts and are deemed GRAS.<sup>75</sup> Therefore, the FDA plays only a limited role prior to the commercialization of a transgenic crop.

The EPA's role in the approval process involves regulating pesticides under authority from the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).<sup>76</sup> The main regulatory focus for the EPA is plant-incorporated protectants (PIPs) that produce pesticides for insect control.<sup>77</sup> The EPA is primarily concerned with the genetic material used to produce the toxin expression in the seed, not the actual plant.<sup>78</sup> Thus, only transgenic seeds expressing pesticide-producing traits are subject to EPA oversight.<sup>79</sup> The EPA grants approval once it determines that the residual pesticide level in the resulting product will not exceed established tolerance levels.<sup>80</sup>

The USDA holds the most regulatory oversight on transgenic crops through the Animal and Plant Health Inspection Service (APHIS).<sup>81</sup> APHIS regulates transgenic seeds under authority set out in the Plant Protection Act

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70. *Id.* at 317–23.

71. 21 U.S.C. §§ 301–399f (2012).

72. Lee-Muramoto, *supra* note 67, at 320.

73. Scott, *supra* note 66, at 151.

74. *Id.* at 152.

75. *See id.*; Lee-Muramoto, *supra* note 67, at 320.

76. 7 U.S.C. §§ 136–136y (2012); Scott, *supra* note 66, at 153; Lee-Muramoto, *supra* note 67, at 322.

77. Lee-Muramoto, *supra* note 67, at 322.

78. *Id.* (noting EPA doesn't require labeling the seed because the pesticide is produced in the plant tissue).

79. Scott, *supra* note 66, at 153.

80. Rebecca Bratspies, *Some Thoughts on the American Approach to Regulating Genetically Modified Organisms*, 16 KAN J.L. & PUB. POL'Y 393, 410 (2007).

81. *See* Scott, *supra* note 66, at 154.

(PPA).<sup>82</sup> The PPA requires APHIS to monitor and prevent exposure of “plant pests” in U.S. agriculture.<sup>83</sup> The transgenes<sup>84</sup> commonly used to create transgenic crops are presumptively plant pests and invoke APHIS approval requirements.<sup>85</sup> The APHIS approval process involves two steps. First, a seed company must obtain approval from APHIS to conduct field trials of the “regulated article.”<sup>86</sup> Second, after field trials, the company may petition APHIS for a deregulated status.<sup>87</sup> Upon APHIS granting deregulated status (without restrictions),<sup>88</sup> the seed is no longer under any regulatory oversight, and the seed company may sell the seed for commercial production.<sup>89</sup>

During the U.S. regulatory approval process the seed company begins applying for approval from the various countries that will be market importers for U.S. grain.<sup>90</sup> Because U.S. regulatory agencies do not require export approvals, the post-deregulation decision to begin U.S. sales is entirely within the seed company’s discretion, even if major export markets have not yet approved the seed for import.<sup>91</sup>

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82. 7 U.S.C. § 7701 *et seq.* (2012); *see* Scott, *supra* note 66, at 154; Lee-Muramoto, *supra* note 67, at 318.

83. The term “plant pest” means any living stage of any of the following that can directly or indirectly injure, cause damage to, or cause disease in any plant or plant product: (A) A protozoan. (B) A nonhuman animal. (C) A parasitic plant. (D) A bacterium. (E) A fungus. (F) A virus or viroid. (G) A[n] infectious agent or other pathogen. (H) Any article similar to or allied with any of the articles specified in the preceding subparagraphs. 7 U.S.C. § 7702(14) (2012).

84. *See* DEPT OF SOIL AND CROP SCIS. AT COLO. STATE U., *supra* note 41 (noting that a transgene is a foreign gene or gene sequence artificially inserted into plants.).

85. Scott, *supra* note 66, at 154 (noting that transgenes from bacteria and viruses are classified as plant pests and are commonly used to genetically modify a plant).

86. THE GENE REVOLUTION, *supra* note 38, at 38–39; FERNANDEZ-CORNEJO ET AL., *supra* note 43, at 4.

87. FERNANDEZ-CORNEJO ET AL., *supra* note 43, at 4; Scott, *supra* note 66, at 155 (“Upon finding no risk of plant pest harm, the PPA requires APHIS to deregulate.”); 7 C.F.R. § 340.6 (2016) (listing deregulation status requirements).

88. The EPA may impose restrictions before APHIS grants deregulated status. *In re* Starlink Corn Prods. Liab. Litig., 212 F. Supp. 2d 828, 834 (N.D. Ill. 2002). This is referred to as split regulation.

89. THE GENE REVOLUTION, *supra* note 38, at 39. Note that there are no international export market approvals required in this process.

90. *See* Syngenta Memo, *supra* note 14, at 9.

91. *Id.* at 42 (USDA’s approval is a “determination that Viptera *could* be sold in the U.S. without restriction”).

### C. *Industry Standards*

Industry standards are the only published guidance urging seed companies to consider export market approvals prior to commercialization.<sup>92</sup> The Biotechnology Industry Organization (BIO) publishes stewardship standards that biotechnology firms typically follow in commercializing their products.<sup>93</sup> These standards are guidelines and are not legally binding.<sup>94</sup> Other large agricultural organizations, such as CropLife International and the National Grain and Feed Association, have also adopted guidelines similar to BIO guidelines for stewardship standards.<sup>95</sup>

The standards adopted by these organizations generally urge companies to consider international major market approvals prior to commercializing a seed.<sup>96</sup> Some even list countries considered by the organization as “major markets.”<sup>97</sup> Seed companies may begin initial sales to U.S. farmers while export approvals are in process because of the time that it takes after initial sales for farmers to grow the crop and harvest the grain before the grain enters export channels.<sup>98</sup> Historically, companies relied on the average approval times for countries with functioning regulatory frameworks in deciding when to commercialize.<sup>99</sup> Making a determination based on normal processing time helps companies deliver the newest transgenic traits to U.S. farmers as soon as possible with the expectation that export approvals will be

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92. *Id.* at 9–12.

93. *See* Syngenta Seeds, Inc. v. Bunge N. Am., Inc., 820 F. Supp. 2d 953, 958–59 (N.D. Iowa 2011) (recognizing Syngenta adherence to BIO recommendations).

94. *See id.* at 958 (describing BIO standards as “voluntary policy recommendations”).

95. Complaint, *supra* note 15, at 13–15.

96. *E.g.*, *Product Launch Stewardship*, CROPLIFE INT’L, <http://croplife.org/plant-biotechnology/stewardship-2/product-launch-stewardship/> (last visited Oct. 31, 2016) [<https://perma.cc/A5GU-7R2Z>].

97. *See Bunge*, 820 F. Supp. 2d at 959 (discussing “minimum markets” to consider for approval prior to commercialization).

98. *See, e.g., id.* at 958. If companies anticipate that approvals will be forthcoming, they may begin selling seed to farmers with the expectation that they will receive import approval by the time any grain containing the trait actually enters export channels. *See id.*

99. *See id.* at 958–59 (noting that at the time of Viptera commercialization, Syngenta had “not yet obtained import approval for Viptera corn from China or the European Union (EU), but it anticipate[d] receiving approval from China by March 2012”).

forthcoming.<sup>100</sup> This practice has not been problematic in the past because countries with functioning regulatory systems have processed biotechnology approvals in good faith. But this system falls apart when a foreign country unreasonably delays its approvals or manipulates its approval system for its own economic gain.<sup>101</sup>

#### *D. Players and Timeline*

Prior to commercializing seeds, companies invest massive amounts of time and money preparing the seed for field research trials.<sup>102</sup> Field research plots are planted under strict guidelines to test seed performance under various field conditions.<sup>103</sup> Seed companies commonly contract with local farmers to plant test plots, but the company maintains control and responsibility under APHIS regulations.<sup>104</sup> The field trial stage is critical because the seed is still considered a plant pest and must be carefully controlled to ensure there is no widespread release of the new plant into the environment.<sup>105</sup> Understanding the concerns underlying the procedures utilized during the field trial stage helps understand the difficulty of containing transgenic traits.

The most common form of risk mitigation during these field trials is the use of a buffer zone.<sup>106</sup> By requiring a buffer zone between the research plot and other commercial plots, the

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100. Access to the newly developed transgenic traits is important to farmers. See Justin G. Gardner et al., *Genetically Modified Crops and Household Labor Savings in US Crop Production*, 12(3&4) *AGBIOFORUM* 303, 311 (2009), <http://www.agbioforum.org/v12n34/v12n34a06-gardner.htm> [https://perma.cc/3HDN-FXZ9]; Gregg Hillyer, *Biotechnology Offers US Farmers Promises and Problems*, 2(2) *AGBIOFORUM* 99 (1999), <http://www.agbioforum.org/v2n2/v2n2a06-hillyer.htm> [https://perma.cc/YUN8-MEQE].

