

Pollinator Stewardship Council v. United States EPA: Colony Collapse Disorder in North Carolina

Maryjeanne Marrero

I. Introduction

The United States, among other countries, has been under serious pressure due to a mysterious problem: Colony Collapse.¹ Colony Collapse is a phenomenon in which most of the honeybees of a hive disappear.² Such phenomenon does not have a known cause as of yet, but many speculate that pesticides are a contributing factor.³ Due to the precariousness of the honeybee population, the Environmental Protection Agency (EPA) regulates the registration and approval of pesticides.⁴ The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides the EPA with the power to oversee the use of such pesticides.⁵ If a pesticide is deemed to cause more harm than benefit to the environment, its use should be controlled, and if necessary, eradicated.⁶ In *Pollinator Stewardship Council v. United States EPA*, the Ninth Circuit Court of Appeals correctly concluded that a pesticide, whose effects on the honeybees and the environment are unknown, should be vacated.⁷ In this case, the Ninth Circuit Court of Appeals vacated the use of Sulfoxaflo, a highly toxic pesticide to honeybees, until further studies prove that its use would not have harmful effects on the environment.⁸

¹ Williams R. Geoffrey, *Colony Collapse Disorder*, BIOESSAYS (Oct. 2010) at 845.

² *Id.*

³ Sanford T. Malcom, *Colony Collapse Disorder: A Descriptive Study*, BEE CULTURE (3 Aug. 2009), at 38.

⁴ *Pollinator Stewardship Council v. United States E.P.A.*, 800 F.3d, 1176 (9th Cir. 2015).

⁵ 7 U.S.C. § 136a (a) (2015).

⁶ *Id.*

⁷ *Pollinator Stewardship Council*, 800 F.3d at 1187.

⁸ *Id.*

II. Colony Collapse Disorder

Colony Collapse Disorder (CCD) is the phenomenon characterized by the rapid disappearance of adult honeybees.⁹ In colonies that have already collapsed, CCD's symptoms are the complete absence of adult honeybees with no trace of dead bees surrounding the hive.¹⁰ Colonies in the process of collapsing are characterized by the insufficiency of workforce, the presence of only young bees along with the queen, and the reluctance of the remaining bees to consume sugar.¹¹ This collapse, or “. . . rapid reduction of population size,” can take place over the course of weeks or even a few days.¹²

Studies have failed to find a single, definite cause for this phenomenon.¹³ However, they have found possible causes that might explain the disappearance of the honeybees.¹⁴ The possible causes include pests, diseases, viruses, and, most importantly, pesticides.¹⁵ Pesticides are used on a variety of crops and such use has lethal effects on insects, including honeybees.¹⁶ The honeybee population decline has been so substantial as to incentivize interest and concern from scientists and beekeepers from all over the world to assess risks and take the necessary precautions.¹⁷

Colony Collapse Disorder has been especially significant in North Carolina.¹⁸ The number of beehives in the state has dropped by forty-four percent and approximately ninety-five

⁹ Williams R. Geoffrey, *Colony Collapse Disorder*, BIOESSAYS (Oct. 2010), at 845.

¹⁰ Sanford T. Malcom, *Colony Collapse Disorder: A Descriptive Study*, BEE CULTURE (3 Aug. 2009), at 38.

¹¹ *Id.*

¹² *Id.*

¹³ Williams R. Geoffrey, *Colony Collapse Disorder*, BIOESSAYS (Oct. 2010), at 845.

¹⁴ *Id.*

¹⁵ Sanford T. Malcom, *Colony Collapse Disorder: A Descriptive Study*, BEE CULTURE (3 Aug. 2009), at 38.

¹⁶ Pollinator Stewardship Council, 800 F. 3d at 1177.

¹⁷ Williams R. Geoffrey, *Colony Collapse Disorder*, BIOESSAYS (Oct. 2010), at 845.

