Nos. 19-72109, 19-72280

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

CENTER FOR FOOD SAFETY and POLLINATOR STEWARDSHIP COUNCIL, *et al.*,

Petitioners,

v.

ANDREW WHEELER, *et al.*,

Respondents,

and

CORTEVA AGRISCIENCE LLC,

Respondent-Intervenor.

On Petition for Review of Agency Action
of the United States Environmental Protection Agency

MOTION OF NATIONAL COTTON COUNCIL, AMERICAN SOYBEAN ASSOCIATION, NATIONAL SORGHUM PRODUCERS, AMERICAN FARM BUREAU FEDERATION, NATIONAL CORN GROWERS ASSOCIATION, NATIONAL ALFALFA & FORAGE ALLIANCE, AMERICAN SUGARBEET GROWERS ASSOCIATION, FLORIDA CITRUS MUTUAL, FLORIDA FRUIT & VEGETABLE ASSOCIATION, AND NATIONAL POTATO COUNCIL TO FILE AMICUS CURIAE BRIEF IN SUPPORT OF RESPONDENT ENVIRONMENTAL PROTECTION AGENCY

Sarah Gunn
BRADLEY ARANT BOULT CUMMINGS LLP
One Federal Place
1819 5th Avenue North
Birmingham, Alabama 35203
Tel: (205) 521-8024
sgunn@bradley.com

Bartholomew J. Kempf
Edmund S. Sauer
BRADLEY ARANT BOULT CUMMINGS LLP
1600 Division Street, Suite 700
Nashville, Tennessee 32703
Tel: (615) 252-2374
bkempf@bradley.com
esauer@bradley.com

Counsel for Amici Curiae

Pursuant to Federal Rule of Appellate Procedure 29(a) and Ninth Circuit Rule 29, the National Cotton Council, American Soybean Association, National Sorghum Producers, American Farm Bureau Federation, National Corn Growers Association, National Alfalfa & Forage Alliance, American Sugarbeet Growers Association, Florida Citrus Mutual, Florida Fruit & Vegetable Association, and National Potato Council (together, "the Growers") respectfully request leave to file the attached amicus curiae brief in support of Respondent Environmental Protection Agency. The proposed amicus brief is attached as Exhibit 1. In support of this motion, the Growers state as follows:

1. Amici are ten agricultural trade associations representing hundreds of thousands of farmers, ranchers, and their families throughout the United States. Growers cultivate, market, and sell field crops such as cotton, sorghum, soybeans, corn, and sugarbeets and specialty crops such as alfalfa seed, fruits, and vegetables. These Growers also own, manage, and act as stewards for hundreds of millions of acres of farmland nationwide.

2. The National Cotton Council of America is the trade association for the U.S. cotton industry. Its mission is to ensure that all U.S. cotton segments can compete effectively and profitably in the raw cotton, oilseeds, and manufactured textile product markets at home and abroad.

3. The American Soybean Association is a national, private, not-for-profit trade association representing more than 500,000 soybean growers in 30 states on domestic and international issues of importance to the soybean industry.

4. The National Sorghum Producers is a national association representing sorghum farmers for over 60 years on legislative and regulatory issues impacting the sorghum industry.

5. The American Farm Bureau Federation is a voluntary farm organization formed in 1919 to protect, promote, and represent the business, economic, social, and educational interests of American farmers and ranchers.

6. Founded in 1957, the National Corn Growers Association is the trade association for U.S. corn growers. It represents the interests of more than 300,000 individuals to create and increase opportunities for corn growers.

7. The National Alfalfa & Forage Alliance is an organization of state and regional alfalfa seed and alfalfa hay associations, genetic suppliers, seed marketers, and allied industry members.

8. The American Sugarbeet Growers Association ("ASGA") unites sugarbeet growers in the United States and promotes the common interests of state and regional beet grower associations. ASGA represents 10,000 family farmers in all 11 states that produce sugarbeets.

9. Florida Citrus Mutual is the largest cooperative association dedicated to helping Florida citrus growers produce and market their crops.

10. Founded in 1943, the Florida Fruit & Vegetable Association is a full-service specialty crop organization serving Florida's grower-shipper community. It represents a broad range of crops, including citrus, vegetables, tropical fruit, berries, sod, sugar cane, and tree crops.

11. The National Potato Council represents the interests of U.S. potato growers on legislative, regulatory, environmental, and trade issues. The value of U.S. potato production is over $4.5 billion annually and supports hundreds of thousands of jobs both directly and indirectly.

12. Growers rely heavily on sulfoxaflor, the insecticide at issue in this case, due to its unique mode of action, which is the chemical mechanism by which a pesticide acts on a pest. Sulfoxaflor is uniquely and highly effective against destructive sap-feeding insects, including those that have developed resistance to other insecticides.

13. Growers support EPA's request that the Court remand the sulfoxaflor registrations *without* vacatur. Vacating the sulfoxaflor registrations would have immediate and substantial adverse consequences, impeding Growers' ability to sustain the crop production necessary to meet the growing global demand for food and agricultural products. Vacatur would deprive Growers of a critical tool

necessary to combat sap-feeding insects and frustrate their ability to employ effective and sustainable insecticide resistance management and integrated pest management.