101. See *infra* Part III.A.

102. See, e.g., *Bunge*, 820 F. Supp. 2d at 958.

103. E.g., *Minimum Separation Distances to Be Used for Confined Field Tests of Certain Genetically Engineered Plants*, U.S. DEP'T AGRIC. (Aug. 2013), [https://www.aphis.usda.gov/biotechnology/downloads/sep\\_dist\\_table\\_0813.pdf](https://www.aphis.usda.gov/biotechnology/downloads/sep_dist_table_0813.pdf) [https://perma.cc/5978-SKBV] (detailing minimum separation distances during field trials).

104. R. P. Wrubel et al., *Field Testing Transgenic Plants*, 42 *BIOSCIENCE* 280, 282–85 (Apr. 1992), <http://www.tufts.edu/~skrimsky/PDF/bioscience.PDF> [https://perma.cc/MS36-RNTY].

105. See, e.g., Kyndra A. Lundquist, *Unapproved Genetically Modified Corn: It's What's for Dinner*, 100 *IOWA L. REV.* 825, 837 (2015) (discussing the widespread harm of Starlink corn escape).

106. Wrubel et al., *supra* note 104, at 283–84.

risk of cross contamination via pollination is reduced.<sup>107</sup> But the very nature of crop production creates significant risk of contamination even under the most stringent guidelines.<sup>108</sup> Pollen drift has already presented a significant obstacle in containing transgenic traits.<sup>109</sup>

LibertyLink rice is an example of how pollen drift makes containment of transgenic traits difficult. LibertyLink rice was an herbicide resistant variety created by Aventis in the early 1990s.<sup>110</sup> The USDA granted a permit for field research trials in 1998.<sup>111</sup> Bayer acquired Aventis in 2001, the same year the field trials ended.<sup>112</sup> In 2006 the LibertyLink rice was still not approved for commercial production but traces of it were discovered in the U.S. rice supply.<sup>113</sup> The USDA took no action against Bayer because it could not identify how the trait entered the rice supply.<sup>114</sup> It is possible the trait escaped the research plots through pollen drift, which demonstrates the difficulty in preventing traits that have not been fully deregulated from contaminating U.S. grain markets.<sup>115</sup> Litigation ensued on behalf of various entities in the rice industry, and in 2011, Bayer settled the lawsuits for \$750 million.<sup>116</sup>

Once a seed is commercialized, seed companies begin selling the seed to U.S. farmers.<sup>117</sup> At this stage, seed companies' main intellectual property concerns are preventing pollen drift and cross contamination.<sup>118</sup> These concerns may

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107. *Id.*

108. *Id.*

109. *See* Ctr. for Food Safety v. Vilsack, 718 F.3d 829, 832 (9th Cir. 2013) (explaining transgenic contamination).

110. Sarah Holm, *When They Don't Want Your Corn: The Most Effective Tort Claims for Plaintiffs Harmed by Seed Companies Whose Genetically Engineered Seeds Produced More Problems Than Profits*, 38 HAMLINE L. REV. 557, 575 (2015).

111. *Id.* at 576.

112. *Id.*

113. *Id.*

114. *Id.*

115. *Compare* Lundquist, *supra* note 105, at 838 (describing *LibertyLink* and two other earlier incidents of "unapproved" varieties "escap[ing] from field tests or research sites"), *with* Joshua B. Cannon, *Statutory Stones and Regulatory Mortar: Using Negligence Per Se to Mend the Wall Between Farmers Growing Genetically Engineered Crops and Their Neighbors*, 67 WASH. & LEE L. REV. 653, 673 (2010) (suggesting the contamination was not the result of cross pollination).

116. Holm, *supra* note 110, at 576–77.

117. Syngenta Seeds, Inc. v. Bunge N. Am., Inc., 820 F. Supp. 2d 953, 958–59 (N.D. Iowa 2011).

118. Sabrina Wilson, *Induced Nuisance: Holding Patent Owners Liable for*



also coincide with additional regulatory guidance. If the seed is split regulated (approved for animal but not human consumption), the EPA may require the seed company to impose additional requirements on the farmers when growing and harvesting the regulated crop.<sup>119</sup> The additional requirements imposed by the EPA may compel the seed company to instruct farmers not to deliver the harvested grain to a general elevator but instead to channel it to specific grain marketers to prevent contamination of supplies meant for human consumption.<sup>120</sup> If no restrictions are imposed on the farmer, harvested grain is most commonly sold to local elevators, which take in all varieties of grain for distribution.<sup>121</sup>

Local grain elevators are equipped to take in the large amounts of grain harvested by area farmers.<sup>122</sup> However, local elevators are not equipped to test every truckload of grain brought in and then separately store the grain based on the regulated trait.<sup>123</sup> At this stage of the grain handling process, all grain delivered to the local elevators is commingled in large grain stores.<sup>124</sup> The elevators then sell the grain to processors, distributors, or grain exporters.<sup>125</sup>

Direct delivery contracts are the most common way to mitigate the risk of commingling.<sup>126</sup> Direct delivery is widely used in the ethanol industry for corn that is developed specifically for ethanol production.<sup>127</sup> The ethanol corn must be

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*GMO Cross-Contamination*, 64 EMORY L.J. 169, 175–76 (2014) (discussing patent enforcement cases for inadvertent cross pollination).

119. *In re Starlink Corn Prods. Liab. Litig.*, 212 F. Supp. 2d 828, 834 (N.D. Ill. 2002).

120. *Id.*

121. DAVID S. BULLOCK ET AL., *THE ECONOMICS OF NON-GMO SEGREGATION AND IDENTITY PRESERVATION* 7 (2000), <http://ageconsearch.umn.edu/bitstream/21845/1/sp00bu03.pdf> [<https://perma.cc/WPU5-VBJW>].

122. *See id.* at 8. Although there are other avenues that grain may travel after intake at a local elevator, this Comment will focus on the delivery from the elevator to grain exporters as the next step in the export channel.

123. *Syngenta Seeds, Inc. v. Bunge N. Am., Inc.*, 820 F. Supp. 2d 953, 961 (N.D. Iowa 2011) (describing the cost of \$6–8 million for each facility to be able to separate and store grain based on the trait).

124. *See id.* (describing Bunge’s integrated facilities that “cannot designate corn as export or non-export when [they] receive[] it”); *see also* BULLOCK ET AL., *supra* note 121, at 8 (explaining in detail the grain flow at a local elevator).

125. BULLOCK ET AL., *supra* note 121, at 8.

126. *Id.* at 9.

127. Andrew Pollack, *U.S. Approves Corn Modified for Ethanol*, N.Y. TIMES (Feb. 11, 2011), [http://www.nytimes.com/2011/02/12/business/12corn.html?\\_r=0](http://www.nytimes.com/2011/02/12/business/12corn.html?_r=0) [<https://perma.cc/EH3M-TX3C>].

kept separate from corn used for food production.<sup>128</sup> To ensure the traits do not commingle with general domestic grain supplies, farmers growing ethanol hybrids contract directly with ethanol plants.<sup>129</sup> This type of direct delivery also helps prevent traits from entering distribution channels that are destined for international markets via grain exporters.

### 1. Grain Exporters

Grain exporters buy massive quantities of grain from the various networks of local elevators across the country.<sup>130</sup> The grain exporters take in large quantities of already commingled grain and amass shipments that will be exported to countries around the world.<sup>131</sup>

Quality testing is required at this stage in the export process, but these tests are solely related to quality control and do not attempt to separate and identify all traits contained in a shipment.<sup>132</sup> Grain exporters create shipments that identify a destination country, but the shipments also maintain flexibility for redirection to another country in case of shifting international demand.<sup>133</sup> Any testing for specific genetic traits is left to the importing country at the time the shipment arrives.<sup>134</sup> By waiting to test until the very last phase of import, the only remedy is rejecting the shipment at port.<sup>135</sup>

### 2. Importers

Many countries across the world depend on U.S. grain

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128. *See id.* (commingling would weaken the starch in conventional corn and disrupt food processing).

129. *Id.*

130. OFFICE OF TECH. ASSESSMENT, U.S. CONGRESS, ENHANCING THE QUALITY OF U.S. GRAIN FOR INTERNATIONAL TRADE 41 (1989) [hereinafter U.S. CONGRESS].

131. *Id.*

132. *See id.* at 42–44 (explaining that the required seed quality tests analyze the physical quality of the seed). The quality tests do not analyze the genetic makeup of the seed sample. There is a test that can detect the presence of transgenic material but it is only a positive/negative test used to test organic/non-GM grain to ensure no contamination and does not give a list of various specific transgenes in a sample. BULLOCK ET AL., *supra* note 121, at 8.

133. *See* U.S. CONGRESS, *supra* note 130, at 41 (explaining that a seller retains title to the grain until paid in full).

134. *Id.* at 244.