¹⁸ Berenbaum, May, *Review Colony Collapse Disorder In Honey Bee Colonies Across The United States* (2007) at 12, available at <https://www.gpo.gov/fdsys/pkg/CHRG-110hrg36465/pdf/CHRG-110hrg36465.pdf>.

percent of wild bees have been exterminated.¹⁹ Danny Jaynes, President of the North Carolina Beekeeper’s Association, expressed that he had twelve active hives in the fall of 2012.²⁰ In the fall of 2013, however, he recorded only having two active beehives while the remaining ten had been abandoned.²¹ Furthermore, in a hearing before the Subcommittee on Horticulture and Organic Agriculture of the Committee on Agriculture House of Representatives of Congress, Chairman Etheridge from North Carolina stated, “as you know, CCD affects more than honey production.²² Over 90 crops depend on bees for pollination...” and among these crops are North Carolina melons.²³

Chairman Etheridge also emphasized his concern on the effects the misuse of pesticides is having on the honeybee population.²⁴ A specific example of such pesticide is sulfoxaflor.²⁵ The North Carolina Agricultural Chemicals Manual recommends the use of sulfoxaflor for the treatment of apples, among other crops.²⁶ The use of sulfoxaflor has been the subject of much debate and controversy.²⁷ Fortunately, a recent federal case addressed the issue of colony collapse and the use of this pesticide.²⁸

¹⁹ Richard Gerber, *Mysterious, Massive Disappearance/Death of US Honey Bees – Colony Collapse Disorder (CCD)*, <http://blog.targethealth.com/mysterious-massive-disappearance-death-of-us-honey-bees-colony-collapse-disorder-ccd/> (last visited Jan. 1, 2016).

²⁰ Brian Shrader, *Bee Colonies Collapsing as Workers Abandon Hives* (Apr. 10, 2013), <http://www.wral.com/bee-colonies-collapsing-as-workers-abandoned-hives/12327567/> (last visited Jan. 1, 2016).

²¹ *Id.*

²² Berenbaum, May, *Review Colony Collapse Disorder In Honey Bee Colonies Across The United States* (2007) at 12, 2007, available at <https://www.gpo.gov/fdsys/pkg/CHRG-110hrg36465/pdf/CHRG-110hrg36465.pdf>.

²³ *Id.*

²⁴ *Id.*

²⁵ Walgenbach, J, 2016 North Carolina Agricultural Chemicals Manual, 188, 2015, available at <http://content.ces.ncsu.edu/north-carolina-agricultural-chemicals-manual/insect-and-disease-control-of-fruits>.

²⁶ *Id.*

²⁷ Pollinator Stewardship Council, 800 F. 3d at 1178.

²⁸ *Id.*

III. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

FIFRA requires that all pesticides be registered.²⁹ The Environmental Protection Agency (EPA) is responsible for overseeing the sale and use of pesticides.³⁰ In cases where the pesticide does not meet the standards purported by the act and would have unreasonable harmful effects on the environment, the EPA should deny the use of such.³¹

To the extent necessary to prevent unreasonable adverse effects on the environment, the Administrator may by regulation limit the distribution, sale, or use in any State of any pesticide that is not registered under this Act and that is not the subject of an experimental use permit under section 5 or an emergency exemption under section 18.³²

The EPA may register a pesticide either unconditionally or conditionally.³³ When the environmental risks of a pesticide are unknown, the EPA will conditionally register it until they conduct further studies to determine the risks of its use.³⁴ Unconditional registration, on the other hand, requires data that conclusively shows the risks such use would pose to the environment.³⁵ The EPA, however, approved the use of sulfoxaflor without adequate studies showing its effects on the environment in the following case filed by beekeepers and bee keeping organizations.³⁶

IV. *Pollinator Stewardship Council v. United States EPA*

A. Facts

²⁹ 7 U.S.C. § 136a(a) (2015).

³⁰ *Pollinator Stewardship Council*, 800 F. 3d at 1178.

³¹ *Id.*

³² 7 U.S.C. § 136a(a) (2015).

³³ *Pollinator Stewardship Council*, 800 F. 3d at 1178.

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Pollinator Stewardship Council*, 800 F. 3d at 1178.