14. Vacatur would also result in significant economic losses for Growers, particularly for crops like cotton, sorghum, alfalfa grown for seed, strawberries, and cucurbits. And vacatur would likewise detrimentally affect Growers' efforts to operate their farms in an environmentally sustainable manner, by stripping away a product that is less toxic than some alternative insecticides that can pose a greater risk to protected species and pollinators.

15. The Growers' first-hand experience places them in a unique position to provide the Court with helpful practical information about the importance of these legal issues.

16. Counsel for amici curiae attempted to obtain consent from all parties before filing this motion. Respondent EPA and Respondent-Intervenor Corteva Agriscience LLC consent to the filing of the brief. Petitioners have advised the undersigned that they take no position on the motion.

17. Accordingly, the Growers respectfully request leave to file the amicus curiae brief attached to this motion.

Respectfully submitted,

s/Edmund S. Sauer

Bartholomew J. Kempf
Edmund S. Sauer
BRADLEY ARANT BOULT CUMMINGS LLP
1600 Division Street, Suite 700
Nashville, TN 37203
(615) 252-2374
esauer@bradley.com
bkempf@bradley.com

Sarah Gunn
BRADLEY ARANT BOULT CUMMINGS LLP
One Federal Place
1819 5th Avenue North
Birmingham, Alabama 35203
Tel: (205) 521-8024
sgunn@bradley.com

Counsel for Amici Curiae

CERTIFICATE OF COMPLIANCE

I certify that pursuant to Federal Rules of Appellate Procedure 27(d)(2)(A) and 32(g)(1), this motion has been prepared in a proportionally spaced typeface, 14-point Times New Roman font, and contains 765 words.

Dated: April 22, 2021

s/Edmund S. Sauer
Edmund S. Sauer

CERTIFICATE OF SERVICE

I hereby certify that on April 22, 2021, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system which will send notification of such filing to all registered CM/ECF users.

s/Edmund S. Sauer
Edmund S. Sauer

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BRADLEY ARANT BOULT CUMMINGS LLP
1600 Division Street, Suite 700
Nashville, Tennessee 32703
Tel: (615) 252-2374
bkempf@bradley.com
esauer@bradley.com

Counsel for Amici Curiae

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1, the National Cotton Council, American Soybean Association, National Sorghum Producers, American Farm Bureau Federation, National Corn Growers Association, National Alfalfa & Forage Alliance, American Sugarbeet Growers Association, Florida Citrus Mutual, Florida Fruit & Vegetable Association, and National Potato Council, state that none of them has a parent corporation, nor does any publicly held corporation own 10% or more of the stock of any of them.

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INTEREST OF AMICI CURIAE[1]

Amici are ten agricultural trade associations (together, "the Growers") representing hundreds of thousands of farmers, ranchers, and their families throughout the United States. Growers cultivate, market, and sell field crops such as cotton, sorghum, soybeans, corn, and sugarbeets and specialty crops such as alfalfa seed, fruits, and vegetables. These Growers also own, manage, and act as stewards for hundreds of millions of acres of farmland nationwide.

The combined value of crops included in the sulfoxaflor registrations at issue in this litigation is staggering: These crops are worth approximately $123 billion each year—nearly two-thirds of total crop production in the United States.[2] Growers rely heavily on sulfoxaflor due to its unique mode of action, which is the chemical mechanism by which a pesticide acts on a pest.[3] Sulfoxaflor is uniquely and highly

[1] This brief is submitted with a motion for leave under Circuit Rule 29. Amici affirm that no counsel for a party authored this brief in whole or in part and that no person other than amici, their members, or their counsel has made any monetary contributions intended to fund the preparation or submission of this brief. Fed. R. App. P. 29.

[2] Declaration of Paul D. Mitchell, Ph.D. (hereinafter "Mitchell Decl."), attached as Doc. 52-3 to Intervenor Dow Agrosciences LLC's Response in Support of Respondents' Motion for Voluntary Remand Without Vacatur, ¶ 19 (citing USDA, *Crop Values: 2019 Summary* (Feb. 2020), https://www.nass.usda.gov/Publications/Todays_Reports/reports/cpvl0220.pdf).

[3] *Id*. ¶ 41.

effective against destructive sap-feeding insects, including those that have developed resistance to other insecticides.[4]

Growers support EPA's request that the Court remand the sulfoxaflor registrations *without* vacatur. Vacating the sulfoxaflor registrations would have immediate and substantial adverse consequences, impeding Growers' ability to sustain the crop production necessary to meet the growing global demand for food and agricultural products. Vacatur would deprive Growers of a critical tool necessary to combat sap-feeding insects and frustrate their ability to employ effective and sustainable insecticide resistance management and integrated pest management. Vacatur would also result in significant economic losses for Growers, particularly for crops like cotton, sorghum, alfalfa grown for seed, strawberries, and cucurbits.[5] And vacatur would likewise detrimentally affect Growers' efforts to operate their farms in an environmentally sustainable manner, by stripping away a product that is less toxic than some alternative insecticides that can pose a greater risk to protected species and pollinators. For these reasons, amici request that this Court remand the sulfoxaflor registrations without vacatur.