135. *Id.*

imports to meet their demand.<sup>136</sup> Though export approval is not required prior to deregulation,<sup>137</sup> seed companies normally receive import country approvals before the grain containing the trait ends up in export channels.<sup>138</sup> Reliance on historic processing data usually means that seed companies commonly commercialize seeds prior to approval with the expectation that the approval will come very soon after initial sales of the seed.<sup>139</sup>

The European Union (EU) and many U.S. grain-importing countries, including China, maintain a zero-tolerance policy for accepting unapproved genetic traits in grain shipments.<sup>140</sup> These types of policies often create trade disruptions because tiny amounts of an unapproved trait may cause rejection of shipments already sitting in the importer's port.<sup>141</sup>

## II. THE PROBLEM

Premature commercialization of new transgenic hybrids creates economic risk for U.S. farmers and destabilizes the international grain market.<sup>142</sup> If this risk is realized, the loss is borne by the farmers and exporters who receive lower market prices when selling their supply in a depressed market.<sup>143</sup> Premature commercialization also creates the potential for international market actors to use their transgenic seed

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136. See Econ. Research Serv., *Trade*, U.S. DEPT AGRIC., <http://www.ers.usda.gov/topics/crops/corn/trade.aspx> (last updated Oct. 12, 2016) [<https://perma.cc/KX7P-Z727>].

137. See *supra* text accompanying note 87.

138. See Dexter Roberts & Alex Bjerga, *China Does an About-Face on GMOs*, BLOOMBERG (May 21, 2015), <http://www.bloomberg.com/news/articles/2015-05-21/china-does-an-about-face-on-gmos> [<https://perma.cc/9RNA-JC2V>].

139. See *Syngenta Seeds, Inc. v. Bunge N. Am., Inc.*, 820 F. Supp. 2d 953, 958–59 (N.D. Iowa 2011) (noting Syngenta commercialized Viptera for the 2011 planting season without EU or China approval but anticipated China's approval by 2012).

140. FOOD & AGRIC. ORG. OF THE UNITED NATIONS, TECHNICAL CONSULTATION ON LOW LEVELS OF GENETICALLY MODIFIED (GM) CROPS IN INTERNATIONAL FOOD AND FEED TRADE 11 (2014), [http://www.fao.org/fileadmin/user\\_upload/agns/topics/LLP/AGD803\\_2\\_Final\\_En.pdf](http://www.fao.org/fileadmin/user_upload/agns/topics/LLP/AGD803_2_Final_En.pdf) [<https://perma.cc/G9FX-7NCQ>].

141. *Steady Increase in Incidents of Low Levels of GM Crops in Traded Food and Feed*, FOOD & AGRIC. ORG. OF THE UNITED NATIONS (Mar. 13, 2014), <http://www.fao.org/news/story/en/item/216311/icode/> [<https://perma.cc/VUY7-XKM6>].

142. See *generally In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177, 1186 (D. Kan. 2015).

143. Complaint, *supra* note 15, at 3–5.

approval process to exploit premature commercialization decisions.<sup>144</sup> This Part uses the Viptera story to show the effects of premature commercialization. Section A discusses the Viptera story and the circumstances leading to the 2013 corn market crash. Section B details the international and domestic impacts of the Viptera fiasco. Section C explains how the domestic response, a class action lawsuit against Syngenta, attempts to remedy the farmers' economic loss.

### A. *The Viptera Story*

In 2007, Syngenta sought to commercialize a new corn hybrid.<sup>145</sup> The Viptera hybrid contained a trait genetically engineered for insect resistance in corn plants.<sup>146</sup> Syngenta received approvals from the FDA, EPA,<sup>147</sup> and in 2010, APHIS granted deregulated status to Viptera.<sup>148</sup> During this time, Syngenta had also applied for import approvals from various grain importing countries.<sup>149</sup> At the time APHIS deregulated Viptera, China and the EU had not approved the trait.<sup>150</sup> Lingering international approvals are not unusual; as discussed above, most approvals come after the crop is granted deregulated status but prior to the harvested grain's entrance into export channels.<sup>151</sup>

Syngenta represented to APHIS that approvals for importing countries were submitted.<sup>152</sup> Syngenta also assured APHIS that if seeds were planted prior to import approval from various countries, Syngenta could effectively channel Viptera and segregate it from the main export market.<sup>153</sup> However, Syngenta's statements in a later case suggest they in fact believed the trait could easily enter the corn supply.<sup>154</sup>

In *Syngenta Seeds, Inc. v. Bunge North America, Inc.*,

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144. See Roberts & Bjerga, *supra* note 138.

145. Complaint, *supra* note 15, at 21.

146. *Id.*

147. The hybrid had insecticidal properties requiring registry under FIFRA. *Syngenta Seeds, Inc. v. Bunge N. Am., Inc.*, 820 F. Supp. 2d 953, 958 (N.D. Iowa 2011).

148. Syngenta Memo, *supra* note 14, at 7.

149. *Id.* at 7–11.

150. *Id.* at 13; *Bunge*, 820 F. Supp. 2d at 958–59.

151. *Bunge*, 820 F. Supp. 2d at 958–59.

152. Complaint, *supra* note 15, at 23–24.

153. *Id.*

154. *Bunge*, 820 F. Supp. 2d at 969.

Syngenta sued Bunge, an integrated grain distributor and exporter, for discriminating against Syngenta's Viptera corn.<sup>155</sup> Bunge refused to accept Viptera corn, which had been marketed to U.S. farmers and grown and harvested before China approved the trait for import, because it feared potential export issues if its grain supplies contained Viptera.<sup>156</sup> Syngenta assumed China's approval would follow shortly after commercialization, so Syngenta did not impose strict standards on farmers planting Viptera and did not instruct farmers to segregate or isolate their harvested Viptera corn.<sup>157</sup>

Syngenta argued that Bunge's refusal to accept Viptera corn was unreasonable "because it is not likely to achieve the desired result of Viptera-free corn stores, where there is a reasonable possibility of accidental delivery of Viptera corn."<sup>158</sup> This assertion suggests that Syngenta believed that even if it had directed farmers to segregate the grain or left it to the grain elevators to isolate it, the trait could still find its way into the U.S. corn supply.<sup>159</sup> Even seed companies understand that effectively isolating or channeling a specific trait away from the main export market is most likely unachievable. Therefore, as soon as a trait is marketed to U.S. farmers, the likely result is that domestic and export grain channels will be exposed to trace amounts of the trait in commingled supplies.

### *B. China Rejects Corn Shipments*

China still had not approved Viptera for import by late 2013, when it discovered trace amounts of the Viptera trait in its imports from the United States.<sup>160</sup> China then rejected multiple shipments already sent from the United States and

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155. *Id.* at 953.

156. *Id.* at 960–61 ("Bunge cannot designate corn as export or non-export when Bunge receives it.")

157. *Id.*; see Roberts & Bjerga, *supra* note 138 (noting that Syngenta relied on the "on time" and "predictable" nature of international approvals in seed commercialization).

158. *Bunge*, 820 F. Supp. 2d at 969.

159. Complaint, *supra* note 15, at 23–24; see also Holm, *supra* note 110, at 583 ("Viptera corn was present in essentially the entire U.S. corn supply.")

160. Karl Plume, *China Rejects U.S. Corn Cargo for Unapproved GMO Variety*, REUTERS (Nov. 18, 2013), <http://www.reuters.com/article/2013/11/18/china-corn-gmo-idUSL2N0J316B20131118#VS6TzqqiSmORiyB7.97> [https://perma.cc/5WZ9-CAZL]; see also Polansek, *supra* note 4.

banned any future U.S. corn imports.<sup>161</sup> Even though Viptera's presence in export corn shipments was predictable to Syngenta, China's delay in approving the trait was not, and it was this delay that caused the delivery of U.S. corn shipments containing an unapproved trait.<sup>162</sup> With world-record corn production already driving prices down, the loss of the Chinese market caused a further drop in corn prices.<sup>163</sup>

China was the third-largest buyer of U.S. corn at the time it rejected the shipments.<sup>164</sup> The drop in price was calculated to be between ten and twenty cents per bushel.<sup>165</sup> The drop had serious economic consequences for farmers already operating on tight margins.<sup>166</sup> Initial reports estimated a \$1.14 billion loss to farmers nationwide.<sup>167</sup>

Farmers were not the only ones feeling the economic pinch after the rejected shipments. U.S. corn exporters lost as much as \$225 million due to the loss of the Chinese market and cost of redirecting shipments.<sup>168</sup> Trans Coastal Supply, a major grain exporter, was even forced into bankruptcy following China's rejection of Viptera.<sup>169</sup> With Syngenta in their crosshairs, U.S. farmers and exporters filed a class action lawsuit attempting to recover their economic losses, as well as to prevent other seed companies from making a similar mistake.

### C. *Lawsuit*

Two classes of plaintiffs brought suit against Syngenta: corn producers and corn sellers.<sup>170</sup> Both classes allege that Syngenta negligently commercialized Viptera without China's

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161. Plume, *supra* note 160.

162. Polansek, *supra* note 4.

163. Harris, *supra* note 5.

164. Polansek, *supra* note 4.

165. *Id.*

166. *Id.*

167. *Id.*

168. *Id.*

169. Jacob Bunge, *Grain Shipper Files for Bankruptcy, Citing Biotech-Corn Battle*, WALL STREET J. (Jul. 24, 2015), <http://www.wsj.com/articles/grain-shipper-files-for-bankruptcy-citing-biotech-corn-battle-1437767340> [<https://perma.cc/9MNH-F6CD>].

170. *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177, 1187 (D. Kan. 2015). Three individual milo growers are also involved in the suit with claims of economic damages because the milo market in the U.S. is tied to the corn market. *Id.*

approval.<sup>171</sup> The cases were consolidated into multidistrict litigation in the United States District Court for the District of Kansas.<sup>172</sup> All claims were based on a market loss theory that Syngenta's commercialization of Viptera before China's approval caused the market crash and subsequent damage to farmers' and grain exporters' economic interests.<sup>173</sup> Syngenta filed a motion to dismiss, and in September 2015, the court made an important ruling dismissing many of the claims.<sup>174</sup>

The court dismissed plaintiffs' trespass and nuisance claims because those claims required direct control.<sup>175</sup> The court reasoned that Syngenta did not exercise control over the product after commercialization so Syngenta could not have caused the physical intrusion of Viptera from commingling.<sup>176</sup> Importantly, the negligence claim survived the motion to dismiss.<sup>177</sup> In analyzing the negligence claim, the court found that Syngenta owed a duty to producers in how it commercialized Viptera.<sup>178</sup>

The complaint alleged that Syngenta owed a duty of general reasonable care to corn producers in how it went about commercializing Viptera.<sup>179</sup> Specifically, the plaintiffs alleged Syngenta owed a duty to farmers, marketers, and exporters to obtain China's import approval for Viptera prior to beginning sales in the United States.<sup>180</sup> In contrast, Syngenta argued that any duty must be narrower than a generalized duty, that Syngenta had no control over the actions of any parties utilizing the seed after it was sold, and that Syngenta could not

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171. Complaint, *supra* note 15, at 78. The sellers and producers also filed other claims against Syngenta, including nuisance, failure to warn, trespass to chattels, deceptive trade practices, tortious interference, and claims under the Lanham Act. *Id.*

172. *In re Syngenta*, 131 F. Supp. 3d at 1186.

173. Complaint, *supra* note 15, at 51–58.

174. *In re Syngenta*, 131 F. Supp. 3d at 1185.

175. *Id.* at 1209–17.

176. *Id.*

177. *Id.* at 1188–93.

178. *Id.* at 1188. The existence of a legal duty is question of law. RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 7(a) (AM. LAW. INST. 2010). Most courts frame their analyses in relation to duty because it is the court, as opposed to a jury, that decides questions of law, and the existence of a duty is a controlling element in a negligence claim. Jane Stapleton, *Legal Cause: Cause-in-Fact and the Scope of Liability for Consequences*, 54 VAND. L. REV. 941, 954 (2001).

179. Complaint, *supra* note 15, at 2–4.

180. *Id.*

control those parties to prevent any contamination.<sup>181</sup>

The court utilized the Restatement (Third) of Torts to analyze factors for imposing a general duty of reasonable care in the “timing, manner, and scope of Syngenta’s commercialization.”<sup>182</sup> The court focused heavily on foreseeability.<sup>183</sup> The key fact was Syngenta’s representation to the USDA recognizing that commingling can happen and promising to take precautions to prevent it.<sup>184</sup> The court utilized this representation to show that Syngenta did in fact foresee the harm that inevitably happened—the commingling of Viptera with non-Viptera corn.<sup>185</sup> Therefore, the court reasoned that “the law reasonably imposes a duty on a manufacturer to exercise reasonable care not to commercialize and sell its product in a way that creates a risk of widespread harm.”<sup>186</sup>

The court did not conclusively determine the existence of a legal duty, but it denied Syngenta’s dismissal motion, and the case now proceeds to trial on the surviving negligence claim.<sup>187</sup> In November 2015, forty-eight individual plaintiffs were selected from the corn producer class for bellwether trials.<sup>188</sup> The bellwether plaintiffs will proceed with their individual negligence claims against Syngenta to test the viability of claims on behalf of the entire class and determine whether the class action will proceed to trial.<sup>189</sup>

Although the negligence case is still pending, the lawsuit has already changed how seed companies go about commercializing new transgenic seed varieties.<sup>190</sup> Instead of

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181. *In re Syngenta*, 131 F. Supp. 3d at 1188.

182. *Id.* at 1188–89.

183. *Id.* at 1189.

184. *Id.*; Complaint, *supra* note 15, at 23.

185. *In re Syngenta*, 131 F. Supp. 3d at 1189.

186. *Id.* at 1191.

187. *See* Trader, *supra* note 25. Syngenta asserts that proximate cause cannot be established and that the economic loss doctrine precludes the negligence claim. *See generally*, Syngenta Memo, *supra* note 14. There is also a federal class claim related to the Lanham Act as well as some individual state business tort claims that remain part of the class action. Class Certification, *supra* note 26.

188. Trader, *supra* note 25.

189. *Id.*

190. *See, e.g.*, Jacob Bunge, *Biotech Seed Makers Try to Defuse Trade Uncertainties*, WALL STREET J. (Dec. 15, 2014, 1:39 PM), <http://www.wsj.com/articles/biotech-seed-makers-try-to-defuse-trade-uncertainties-1418668770> [<https://perma.cc/2PDB-SRFN>] (explaining that some companies have already made decisions not to commercialize new biotech varieties until China approves



solving the problem of premature commercialization, the lawsuit has exposed the true cause of the problem: China's delay and manipulation of transgenic seed approvals. This cause cannot be remedied by domestic tort liability.

### III. THE LIMITS OF LIABILITY

The lawsuit wholly ignores China's underlying actions in the Viptera fiasco and fails to address China's liability under international trade agreements. The Viptera case illustrates how China benefits from delaying approvals and how domestic tort liability is insufficient to remedy the root cause of the harm to farmers: opportunistic regulatory delay.

#### A. *China's Leverage*

China's worsening delay of transgenic seed approvals has created significant risks to U.S. agriculture. Unbeknownst to most people, China's consistent stalling affords it economic and technological leverage in global agribusiness. Delayed approvals give China a mechanism to opportunistically repudiate contracts for U.S. grain when prices are high or when its domestic production meets its annual needs.<sup>191</sup> The Viptera story demonstrates how China gains economic and technological leverage through delaying its approvals.

##### 1. Economic Leverage

In early 2013, China accepted nearly one million tons of corn containing traces of the unapproved Viptera trait.<sup>192</sup> But later in 2013, China rejected 1.45 million metric tons of U.S. corn because of the presence of the unapproved Viptera trait.<sup>193</sup> This caused a drop in corn prices.<sup>194</sup> Though previous

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them).

191. Henry I. Miller, *China's Threat to American Farm Exports*, HOOVER INST. (Mar. 18, 2014), <http://www.hoover.org/research/chinas-threat-american-farm-exports> [<https://perma.cc/6T7G-7ULV>].

192. *Id.*

193. *In re Syngenta AG MIR 162 Corn Litig.*, 131 F. Supp. 3d 1177, 1186 (D. Kan. 2015); see *Syngenta Seeds, Inc. v. Bunge N. Am., Inc.*, 820 F. Supp. 2d 953, 961 (N.D. Iowa 2011) (discussing China's "zero-tolerance" policy for unapproved genetic traits).

194. *In re Syngenta*, 131 F. Supp. 3d at 1186; see also Kelly Buchanan, *NGFA Estimates up to \$2.9 Billion Loss to U.S. Corn*, CGB NEWS (June 20, 2014),

shipments contained Viptera, after the record 2013 corn production year, China began testing for the Viptera trait in import shipments.<sup>195</sup> While lower corn prices provide a reasonable economic motive for rejecting the corn shipments, because rejecting the previously negotiated and higher priced U.S. corn contracts would allow China to purchase cheaper corn at current market price, China's domestic corn production points to another reason for the opportunistic breach.<sup>196</sup>

In 2013, China had a record domestic corn crop.<sup>197</sup> Looking at the circumstantial evidence, rejecting the high-priced U.S. corn contracts favored its domestic producers.<sup>198</sup> The economic motive is further supported by the fact that China likely was not concerned about the presence of Viptera because the smaller shipments that it purchased from South American countries after rejecting the U.S. shipments also contained Viptera.<sup>199</sup>

China's delayed approval of Viptera allowed the country to reserve the option of rejecting U.S. corn shipments when it was economically rational to do so.<sup>200</sup> As long as Viptera remained unapproved in China<sup>201</sup> but maintained a low-level presence in the U.S. corn supply, China could use its presence as justification for opportunistic breaches. Moreover, China could

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<https://www.cgb.com/newscenter/artmid/1048/articleid/132/ngfa-estimates-up-to-29-billion-loss-to-us-corn-soy-in-aftermath-of-trade-disruption-with-china-oer-detection-of-unapproved-syngenta-agrisure-vipteratm-mir-162-corn.aspx> [https://perma.cc/8L7Q-BY9M] (noting a projected depression of corn prices of eleven cents per bushel).