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[4] Thomas C. Sparks, et. al., *Sulfoxaflor and sulfoximine insecticides: Chemistry, mode of action and basis for efficacy on resistant insects*, 107 Pesticide Biochemistry & Physiology 1, 1 (2013), https://www.sciencedirect.com/science/article/pii/S0048357513000989.

[5] *See* Declaration of Dr. Clayton T. Myers, USDA (hereinafter "USDA Decl."), attached to Doc. 87, EPA's Brief, ¶¶ 17, 19, 23, 26, 29, 38.

Amici include the following ten organizations:

- The National Cotton Council of America is the trade association for the U.S. cotton industry. Its mission is to ensure that all U.S. cotton segments can compete effectively and profitably in the raw cotton, oilseeds, and manufactured textile product markets at home and abroad.[6]

- The American Soybean Association is a national, private, not-for-profit trade association representing more than 500,000 soybean growers in 30 states on domestic and international issues of importance to the soybean industry.[7]

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- The National Alfalfa & Forage Alliance is an organization of state and regional alfalfa seed and alfalfa hay associations, genetic suppliers, seed marketers, and allied industry members.[11]

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[6] *See* National Cotton Council, http://www.cotton.org/about/index.cfm and http://www.cotton.org/about/benefits.cfm (both last visited April 22, 2021).

[7] *See* American Soybean Association, https://soygrowers.com/ (last visited April 22, 2021).

[8] *See* National Sorghum Producers, https://sorghumgrowers.com/ (last visited April 22, 2021).

[9] *See* American Farm Bureau Federation, https://www.fb.org/about/overview (last visited April 22, 2021).

[10] *See* National Corn Growers Association, http://www.ncga.com/about-ncga/mission-vision (last visited April 22, 2021).

[11] *See* National Alfalfa & Forage Alliance, https://www.alfalfa.org/aboutus.php (last

- The American Sugarbeet Growers Association ("ASGA") unites sugarbeet growers in the United States and promotes the common interests of state and regional beet grower associations. ASGA represents 10,000 family farmers in all 11 states that produce sugarbeets.[12]

- Florida Citrus Mutual is the largest cooperative association dedicated to helping Florida citrus growers produce and market their crops.[13]

- Founded in 1943, the Florida Fruit & Vegetable Association is a full-service specialty crop organization serving Florida's grower-shipper community. It represents a broad range of crops, including citrus, vegetables, tropical fruit, berries, sod, sugar cane, and tree crops.[14]

- The National Potato Council represents the interests of U.S. potato growers on legislative, regulatory, environmental, and trade issues. The value of U.S. potato production is over $4.5 billion annually and supports hundreds of thousands of jobs both directly and indirectly.[15]

These organizations provide this amicus brief to describe the threatened pest-management, economic, and environmental harms associated with vacating the sulfoxaflor registrations and to urge the Court to remand without vacatur.

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visited April 22, 2021).

[12] *See* American Sugarbeet Growers Association, https://americansugarbeet.org/who-we-are/ (last visited April 22, 2021).

[13] *See* Florida Citrus Mutual, http://flcitrusmutual.com/ (last visited April 22, 2021).

[14] *See* Florida Fruit & Vegetable Association, https://www.ffva.com/page/AboutFFVA (last visited April 22, 2021).

[15] *See* National Potato Council, https://www.nationalpotatocouncil.org/who-we-are/mission/ (last visited April 22, 2021).

ARGUMENT

I. GROWERS DESPERATELY NEED CONTINUED ACCESS TO SULFOXAFLOR TO COMBAT SAP-FEEDING INSECTS AND MANAGE PESTICIDE RESISTANCE.

Insects pose a critical threat to Growers—insects are costly to combat and can result in catastrophic losses. Growers implement integrated pest management systems to keep harmful insects in check, using insecticides like sulfoxaflor in tandem with other non-chemical pest controls. Insects, however, develop resistance to insecticides over time, so Growers must choose from a limited number of viable chemical controls while bearing evolving resistance in mind when determining which insecticides to apply. Sulfoxaflor's novel formula is a uniquely effective alternative to other currently registered insecticides, making its availability crucial to Growers' crop production.

A. Insects Threaten Growers' Ability to Produce Food, Fuel, Feed, and Fiber.

Insect pests can decimate crop yields and cause significant economic harm to farmers, both in the form of crop yield losses and control costs.[16] For example, in 2019, insects caused an estimated $462,010,100 in yield losses for U.S. cotton growers,[17] and $283,682,815 in yield losses for U.S. soybean growers in just 17

[16] Declaration of Jeffrey Gore, Ph.D. (hereinafter "Gore Decl."), attached as Doc. 52-5 to Intervenor Dow Agrosciences LLC's Response in Support of Respondents' Motion for Voluntary Remand Without Vacatur, ¶ 11.