195. Syngenta Memo, *supra* note 14, at 16–17 (noting that the 2013–2014 season was “the world’s largest corn harvest in more than 50 years,” leading to a thirty-four percent price drop, after which China tested for Viptera presence as “a way out of millions of dollars of corn contracts that had been locked in at higher prices before the bumper crop”).

196. See Holm, *supra* note 110, at 582–83 (citing industry insiders speculating increased domestic production as the reason for rejecting the shipments).

197. U.S. Dep’t Agric. Econ. Research Serv., *China Corn Production Boosts 2012/2013 Output*, DROVERS: INDUSTRY (Dec. 13, 2012), <http://www.cattlenetwork.com/cattle-news/Global-increased-China-corn-production-boosts-20122013-output-183362131.html> [https://perma.cc/8XCE-M87M].

198. Syngenta Memo, *supra* note 14, at 13.

199. See Miller, *supra* note 191 (noting that China accepted corn from Argentina that included Viptera).

200. Syngenta Memo, *supra* note 14, at 14, 16.

201. China finally approved Viptera in 2014, five years after Syngenta applied for approval. Alison Rice, *China Approves MIR 162 Corn for Import*, AGWEB (Dec. 18, 2014), <http://www.agweb.com/article/update-china-approves-mir-162-corn-for-import-alison-rice/> [https://perma.cc/L262-XRCD].

potentially apply this same tactic to any trait currently under review because the longer China delays the approval, the more likely the trait will be present in low levels in the U.S. grain supply due to transgenic contamination.<sup>202</sup> Therefore, China has no motivation to speed up its approval process.

## 2. Technological Leverage

Not only does China receive an economic benefit by delaying U.S. seed approvals, but it also obtains technological leverage by acquiring more time to reverse engineer and commercialize its own traits.<sup>203</sup> China's technological leverage was showcased in a recent industrial espionage incident.<sup>204</sup> In 2011, a farmer in Iowa spotted two Chinese men kneeling in a research field plot digging up seedlings.<sup>205</sup> Further investigation uncovered several Chinese citizens involved in an attempt to smuggle transgenic seedlings back to China.<sup>206</sup>

Research and development of a transgenic seed is a lengthy and expensive process.<sup>207</sup> By stealing seedlings from U.S. seed companies, Chinese companies save significant time and money in commercializing their own version of the seed.<sup>208</sup> Therefore, delayed approvals of U.S. transgenic varieties gives Chinese companies more time to target and smuggle these seeds back to China to reverse engineer them.<sup>209</sup> If successful,

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202. This low-level presence may not be prevented by seed companies simply waiting for China's approval because there are possibilities for gene escape even prior to traits being marketed and grown by U.S. farmers. *See supra* note 115 and accompanying text.

203. Miller, *supra* note 191 ("Some speculate [China] is buying time to copy and steal the technology.").

204. John Eligon & Patrick Zuo, *Designer Seed Thought to Be Latest Target by Chinese*, N.Y. TIMES (Feb. 4, 2014), [http://www.nytimes.com/2014/02/05/us/chinese-implicated-in-agricultural-espionage-efforts.html?\\_r=0](http://www.nytimes.com/2014/02/05/us/chinese-implicated-in-agricultural-espionage-efforts.html?_r=0) [<https://perma.cc/V6VG-9TJJ>].

205. *Id.*

206. *Id.*

207. *Id.* ("One inbred line takes five to eight years of research and can cost \$30 million to \$40 million to develop.").

208. *See* Sean D. Murphy, *Biotechnology and International Law*, 42 HARV. INT'L L.J. 47, 61 (2001) ("[I]ntellectual property in genetically modified products must be protected in order to promote the costly research and development of such products.").

209. *See* Brian Wu, *How Chinese Corporate Espionage Affects American Agriculture*, MOTLEY FOOL (June 16, 2014, 9:13 PM), <http://www.fool.com/investing/general/2014/06/16/how-chinese-corporate-espionage-impacts-american-a.aspx> [<https://perma.cc/EP9U-85V9>] ("[China] encourage[s] corporate espionage

Chinese companies can commercialize seed versions for China's domestic production at the expense of U.S. seed companies and decrease export demand for U.S. grain.<sup>210</sup>

*B. Legal Duty Necessitates Immediate International Action*

Understanding China's exploitative trade practices highlights the chilling effect that the Viptera lawsuit will have on U.S. agriculture if China's approval process is left unaddressed. First, the legal duty created in the Viptera lawsuit transfers control over the transgenic seed commercialization process to China. Second, seed companies may be discouraged from investing in transgenic seed research and development. Lastly, future anticompetitive effects may ripple through the seed industry.

1. China's Veto Power

The most disturbing effect of the legal duty imposed on seed companies is that China will obtain veto power over the commercialization of newly developed transgenic seed varieties.<sup>211</sup> China's lagging approvals could now become the sole factor in determining when a seed company can commercialize a new seed hybrid.<sup>212</sup> Seed companies will be forced to wait for China's approval prior to commercialization or face the risk of class action liability in the event of export

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as a way of taking a shortcut to increased production without the years of research.”).

210. See Charles Riley, *Why China Is Stealing American Corn Seeds*, CNN (July 3, 2014, 11:20 PM), <http://money.cnn.com/2014/07/03/news/china-corn-espionage/> [<https://perma.cc/9GV9-MDZD>] (“[S]tolen technology could have played a role in boosting [China’s] domestic production.”). China’s government continues to deny its role in sponsoring or directing agricultural espionage. Julia Edwards, *In Iowa Corn Fields, Chinese National’s Seed Theft Exposes Vulnerability*, REUTERS: COMMODITIES (Apr. 11, 2016, 6:49 AM), <http://www.reuters.com/article/us-usa-china-seeds-idUSKCN0X80D6> [<https://perma.cc/ZL7R-9AQD>]. But other sources suggest China’s government is likely complicit in this espionage. See Jeff Stein, *May a Thousand Spies Bloom*, NEWSWEEK (Jan. 16, 2014, 6:58 PM), <http://www.newsweek.com/2014/01/17/may-thousand-spies-bloom-245082.html> [<https://perma.cc/S57K-Z9ZA>] Genetically engineered seeds were discovered in the luggage of a Chinese agricultural delegation. *Id.*

211. Miller, *supra* note 191.

212. Bunge, *supra* note 190.

issues.<sup>213</sup> If the delays continue, U.S. farmers will face delayed access to emerging seed technologies that increase yields and decrease pesticide costs.<sup>214</sup> Farmers rely on these new seed technologies to continue operating on a very thin profit margin.<sup>215</sup>

## 2. Transgenic Seed Research and Development

As long as transgenic traits remain difficult to contain, delaying regulatory approvals will continue to give China justification for rejecting U.S. corn shipments, even though the decision to turn away shipments is motivated by an attempt to gain an economic advantage. This is particularly concerning considering that transgenic contamination can happen during field trial stage.<sup>216</sup> If contamination happens pre-commercialization, then even if seed companies delay commercialization until China's approval, the trait may still maintain a low-level presence in export channels.<sup>217</sup> If China then rejects shipments due to the presence of the unapproved trait, the fact that the trait has not been commercialized will likely place liability for economic loss on the seed company.<sup>218</sup> This creates a precarious situation for seed companies because even if they wait for China's approval prior to commercializing a new trait, they remain exposed to liability if China's approval is so delayed that the trait still finds its way into export channels via other pre-commercialization activities.<sup>219</sup>

Seed companies understand the threat that China's delayed approval poses to their interests and the interests of

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213. *See id.* (explaining that some companies have already made decisions not to commercialize new biotech varieties until China approves them).

214. Kruff, *supra* note 9.

215. *See id.* (discussing increased profitability for farmers utilizing transgenic seed).

216. *See, e.g., In re Genetically Modified Rice Litig.*, 666 F. Supp. 2d 1004, 1014–15 (E.D. Mo. 2009) (discussing that contamination during the field trial stage would contaminate export channels with traits that have not even been approved in the United States).

217. *See id.* (genetically modified rice variety detected in the export channels before the company had commercialized the variety).