[17] Don R. Cook & M. Threet, *Table 28. Cotton insect loss estimates for the United*

states.[18] And from 2017 to 2019, the farmers of the crops at issue in this case spent an average total of $543 million on insecticides.[19] Of that spending, 39.6%—or around $214.7 million—was specifically directed to sap-feeding pests.[20]

Sap-feeding insects,[21] the primary targets of sulfoxaflor, can be economically devastating. In 2019, estimated overall losses to cotton growers from insect damage and control costs were $635.8 million, nearly three-fourths of which ($462.7 million) was attributable to sap-feeding insects.[22] For example, the tarnished plant (or Lygus) bug can have disastrous consequences on cotton, causing yield losses up to 5.0% annually.[23] Lygus bugs are also the primary threat to alfalfa seed growers and

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States during 2019 (2019), https://www.entomology.msstate.edu/resources/pdf/2019/table28.pdf.

[18] F.R. Musser, et al., *2019 Soybean Insect Losses in the United States*, 13 Midsouth Entomologist 1, 6 (2020), https://www.researchgate.net/publication/340950846_2019_Soybean_Insect_Losses_in_the_United_States.

[19] Mitchell Decl. ¶ 25.

[20] *Id.* at Table 5.

[21] These insects include plant bugs, aphids, planthoppers, whiteflies, scales, and mealybugs, and they often carry bacterial and viral diseases that can reduce crop quality, yields, and even cause total crop loss. Doc. 52-1 at 7.

[22] Cook & Threet, *supra* note 17; Mitchell Decl. ¶ 34 (interpreting Cook & Threet data).

[23] Gore Decl. ¶ 16; *see also* Scott Stewart & Angela McClure, *2021 Insect Control Recommendations for Field Crops: Cotton, Soybean, Field Corn, Sorghum, Wheat and Pasture*, Univ. of Tenn. Extension Publ'n 1768, 8 (2021), https://extension.tennessee.edu/publications/documents/pb1768.pdf ("The tarnished plant bug is among the most important pests of cotton.").

significantly affect strawberry crops.[24] The sugarcane aphid is the main pest threatening grain sorghum, with the potential to destroy entire crops while also excreting a sticky solution called honeydew that can damage harvest equipment requiring thousands of dollars in repair costs.[25] A sugarcane aphid biotype caused estimated losses of $276.17 million from 2014 to 2016 for the sorghum crop in Texas alone.[26] In just one year, a California whitefly invasion cost an estimated $111 million in the Imperial Valley alone due to losses on cole and melon crops.[27] And

[24] USDA Decl. ¶ 24 (noting that "*Lygus* bugs directly damage [alfalfa] buds, flowers, and developing seeds via feeding with piercing/sucking mouthparts, leading to direct seed yield impacts"), ¶¶ 27–28 (similar, as to strawberries).

[25] Gore Decl. ¶ 14; *see also* USDA Decl. ¶¶ 18–19 (noting a similar phenomenon for cotton, including "stunting of plant growth and accumulations of honeydew leading to development of sooty mold, decreased boll size, and boll shedding," all of which lead to discounted sale prices; discussing "substantial costs for downstream processors, such as cotton gins and textile mills"), ¶ 21 (same, as to sorghum, noting that honeydew-related clogging "leads to inordinate downtime for cleaning," that "the gummy sticky leaves can prevent grain from separating efficiently from the stalk," and that consequential "[h]arvest prevention is a primary yield loss driver as some fields become completely unusable after unmanaged aphid outbreaks and yield losses of 50% or more have been observed").

[26] Samuel D. Zapata, et. al., *The Economic Impact of the Sugarcane Aphid Outbreak in Texas*, Tex. A&M Agrilife Extension, https://agrilifeextension.tamu.edu/library/farming/the-economic-impact-of-the-sugarcane-aphid-outbreak-in-texas/ (last visited 4/22/2021).

[27] Refugio A. Gonzalez, et. al., *Whitefly invasion in Imperial Valley costs growers, workers millions in losses*, 46(5) Cal. Agric. 7, 7 (1992), http://calag.ucanr.edu/archive/?type=pdf&article=ca.v046n05p7.

the Asian citrus psyllid, another sap-feeding insect, has cost Florida citrus growers over $1 billion per year.[28]

Insecticide-resistant pests pose a particularly serious threat for Growers. Pesticide resistance involves an inherited decrease in a pest's sensitivity to a product over time.[29] As insects develop resistance to a pesticide, its field performance decreases.[30] Pesticide resistance is a widespread and expensive phenomenon, costing the U.S. agricultural sector around $10 billion annually.[31] Hundreds of insect species are documented as resistant to at least one—if not more—pesticides,[32] and resistant pest populations have routinely caused reduced crop yields for soybeans, citrus, cotton, and leafy vegetables. *See* Doc. 52-1 at 21. For example, pesticide-resistant citrus psyllids alone caused a $4.64 billion loss to citrus crops over 10 seasons, while resistant Silverleaf whiteflies caused an estimated $1 billion in damage to leafy vegetables and other crops. *Id.* at 21–22.

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[28] Derek Farnsworth, et. al., *The Potential Economic Cost and Response to Greening in Florida Citrus*, 29(3) Ag. & Applied Econs. Assoc'n 1, 1–4 (2014), https://www.choicesmagazine.org/UserFiles/file/cmsarticle_393.pdf.

[29] *Pesticide Registration Notice (PRN) 2017-1*, U.S. EPA, 3 (Aug 24, 2017), https://www.epa.gov/sites/production/files/2017-09/documents/prn-2017-1-pesticide-resistance-management-labeling.pdf.

[30] *See, e.g.*, USDA Decl. ¶ 42.

[31] N.C. State Univ., *Pesticide resistance needs attention, large-scale study*, Phys Org (May 17, 2018), https://phys.org/news/2018-05-pesticide-resistance-attention-large-scale.html.

[32] Mitchell Decl. ¶ 27.

B. Growers Combat Insects and Manage Resistance Issues With Integrated Pest Management.

Growers fight insects and account for resistance issues through insecticide use combined with several other related pest controls through a process called Integrated Pest Management (IPM).[33] IPM is the global, scientific standard for managing pests and their associated risks to human health, the economy, and the environment, while simultaneously safeguarding agricultural, natural, and built environments.[34] Approaches to IPM are the result of decades of agricultural innovation and involve the integrated use of cultural controls (crop placement, choice, and rotation), biological controls (natural pest predators), and chemical controls (pesticides).[35] These controls operate as a three-legged stool, with each leg reliant on the other to effectively manage pests and support crop production and protection.[36]

Determining how best to integrate these cultural, chemical, and biological controls is complex. For example, overuse or misuse of insecticides can undermine

[33] Gore Decl. ¶ 11.

[34] Declaration of Peter C. Ellsworth, Ph.D. (hereinafter "Ellsworth Decl."), attached as Doc. 52-4 to Intervenor Dow Agrosciences LLC's Response in Support of Respondents' Motion for Voluntary Remand Without Vacatur, ¶ 30.

[35] *See, id.* ¶¶ 30–31; Mitchell Decl. ¶¶ 22–23.

[36] *Cf. e.g.*, Jorge Fernandez-Cornejo & Sharon Jans, *Pest Management in U.S. Agriculture*, Agric. Handbook No. AH-717, 1 (1999), https://www.ers.usda.gov/webdocs/publications/41914/51160_ah717.pdf?v=42.

biological controls by reducing natural pest predator populations.[37] In addition, repeated application of products with shared modes of action can expedite the development of pesticide resistance.[38] Growers must therefore accommodate for evolving pesticide resistance as part of their pest management programs to sustainably manage insect threats.[39] One way Growers combat pesticide resistance is by rotating through various pesticides that employ different modes of action, which helps slow resistance evolution and prolong the pesticides' effectiveness.[40] Despite the complications that may result from insecticide use, these chemical controls are a necessary ingredient in effective IPM.[41] Ultimately, Growers' goal is to strike the best balance between these controls to maximize yields while managing pests with minimal pesticide use.[42]

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[37] *Cf., e.g.*, Ellsworth Decl. ¶ 6; Gore Decl. ¶ 11.

[38] *PRN 2017-1*, *supra* note 29, at 4.

[39] *Id.* at 3.

[40] *Id.* at 4; Declaration of John Palumbo, Ph.D. (hereinafter "Palumbo Decl."), attached as Doc. 52-6 of Intervenor Dow Agrosciences LLC's Response in Support of Respondents' Motion for Voluntary Remand Without Vacatur, ¶ 93; *see also, e.g.*, USDA Decl. ¶ 22.

[41] Palumbo Decl. ¶ 1 ("Even though growers implement [cultural/biological] integrated pest management [controls] . . . non-chemical methods are insufficient. Pesticides are required.").

[42] Gore Decl. ¶ 11.

C. Growers' Continued Access to Sulfoxaflor is Necessary for Effective IPM and Resistance Management.

Sulfoxaflor is a critical component of Growers' IPM strategies and insecticide rotations.[43] Sulfoxaflor is well-suited to IPM because it narrowly targets sap-feeding insects (e.g., Lygus bugs) without impacting the insects' natural predators, pollinators, and other beneficial organisms.[44] Prior to sulfoxaflor's development, growers largely relied on broad-spectrum pesticides to combat sap-feeding pests. *See* Doc. 52-1 at 5, 19. Sulfoxaflor's selectively targeting formula, however, "is so much more effective" than these existing pesticides that it can replace anywhere from four to twelve applications of those older products. *Id.* at 21. For example, sulfoxaflor leads the market in effectiveness with respect to Lygus bugs. In Arizona cotton, sulfoxaflor protects "against yield losses of up to 84%," and provides around "15.2% better yield protection than the next best available product."[45]

[43] For example, between 2017–2019, an average 17.3% of sorghum acreage and 6.2% of cotton acreage was treated with sulfoxaflor. Mitchell Decl. ¶ 51.

[44] Ellsworth Decl. ¶ 6; *see also* USDA Decl. ¶ 7 (noting that "sulfoxaflor [is] an important component of [IPM] programs").