218. *See generally id.* (a stronger case for liability is likely in a scenario where USDA has not yet approved release of the trait because the actions prior to deregulated status are clearly within the seed company's control).

219. *See, e.g., id.* (detailing the fact that a trait can enter export channels via pre-commercialization activity).

their customers.<sup>220</sup> If left unaddressed, the U.S. government sends the message that it will not protect seed companies' interests from China's exploitation. Without reassurance from the U.S. government, seed companies may find launching new seed hybrids too risky and in some situations cost prohibitive. Discouraging this type of investment in the research and development of transgenic crops could threaten our ability to feed the ever-growing population of the future.<sup>221</sup>

### 3. Future Anticompetitive Effects

Global agribusiness has become a jumbled mess of proposed mergers and consolidations.<sup>222</sup> One surprising acquisition, especially in light of this Comment, is ChemChina's proposed buyout of Syngenta.<sup>223</sup> ChemChina is a state-owned agrochemical company.<sup>224</sup> If the buyout were successful, China would have even more opportunity to exploit the process for transgenic seed approvals.

China's manipulative practices in transgenic seed approvals have already been highlighted in Part III.<sup>225</sup> Given its history of manipulation, it seems likely that China would further attempt to manipulate the seed market if the opportunity arises. Therefore, if the proposed buyout were completed, China would have an interest in ensuring that any transgenic trait submitted to it by Syngenta would be quickly approved. Especially troubling in light of the seed developers' legal duty, is that the seed companies will effectively be in a race for China's approval to determine which company will first be allowed to commercialize the trait. If China expedites (or

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220. Syngenta Memo, *supra* note 14, at 42 ("Indeed, given that the U.S. is the world's largest corn exporter, Plaintiffs' position would give China the power to deny the biotechnology benefits of higher yields and lower prices not only to the United States, but also to much of the rest of the world.")

221. *See supra* text accompanying note 54.

222. Jim Wiesemeyer & Roger Bernard, *Grassley: Agriculture Consolidation Wave Has Become a Tsunami*, PRO FARMER: POLICY NEWS (Sept. 20, 2016, 4:58 PM), <http://www.profarmer.com/article/grassley-agriculture-consolidation-wave-has-become-a-tsunami-naa-jim-wiesemeyer-roger-bernard/> [<https://perma.cc/V53N-SRQN>].

223. Michael Shields & Greg Roumeliotis, *U.S. Clearance of ChemChina's Syngenta Deal Removes Key Hurdle*, REUTERS: COMMODITIES (Aug. 22, 2016, 6:39 PM), <http://www.reuters.com/article/us-syngenta-ag-m-a-chemchina-approval-idUSKCN10X0DS> [<https://perma.cc/HWM6-VVBH>].

224. *Id.*

225. *See supra* Part III.A.

simply does not delay) Syngenta's approvals, then Syngenta gains a competitive advantage. This is far from a promising situation for U.S. farmers who are already concerned with the competitive effects of pending agribusiness mergers and consolidations.<sup>226</sup>

China's delay of transgenic seed approvals caused the economic harm that triggered the lawsuit, and China now benefits from the legal duty imposed by the lawsuit. The legal duty imposed by the lawsuit has created an even more time-sensitive situation in dealing with the true problem: China. Leaving China's actions unaddressed will have a devastating effect on U.S. agriculture. The United States must enforce international trade agreements to address China's exploitative and anticompetitive trade practices.

#### IV. THE SOLUTION

In order to avoid stifling agricultural innovation, the United States must exert pressure on China to use its regulatory processes in good faith. China's abuse of its approval process triggered the *Viptera* litigation.<sup>227</sup> The United States must file a WTO complaint against China to enforce the SPS Agreement, which prohibits this kind of abuse. Curing China's undue delay in approvals will allow seed companies to make effective commercialization decisions. An international response will expose China's opportunistic actions, mandate compliance WTO agreements, and prevent deleterious effects that threaten the future of U.S. agriculture.

This Part provides a legal basis for a WTO complaint against China for violations of the SPS Agreement, which sets out basic rules for human, animal, and plant health and safety related to international trade.<sup>228</sup> In 2003, the United States, Canada, and Argentina successfully pursued a similar claim against the EU for the EU's general moratorium on biotech product approvals (the "*EC-Biotech*" case).<sup>229</sup> The WTO

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226. Wiesemeyer & Bernard, *supra* note 222.

227. Roberts & Bjerga, *supra* note 138.

228. Agreement on the Application of Sanitary and Phytosanitary Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 U.N.T.S. 493, <https://treaties.un.org/doc/Publication/UNTS/Volume%201867/volume-1867-I-31874-English.pdf> [<https://perma.cc/X9PK-5MWE>] [hereinafter SPS Agreement].

229. Panel Report, *European Communities—Measures Affecting the Approval*

complaint successfully ended the EU's moratorium;<sup>230</sup> as such, the analysis and outcome of *EC-Biotech* will be instructive in setting out a claim against China regarding its transgenic seed approvals.<sup>231</sup> Section A introduces the WTO dispute process. Section B introduces the SPS Agreement and highlights applicable provisions. Section C uses *EC-Biotech* to provide an analysis and interpretation of applicable SPS Agreement provisions. Section D applies the provisions to China's conduct. Section E discusses counterarguments and explains why immediate action is required to save the future of U.S. agriculture.

#### A. World Trade Organization Dispute Settlement

China joined the WTO in 2001.<sup>232</sup> WTO members agree to be bound by a multitude of agreements that govern member actions.<sup>233</sup> The SPS Agreement requires WTO members to process biotechnology applications without undue delay and to base their SPS measures on scientific evidence.<sup>234</sup>

In 1994, 123 nations signed an agreement that superseded the General Agreement on Tariffs and Trade (GATT) and created the WTO as the organization responsible for promoting international trade.<sup>235</sup> The United States was an initial member of the GATT and became a member of the WTO at its creation, but China more recently became a member of the

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*and Marketing of Biotech Products*, WTO Docs. WT/DS291/R, WT/DS292/R, WT/DS293/R (adopted Sept. 29, 2006), [https://www.wto.org/english/news\\_e/news06\\_e/291r\\_e.htm](https://www.wto.org/english/news_e/news06_e/291r_e.htm) [<https://perma.cc/BVM7-P46K>]; see also CTR. FOR INT'L ENVTL. LAW, *EC-BIOTECH: OVERVIEW AND ANALYSIS OF THE PANEL'S INTERIM REPORT* (2006) [hereinafter CIEL] (summarizing the Panel's Interim Report).

230. Debra M. Strauss, *Feast or Famine: The Impact of the WTO Decision Favoring the U.S. Biotechnology Industry in the EU Ban of Genetically Modified Foods*, 45 AM. BUS. L.J. 775, 776 (2008).

231. Andrew Thomison, *A New and Controversial Mandate for the SPS Agreement: The WTO Panel's Interim Report in the E.C.-Biotech Dispute*, 32 COLUM. J. ENVTL. L. 287, 294–95 (2007).

232. *China and the WTO*, WTO, [https://www.wto.org/english/thewto\\_e/countries\\_e/china\\_e.htm](https://www.wto.org/english/thewto_e/countries_e/china_e.htm) (last visited Nov. 13, 2016) [<https://perma.cc/8DFL-PUCX>].

233. *Overview: A Navigational Guide*, WTO, [https://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/agrml\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrml_e.htm) (last visited Nov. 13, 2016) [<https://perma.cc/AMM5-X43H>].

234. SPS Agreement, *supra* note 228, 1867 U.N.T.S. at 494, 506.

235. *The Uruguay Round*, WTO, [https://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/fact5\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact5_e.htm) (last visited Nov. 13, 2016) [<https://perma.cc/2VCA-F8W9>].



WTO in 2001.<sup>236</sup> The agreement that created the WTO also established a process for dispute settlement.<sup>237</sup> As a member, China agrees to be bound by the WTO agreements and the decisions of the Dispute Settlement Body (DSB).<sup>238</sup> The DSB consists of representatives of all WTO member countries.<sup>239</sup>

The DSB convenes a panel of three to five experts from different member countries to hear a case once a complaint has been filed.<sup>240</sup> The panel conducts hearings similar to a trial and creates a report similar to a judicial opinion.<sup>241</sup> The panel's report is not the final adjudication on the dispute; the DSB ultimately retains authority in ruling on the case and adopting the panel report.<sup>242</sup> But the panel's decisions are difficult to overturn because the panel's report can be rejected only by unanimous consent of the DSB.<sup>243</sup> If the DSB adopts the panel's report, the report becomes the official ruling and parties can then appeal the report to the seven-member Appellate Body.<sup>244</sup> The panel first looks to the governing WTO agreement related to the dispute, in our case, the SPS Agreement.

*B. Agreement on the Application of Sanitary and Phytosanitary Measures*

The SPS Agreement is one of many agreements within the WTO.<sup>245</sup> The SPS agreement's main focus is allowing signatory countries to promote human, plant, and animal health and safety while ensuring the measures utilized aren't simply a disguised barrier to international trade.<sup>246</sup> The SPS Agreement

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236. *China and the WTO*, *supra* note 232.

237. Rachel Brewster, *Shadow Unilateralism: Enforcing International Trade Law at the WTO*, 30 U. PA. J. INT'L L. 1133, 1138 (2009).

238. *The WTO in Brief*, WTO, [https://www.wto.org/english/thewto\\_e/whatis\\_e/inbrief\\_e/inbr00\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/inbrief_e/inbr00_e.htm) (last visited Nov. 13, 2016) [<https://perma.cc/J6L8-N2LA>].

239. WORLD TRADE ORG., UNDERSTANDING THE WTO 56, [https://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/utw\\_chap3\\_e.pdf](https://www.wto.org/english/thewto_e/whatis_e/tif_e/utw_chap3_e.pdf) (last visited Nov. 13, 2016) [<https://perma.cc/T43Q-9NSG>].

240. *Id.* at 55.

241. *Id.* at 57.

242. *Id.* at 56.

243. *Id.* at 57.

244. *Id.*

245. *Understanding the WTO Agreement on Sanitary and Phytosanitary Measures*, WTO (May 1998), [https://www.wto.org/english/tratop\\_e/sps\\_e/spsund\\_e.htm](https://www.wto.org/english/tratop_e/sps_e/spsund_e.htm) [<https://perma.cc/B9DM-9AJH>].

246. *Id.*

doesn't require member countries to adopt a specific international standard (because of varying climate and food conditions) but requires that any measures undertaken be justified by objective and accurate scientific evidence.<sup>247</sup> Two provisions are particularly applicable in setting out a complaint against China: Annex C and Article 2.3.

Annex C of the SPS Agreement is the procedural provision governing the timing of biotechnology approvals.<sup>248</sup> It requires that approval procedures be "undertaken and completed without undue delay."<sup>249</sup> Article 2.3 of the SPS agreement addresses the substance of *measures* under the SPS Agreement and how they are applied.<sup>250</sup> Annex A defines measures to "include all relevant laws, decrees, regulations, requirements and procedures including . . . certification and approval procedures."<sup>251</sup> Under Article 2.3, measures "shall not be *applied* in a manner which would constitute a disguised restriction on international trade."<sup>252</sup> Further, measures cannot be applied in a way to "arbitrarily or unjustifiably discriminate between Members . . . including between their own territory and that of other Members."<sup>253</sup> The standards embodied in the text of these Articles are best understood through analysis of previous DSB panel reports.

### C. Analysis

DSB rulings are binding only on the parties involved, but the panel's analysis in prior analogous cases provides valuable insight.<sup>254</sup> The *EC-Biotech* panel analyzed the meaning of "undue" in regards to a delay.<sup>255</sup> In analyzing dictionary definitions, the panel determined the appropriate analysis was whether there was "unjustifiable loss of time."<sup>256</sup> The panel

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247. SPS Agreement, *supra* note 228, 1867 U.N.T.S. at 496.

248. *Id.* at 506–07.

249. *Id.*

250. *Id.* at 494.

251. *Id.* at 501–02.

252. *Id.* at 494 (emphasis added).

253. *Id.*

254. *Legal Effect of Panel and Appellate Body Reports and DSB Recommendations and Rulings*, WTO, [https://www.wto.org/english/tratop\\_e/dispu\\_e/dispu\\_settlement\\_cbt\\_ec7s1p1\\_e.htm](https://www.wto.org/english/tratop_e/dispu_e/dispu_settlement_cbt_ec7s1p1_e.htm) (last visited Nov. 13, 2016) [<https://perma.cc/EAZ6-UGU3>].

255. CIEL, *supra* note 229, at 29–30.

256. *Id.* at 29.

employed two factors in its analysis: the reasons for delay and duration of the delay.<sup>257</sup> Reasons for delay were given more weight in the panel's analysis.<sup>258</sup> The panel further found that particular procedures would likely need to be analyzed on a case-by-case basis, but the main obligation described in Annex C is that of "good faith" in completing approvals.<sup>259</sup>

The standard used by the panel in determining the reasons for delay was whether the delay was used to "evade the obligations to be observed in respect of substantive SPS measures."<sup>260</sup> The EU delayed approval not because of a substantive scientific risk but because of a public policy debate over whether it should import genetically modified products at all.<sup>261</sup> The panel determined the EU's delay did not conform to the objectives of the SPS Agreement and constituted an undue delay.<sup>262</sup>

The complaint also alleged violations of Article 2.3.<sup>263</sup> But the panel determined that the moratorium did not constitute a "measure" within the meaning of Annex A, so Article 2.3 did not apply.<sup>264</sup> The panel reasoned that the "general moratorium was not a substantive decision to reject all applications, but rather was more akin to a procedural decision . . . regarding the timing and application of such a procedure."<sup>265</sup>

#### *D. Application*

The application of the "undue delay" clause requires that once an application is received, it must be started *and* completed without undue delay.<sup>266</sup> Further, reasons for delay must align with or promote the underlying objects of the SPS Agreement. China's seed approvals are clearly experiencing a delay, so the question remains if it is "undue."

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257. *Id.*

258. *Id.* at 30.

259. *Id.*

260. Gregory Shaffer, *A Structural Theory of WTO Dispute Settlement: Why Institutional Choice Lies at the Center of the GMO Case*, 41 N.Y.U. J. INT'L L. & POL. 1, 88 (2008).

261. CIEL, *supra* note 229, at 30–31.

262. *Id.*

263. Thomison, *supra* note 231, at 300–01.

264. *Id.*

265. *Id.* at 300–01.

266. CIEL, *supra* note 229, at 29.

China took sixty months to approve Viptera.<sup>267</sup> Compared to the normal approval time of forty months, this constitutes a delay.<sup>268</sup> China's approval process builds in an inherent delay for every request by requiring that an applicant's home country approve the new seed before it will even begin to process an application.<sup>269</sup> When China attempts to gain a trade advantage by further delaying approval, that delay is undue. One of China's top biotechnology regulatory committee members has "admitted that trade issues play a role in its approval process."<sup>270</sup> Under *EC-Biotech*, such a delay is undue because gaining a trade advantage is not one of the objectives of the substantive SPS measures. Further, China is currently attempting to finalize a new approval process that explicitly states that it will consider "scientific, economic, and social factors" in deciding whether to grant approvals.<sup>271</sup> If the new process is finalized and consideration of social and economic factors leads to delays in approval, those delays would be undue under *EC-Biotech*.<sup>272</sup> China's approval process considers, and is largely based on, factors clearly outside the scope of SPS Agreement. Therefore, China's biotechnology approvals are not undertaken and completed without undue delay.

China's approval procedures provide a more compelling case for violation of Article 2.3 than did the EU's general moratorium. While delay in approval is procedural, and so not afforded scrutiny as a substantive measure under the SPS

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267. Rice, *supra* note 201.

268. Complaint, *supra* note 15, at 2 ("[T]he average time for regulatory approval in China is 40 months.").

269. Sonja Begemann, *Chinese Roadblock Prevents U.S. Farmers' Access to New Technology*, AGWEB (Nov. 29, 2016, 4:40 PM), <http://www.agweb.com/article/chinese-roadblock-prevents-us-farmers-access-to-new-technology-naa-sonja-begemann/> [<https://perma.cc/UZN3-QQYC>] ("China is still the only major importing country that refuses to start its biotech process until the U.S. or another country completes that process.") (quoting U.S. Trade Representative Michael Froman).

270. Miller, *supra* note 191.

271. Dominique Patton, *Chinese GMO Law Could Further Delay Approval of New Crops - Industry*, REUTERS (May 22, 2015, 12:13 AM), <http://www.reuters.com/article/2015/05/22/china-gmo-idUSL3N0Y92J920150522#o3ilUeWKMmrZY0HYW.97> [<https://perma.cc/2Y6Y-9K5S>].

272. CIEL, *supra* note 229, at 33. Though not directly related to the exploitative issues in this Comment, China's legislation directing the use of factors outside of the objective scientific based risk assessment mandated in the SPS Agreement could also provide the basis for a general violation of Article 5. SPS Agreement, *supra* note 228, 1867 U.N.T.S. at 496-97.