[45] Ellsworth Decl. ¶ 5; *see also, e.g.*, USDA Decl. ¶ 16 ("[S]ulfoxaflor is the most effective choice for control by [cotton] growers."), ¶¶ 15, 18 (noting that cotton growers in the U.S. use sulfoxaflor to combat Lygus bugs, cotton aphids, and whiteflies, as well as that "[w]hiteflies attacking cotton also vector over 100 different plant viruses resulting in significant crop losses").

Likewise, sulfoxaflor is key to battling insecticide resistance.[46] Sap-feeding insects in particular have developed resistance to many currently registered insecticides.[47] For example, almost all insect species that affect cotton growers in the southeast are resistant to at least one—and in some cases more—classes of insecticides.[48] And many growers have a limited number of available modes of action for their crops in the first place, which makes sulfoxaflor's low levels of cross-resistance[49] particularly beneficial.[50]

In addition, sulfoxaflor is especially effective at addressing the unique threats posed by certain insecticide-resistant pests, such as the tarnished plant bug, which is resistant to most registered insecticides, and aphids, whose high reproductive

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[46] Palumbo Decl. ¶¶ 94–95; *see also, e.g.*, USDA Decl. ¶ 39 ("Ultimately, the registration of new active ingredients and associated products—such as for the active ingredients [in sulfoxaflor]—is a critical measure needed to help farmers diversify their control efforts and circumvent the development of resistance.").

[47] *See, e.g.*, Mitchell Decl. ¶¶ 27–28.

[48] Gore Decl. ¶ 15.

[49] *See, e.g.*, Sparks, *supra* note 4, at 1; USDA Decl. ¶ 15 ("[A]t this time there is no evidence of cross-resistance between sulfoxaflor and other chemical classes, making sulfoxaflor an important resistance management/rotation option.").

[50] For example, five of the six modes of action used on corn, soybeans, and alfalfa are effective against sap-feeding pests, and only six of the eight to nine modes of action used on sorghum and cotton address sap-feeding pests. *See, e.g.*, Mitchell Decl. ¶ 42. In the same vein, sulfoxaflor is one of only four available modes of action for fall melon growers, and it is "the ideal rotational partner" due to its high efficacy at low use rates. Palumbo Decl. ¶¶ 32, 41; *see also* USDA Decl. ¶ 8 ("Sulfoxaflor also serves as an important rotation option with alternative chemistries for resistance management . . . .").

capacity over short periods help them evolve resistance quickly.[51] Indeed, sulfoxaflor is the only pesticide on the market that can "provide concurrent control of aphids, Lygus bugs, and whiteflies" in lettuce and celery,[52] and it is one of only two products that can provide effective sugarcane aphid control in grain sorghum.[53] Likewise, sulfoxaflor is an important tool that Florida citrus growers have used to combat the highly insecticide-resistant Asian citrus psyllid—"the most important pest of citrus crops worldwide"—which "has reduced citrus acreage by 37%, production volume by 58%, and employment of farm labor by 17.5%" since 2005.[54]

Thus, taking sulfoxaflor off the market would eliminate an optimal insecticide option for many growers, forcing them back to the drawing board to try to develop new IPM and resistance management strategies.

II. VACATUR OF THE SULFOXAFLOR REGISTRATIONS WOULD RESULT IN SUBSTANTIAL ECONOMIC LOSSES FOR GROWERS.

Vacating the sulfoxaflor registration would also have potentially catastrophic economic consequences for Growers and the broader agricultural community.

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[51] Gore Decl. ¶ 1.

[52] Palumbo Decl. ¶ 73.

[53] Gore Decl. ¶ 14; *see also, e.g.*, Stewart & McClure, *supra* note 23, at 52.

[54] Gurpreet S. Brar, Xavier Martini & Lukasz L. Stelinski, *Lethal and sublethal effects of a novel sulfoximine insecticide, sulfoxaflor, against Asian citrus psyllid and its primary parasitoid under laboratory and field conditions*, 63(4) Int'l J. of Pest Mgmt. 299, 299–300 (2017), https://crec.ifas.ufl.edu/media/crecifasufledu/faculty/lukasz/Brar_et_al._2017.pdf.

Vacatur would affect crops worth on average $123 billion annually—66.5% of the total U.S. crop value.[55] As discussed above, sap-feeding and other insects cause millions of dollars of damage each year. Removing sulfoxaflor would only exacerbate those damages.

According to USDA, vacatur of the sulfoxaflor registrations could cause over $200 million in grower losses each year for cotton, sorghum, alfalfa grown for seed, and strawberries alone.[56] Losses to growers of citrus and cucurbits (including pumpkins, squash, cucumbers, and melons) could also be close to $3 million annually based on conservative estimates.[57] Still other growers would suffer immediate and direct economic consequences if they were no longer able to use sulfoxaflor given the lack of any comparable alternatives.

Vacating sulfoxaflor's registration would force Growers to buy and apply alternative pesticides in larger quantities to achieve the same results they could have achieved with smaller quantities of sulfoxaflor. This will cause significant economic and environmental losses.[58] For example, without sulfoxaflor, growers will have to

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[55] *See* Mitchell Decl. ¶ 19 (citing USDA, *Crop Values: 2019 Summary* (Feb. 2020), https://www.nass.usda.gov/Publications/Todays_Reports/reports/cpvl0220.pdf).

[56] USDA Decl. ¶¶ 17, 23, 26, 29.

[57] *Id*. ¶¶ 34, 38.

[58] *See, e.g.*, Ellsworth Decl. ¶ 70 (noting detrimental impact of potential vacatur on Arizona cotton); M.K. Walsh, et. al., *Climate Indicators for Agriculture*, USDA Tech. Bull. 1953, 33 (2020), https://doi.org/10.25675/10217/210930 ("Greater pesticide applications affect profit margins and can influence the rate of pesticide

resort to older, broad-spectrum pesticides that do not selectively target harmful pests—farmers will be forced to use more of these pesticides due to increased resistance, prompting pest population flare ups as good bugs are wiped out with the bad, and increasing control costs.[59]

As an example, without sulfoxaflor, Arizona cotton would require an estimated 33–57% increase in the number of sprays needed to control Lygus and secondary pests.[60] If sulfoxaflor had not been available between 2014–2015, Arizona cotton growers would have been forced to increase their spray requirements by 157%.[61] Unsurprisingly, when sulfoxaflor's registration was vacated in 2016, Arizona cotton "growers suffered at least 24.7% losses" as a result.[62] In the same vein, secondary outbreaks cost cotton farmers in the San Joaquin Valley around $6 per-acre for late-season pesticide usage, and in 2010, 20% of late-season, non-Lygus pesticide applications for cotton in the San Joaquin Valley could be attributed to secondary pest outbreaks.[63] "[T]hese costs for secondary pest outbreaks and insect

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resistance and increase long-term management costs. Such costs may also include exacerbation of environmental impacts and effects on public health.").

[59] *See, e.g.*, Mitchell Decl. ¶ 37; Ellsworth Decl. ¶ 78 (discussing the "pesticide treadmill effect of spraying more for secondary pests" in the absence of sulfoxaflor).

[60] Ellsworth Decl. ¶ 18.

[61] *Id.*

[62] *Id.* ¶ 19.

[63] Kevin Gross & Jay A. Rosenheim, *Quantifying secondary pest outbreaks in cotton and their monetary cost with casual-inference statistics*, 21(7) Ecological

resistance would fall on all growers, not just those using sulfoxaflor currently," because "[a]ll farmers growing these crops would lose access to an effective selective insecticide and thus suffer more secondary outbreaks."[64] When farmers have to rely on a limited number of modes of action, it becomes more likely that pests will develop resistance to them.[65]

In many instances, there are no suitable substitutes available among these limited alternatives. For example, during the year when sulfoxaflor was not available to Arizona cotton growers, the consequential reintroduction of older pesticides "destabilize[ed] the system's biological controls,"[66] and the same would happen again if sulfoxaflor's registrations are vacated. Along those lines, many growers in the Mississippi Delta would likely be out of business today if not for sulfoxaflor, due to the increasing required quantity (and by extension, costs) of insecticide sprays, whose effectiveness was decreasing over time.[67] Taking

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Applications 2770, 2770, 2776–77 (2011), https://rosenheim.faculty.ucdavis.edu/wp-content/uploads/sites/137/2014/09/Gross-Rosenheim-Ecol-Appl-2011.pdf.

[64] Mitchell Decl. ¶ 53.

[65] *Id.*

[66] Jack Peterson, et. al., *Request for Section 18 emergency use of Sulfoxaflor (Transform® WG Insecticide) to control western tarnished plant bug (Lygus hesperus) in cotton fields in the state of Arizona*, 6 (2017), https://cals.arizona.edu/apmc/docs/2017TransformCottonSection18ArizonavF4lo.pdf.

[67] Gore Decl. ¶ 25.

sulfoxaflor off the market will threaten numerous growers with that same risk. Indeed, sorghum growers in particular "would be devastated without sulfoxaflor," because it is one of just two insecticides that can effectively control the destructive sugarcane aphid.[68] This is precisely why sorghum growers received emergency exemptions from the 2016 vacatur.[69] "The availability of sulfoxaflor saved the grain sorghum industry,"[70] but vacatur could doom it, and other industries like it.

And even for growers who *do* have viable alternatives available—such as sugarbeet, soybean, and corn growers—the consequences of vacatur could be significant.[71] For these crops, removing sulfoxaflor from the market will cause these Growers to rely on fewer insecticides, thereby increasing the likelihood for the evolution of insecticide-resistance in key pests across-the-board.[72] This could decrease the effectiveness and useful lifespans of the other insecticides on which these Growers presently rely.[73] Vacatur would also preclude these Growers from implementing sulfoxaflor as part of their IPM plans, hamstringing their ability to respond to new and ever-evolving threats throughout key points in the growing

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[68] *Id.* ¶ 6.