Agreement,<sup>273</sup> the overall implementation of China's seed approval process should be considered a measure under Annex A of the SPS Agreement,<sup>274</sup> especially once the new legislation solidifies the consideration of economic and social factors in making biotechnology approval decisions.<sup>275</sup> Article 2.3 mandates that China cannot use its approval procedure to "arbitrarily or unjustifiably discriminate between Members . . . including between their own territory and that of other Members."<sup>276</sup> Thus, China's practice of applying measures in a protectionist way and reserving the ability for opportunistic breaches of grain contracts is a violation of Article 2.3.<sup>277</sup>

A WTO claim against China would directly address the underlying cause of the *Viptera* lawsuit—China's opportunistic delay of seed approvals. Seed companies can make reasonable commercialization decisions when international market actors play by the rules.<sup>278</sup> China's manipulation of these rules has far-reaching consequences. Therefore, China's transgenic seed approval delays must be addressed by the United States through the WTO. A WTO complaint for violations of the SPS Agreement would send a message to international actors that the United States will take action against disguised violations and could deter potential violations in the future.<sup>279</sup>

#### *E. Less Successful Alternatives*

An international legal action is a significant undertaking and may seem like a daunting solution. But the international solution is the only solution that effectively addresses all issues implicated by the *Viptera* chain of events. Alternative

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273. Thomison, *supra* note 231, at 300–01 ("A general moratorium was not a substantive decision to reject all applications, but rather was more akin to a procedural decision . . . regarding the timing and application of such a procedure.") (citing panel report).

274. The legislation stating the factors used in processing biotechnology approvals would constitute a "regulation" or "procedure." SPS Agreement, *supra* note 228, 1867 U.N.T.S. at 501.

275. *See supra* text accompanying note 271.

276. SPS Agreement, *supra* note 228, 1867 U.N.T.S. at 494.

277. *Id.*

278. *See* Roberts & Bjerga, *supra* note 138 (noting that a predictable approval processes allows for a "smooth global rollout of new seeds").

279. *See* ROBERT D. ATKINSON, INFO. TECH. & INNOVATION FOUND., ENOUGH IS ENOUGH: CONFRONTING CHINESE INNOVATION MERCANTILISM 12 (Feb. 2012) (advocating for a more assertive United States Trade Representative).

arguments either are not feasible without completely restructuring the U.S. grain market, or they fail to address the underlying international issues.

### 1. Channeling Seed Traits

Channeling transgenic traits once the grain is harvested seems like an easy way to ensure traits are contained and to prevent commingling. This would require seed companies to impose restrictions on consumers that would channel traits away from main export channels. The *Starlink* case is a perfect example of why channeling is not effective.<sup>280</sup> In *Starlink*, a corn trait was approved for animal but not human consumption.<sup>281</sup> The EPA imposed requirements on the seed company, Aventis, to channelize the seed to ensure that the trait did not end up in grain channels destined for human consumption.<sup>282</sup>

Aventis informed only a limited number of farmers and downplayed the importance of segregation in speculating the EPA would soon approve Starlink for human consumption.<sup>283</sup> Sure enough, in 2000, the Starlink trait was found in human food products while the EPA had still not yet approved the trait for human consumption.<sup>284</sup> Aventis's actions likely played a part in the transgenic contamination in the *Starlink* case, but company adherence to channeling responsibilities would be very hard to police because seed sales involve a private contract with an independent producer. Also, the risk of transgenic contamination through pollen drift or accidental delivery further complicates attempts to channel a trait.<sup>285</sup>

The other channeling option would be imposing requirements downstream on the farmers and local grain elevators to channel and segregate various traits.<sup>286</sup> This

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280. *In re Starlink Corn Prods. Liab. Litig.*, 212 F. Supp. 2d 828 (N.D. Ill. 2002).

281. *Id.* at 834.

282. *Id.*

283. *Id.* at 835.

284. *Id.*

285. *See id.* (failed attempt to channelize Starlink); *see also In re Genetically Modified Rice Litig.*, 666 F. Supp. 2d 1004 (E.D. Mo. 2009) (unapproved rice trait escaped field research plots and contaminated U.S. rice supply); Complaint, *supra* note 15, at 35 ("The concept of 'channeling' does not work in practice.").

286. IFIC Foundation, *The Unknown Costs of Food Production: One Farmer's Perspective on the Impacts on Food Production Costs of Labeling Foods Produced*

solution would force local elevators to selectively accept certain hybrids in an attempt to keep each hybrid separated. Farmers typically deliver grain only to their local elevator. Local elevators would have to completely change their intake infrastructure and have separate storage bins for each different trait.<sup>287</sup> The large investment required to make these changes would be cost prohibitive.<sup>288</sup> Further, the benefit of such restructuring is questionable, given how easily channeling measures can be rendered ineffective. A single transgenic contamination, from pollen drift or accident, would render the entire system ineffective.<sup>289</sup>

## 2. Include Export Approval in USDA Deregulation Petition

Notice and comment rulemaking to impose further requirements, such as export approval, prior to the USDA granting deregulated status, would also be ineffective. First, guidance through rulemaking is difficult to initiate and it is even more difficult to obtain a final rule.<sup>290</sup> A final rule would need the flexibility to address changing international grain import demand to delineate key export markets on an annual basis. But even if key markets are set each year, the *Viptera* case demonstrates that countries can quickly change import needs.<sup>291</sup> Second, the solution fails to address the underlying international issues. As mentioned above, imposing restrictions that delay transgenic commercialization based on international

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*through Biotechnology*, FOOD INSIGHT (July 10, 2014), <http://www.foodinsight.org/newsletters/unknown-costs-food-production-one-farmer's-perspective-impacts-food-production-costs> [<https://perma.cc/3CEC-XAHE>] (explaining the harvesting and segregation process).

287. *Id.*

288. *Id.* (“[A]dding the necessary infrastructure to provide for true traceability may not even be feasible.”).

289. ALAN MCHUGHEN, PANDORA’S PICNIC BASKET: THE POTENTIAL AND HAZARDS OF GENETICALLY MODIFIED FOODS 166 (2000) (“Gene escape is a fact of nature.”); BULLOCK ET AL., *supra* note 121, at 9 (asserting that even attempting to change the infrastructure at local elevators to segregate and store transgenic grain and non-transgenic grain would be cost prohibitive).

290. See Richard J. Pierce, Jr., *Response, Presidential Control Is Better than the Alternatives*, 88 TEX. L. REV. 113, 116–17 (2010) (describing notice and comment as too burdensome).

291. Syngenta Memo, *supra* note 14, at 10 (China was not a key market when Syngenta commercialized *Viptera*).

approvals will tie the hands of U.S. seed companies.<sup>292</sup>

*F. Why No Action?*

So, why has the United States Trade Representative (USTR) refrained from filing a WTO complaint against China? International politics play a large role in whether to file a WTO complaint. The allegations in a complaint may anger the opposing country and cause heightened trade tensions.<sup>293</sup> This is a particularly sensitive issue when dealing with a vital trade partner, like China is to the U.S.<sup>294</sup> But the recent announcement of WTO complaints against China for domestic agricultural subsidies shows that the USTR is prepared to take on China's anticompetitive practices in the agricultural sector.<sup>295</sup> Therefore, the WTO complaint outlined in Part IV of this Comment should be filed in response to China's other objectionable trade practices, including its opportunistic delay of seed approvals.

CONCLUSION

In a functioning international regulatory scheme, a trait with full U.S. regulatory approval should cause no adverse economic consequences.<sup>296</sup> But when one country delays approval of such a trait, the international regulatory scheme falls apart. The *Viptera* lawsuit is an attempt to find a domestic solution to an international problem. But the legal duty imposed by the lawsuit is actually making the international problem worse. China's exploitation of its transgenic seed approval process cost the U.S. farm economy billions of dollars and continues to threaten the future of U.S. agriculture.

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292. See Miller, *supra* note 191.

293. CHRISTINA L. DAVIS, WHY ADJUDICATE?: ENFORCING TRADE RULES IN THE WTO 294 (2012).

294. See *id.* at 179 (noting that a former general counsel to the Office of the United States Trade Representative feels that "the issue [of retribution is] more substantial regarding China").

295. Jeff Wilson, *U.S. Files WTO Case Against Chinese Agricultural Subsidies*, BLOOMBERG (Sept. 13, 2016), <http://www.bloomberg.com/news/articles/2016-09-13/u-s-files-wto-trade-case-against-chinese-agricultural-subsidies> [https://perma.cc/29A8-4K2S].

296. *Viptera* is the first case dealing with economic effects after full U.S. regulatory approval.



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Procedural and substantive violations of the WTO's SPS Agreement must be addressed by the United States through the WTO dispute process. A WTO complaint would put China on notice that the United States will take action to maintain the integrity of the commercialization process.<sup>297</sup> Once China's approval delay is addressed, seed companies will be able to make effective commercialization decisions allowing expeditious delivery of the latest transgenic technology to U.S. farmers.

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297. C. Dean McGrath Jr., *Free Trade and U.S. Corn are in the Crosshairs*, STARTRIBUNE: BUSINESS (Jan. 2, 2015, 10:00 PM), <http://www.startribune.com/business-forum-free-trade-and-u-s-corn-are-in-the-cross-hairs/287393601/> [<https://perma.cc/XBD7-JUPX>].