[69] *Id.*

[70] *Id.*

[71] *See* USDA Decl. ¶ 39.

[72] *See id.*

[73] *See, e.g.*, *id.* ¶¶ 39–42.

season.[74] For example, the arrival of invasive insect species from outside the United States can throw a wrench into growers' pre-planned IPM strategies and potentially cause billions of dollars in damage.[75] Growers need to have as many available insecticide options as possible to combat these novel threats.[76]

In sum, all of these potentially catastrophic economic effects warrant remand without vacatur.

III. VACATUR OF THE SULFOXAFLOR REGISTRATIONS WOULD RESULT IN A NET ENVIRONMENTAL HARM.

Finally, vacating the sulfoxaflor registrations would result in a net environmental harm. The administrative record shows that sulfoxaflor is less harmful to beneficial insects, including predator and non-target species, than many market alternatives. *See, e.g.*, Doc. 51-1 at 23. And "[t]he net environmental gain from use of sulfoxaflor over [available] alternatives is large"—for example, it "has contributed to measurable gains in biodiversity and conservation biological control" in Arizona IPM systems.[77] Indeed, studies have shown that sulfoxaflor "conserves

[74] *See, e.g.*, *id*.

[75] *See id.* ¶ 41.

[76] *Id.* ¶ 42.

[77] Ellsworth Decl. ¶¶ 82, 84.

the natural enemy and pollinator complex at levels comparable to not spraying at all."[78] EPA expressly agrees with this conclusion.[79]

Vacating the sulfoxaflor registrations would therefore be a step back for both Growers and the environment, reversing trends toward more targeted and reduced insecticide use.[80] And importantly, the record indicates that vacatur could have a negative effect on pollinators and protected species.[81] In addition, threatened or endangered species that might be adversely affected by sulfoxaflor generally do not live near crops on which sulfoxaflor is used, and it presents less risk to those species than alternatives.[82] Plus, because more of these pesticides must be used to achieve

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[78] Peterson, et. al., *supra* note 66, at 64.

[79] *See* EPA Brief at 41–48.

[80] *See* Craig D. Osteen & Philip I. Szmedra, *Agricultural Pesticide Use Trends and Policy Issues*, USDA Agric. Econ. Rep. No. 622, 3 (1989), https://naldc.nal.usda.gov/download/CAT10407750/PDF.

[81] *See* Declaration of Dwayne R.J. Moore, Ph.D. (hereinafter "Moore Decl."), attached as Doc. 52-2 to Intervenor Dow Agrosciences LLC's Response in Support of Respondents' Motion for Voluntary Remand Without Vacatur, ¶ 5; *see also, e.g.*, USDA Decl. ¶ 9 ("Vacatur of sulfoxaflor uses from 2019 is almost certain to force most growers to use alternatives that have comparatively worse pollinator risk profiles, and in some cases, at the expense of inferior pesticidal efficacy and crop safety."); Sally O'Neal, *Pest Management Strategic Plan – with a Special Focus on Pollinator Protection – for Alfalfa Seed Production in the Western United States*, 3 (2017), https://ipmdata.ipmcenters.org/documents/pmsps/AlfalfaSeedPMSP_FINAL.pdf (noting that "sulfoxaflor gave growers effective control of Lygus during [alfalfa] bloom").

[82] Moore Decl. ¶ 8.

the same results as lower amounts of sulfoxaflor, impacted species could be exposed to more applications of pesticides overall.[83]

CONCLUSION

For these reasons, the Court should remand the sulfoxaflor registrations without vacatur. Vacating the product registrations would have immediate and substantial adverse effects on Growers' ability to combat sap-feeding and insecticide-resistant insects and sustain necessary crop production. Vacatur would also result in significant economic losses and frustrate Growers' efforts to operate their farms in an environmentally sustainable manner. Consequently, amici request that this Court remand the sulfoxaflor registrations without vacatur.

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Respectfully submitted,

s/Edmund S. Sauer

Bartholomew J. Kempf
Edmund S. Sauer
BRADLEY ARANT BOULT CUMMINGS LLP
1600 Division Street, Suite 700
Nashville, TN 37203
(615) 252-2374
esauer@bradley.com
bkempf@bradley.com

[83] *Id.* ¶ 46.

Sarah Gunn
BRADLEY ARANT BOULT CUMMINGS LLP
One Federal Place
1819 5th Avenue North
Birmingham, Alabama 35203
Tel: (205) 521-8024
sgunn@bradley.com

Counsel for Amici Curiae

CERTIFICATE OF COMPLIANCE

I certify that pursuant to Federal Rules of Appellate Procedure 29(b) and 32, and Ninth Circuit Rule 29-2, this brief has been prepared in a proportionally spaced typeface, 14-point Times New Roman font, and contains 4,457 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(f).

Dated: April 22, 2021

s/Edmund S. Sauer
Edmund S. Sauer

CERTIFICATE OF SERVICE

I hereby certify that on April 22, 2021, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system which will send notification of such filing to all registered CM/ECF users.

s/Edmund S. Sauer
Edmund S. Sauer