In 2010, Respondent Dow Agrosiences LLC applied to register three products, each containing sulfoxaflor.³⁷ Sulfoxaflor is a pesticide that attacks the nervous system of the insect thus causing death.³⁸ The pesticide not only kills insects that come into contact with the pesticide but also when they ingest a plant that has previously absorbed the pesticide.³⁹ Due to its effectiveness, Dow submitted studies and data pertaining to the effects and benefits of using sulfoxaflor on crops to get approved for its use.⁴⁰ In order to consider it for approval, the EPA used The Pollinator Risk Assessment Framework.⁴¹

In light of the concerning decline of bee populations, the EPA came up with this framework to analyze the benefits and risks the use of a pesticide would have on the bees.⁴² The framework is divided into two tiers.⁴³ Tier 1 studies “. . . the extent to which bees would be exposed to a pesticide in the environment with the doses at which that pesticide is toxic to bees.”⁴⁴ In this case, Dow stated that the maximum rate of application would be 0.133 pounds of ingredient per acre per application and the maximum yearly application would be 0.266 pounds of ingredient per acre.⁴⁵ The EPA determined that any risk quotient, the median lethal dose, over 0.4 would trigger further study of the application of the pesticide because of its toxicity to bees.⁴⁶ Accordingly, the EPA found that the risk quotient of oral exposure of sulfoxaflor to bees would

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.* at 1179.

⁴² Pollinator Stewardship Council, 800 F. 3d at 1179.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.* at 1180.

be 83 and the contact exposure would be 2.8.⁴⁷ Both methods of contact obviously exceed the risk quotient of 0.4.⁴⁸

If a risk to bees is identified in Tier 1 of the framework, as in this case, then the EPA proceeds to assess the risk under Tier 2.⁴⁹ Tier 2 studies the effects of a pesticide on bees in the environment.⁵⁰ This tier attempts to analyze the effects on the colony as a whole, instead of on the individual bees.⁵¹

Tier 2 studies are generally referred to as ‘semi-field studies;’ they consist of bees placed in a tunnel enclosure and forced to feed on pesticide-treated crops. Because bees interact with each other, feed each other, and transport and consume food differently depending on their role within the hive, semi-field studies attempt to better capture the effect that a pesticide would have on the functioning of the entire colony.⁵²

In the present case, Dow submitted six tunnel studies in which all but one used application rates much lower (0.006 to 0.088 pounds of active ingredient per acre) than those originally suggested (0.133 pounds of active ingredient per acre).⁵³ Consequently, the EPA concluded that “. . . because the majority of studies used a lower application rate than the one Dow proposed, ‘[t]he direct effect of sulfoxaflor on [measures of adult forager bee mortality, flight activity, and behavioral abnormalities] at the maximum application rate in the U.S. is presently unknown.’⁵⁴ “Because the honey bee colony is an interdependent ‘superorganism,’ the effect of an insecticide on one type of bee can ripple through the hive.”⁵⁵ Additionally, due to various limitations in all of the studies, the effect of sulfoxaflor, when applied at the maximum proposed rate, on both

⁴⁷ Pollinator Stewardship Council, 800 F. 3d at 1180.

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² Pollinator Stewardship Council, 800 F.3d at 1180.

⁵³ *Id.*

⁵⁴ *Id.* at 1181.

⁵⁵ *Id.* at 1185.

brood development and long-term colony health was inconclusive.⁵⁶ The EPA decided that additional studies were required, among these additional semi-field tunnel studies.⁵⁷

Due to its inconclusive results, the EPA conditionally registered the pesticide and allowed Dow to use it while it collected additional data.⁵⁸ The EPA, therefore, proposed a conditional registration in which the maximum single application would be lowered to 0.09 pounds per acre from the initial 0.133 pounds of active ingredient.⁵⁹ Additional studies on the effects of sulfoxaflor on a colony at 0.133 pounds would determine if Dow could use this amount of application in the future.⁶⁰ The EPA did not vacate the use of sulfoxaflor in its entirety because they assumed that its use would not result in a, “catastrophic loss to brood during the time period required for the conditional studies to be performed and assessed.”⁶¹ However, less than seven months after the conditional registration, the EPA decided to unconditionally register sulfoxaflor without any further testing conducted by Dow.⁶² They justified the unconditional registration claiming that, although “it had classified sulfoxaflor as ‘very highly toxic’ to bees . . . that hazard [would] be appropriately mitigated by reduced application rates, increased minimum application intervals, and the pollinator-related labeling mitigation.”⁶³ Also, the EPA claimed that they retained the flexibility to determine what type of data was needed to support registration and that the data from Dow’s studies was sufficient.⁶⁴ Petitioners, however, claimed that the registration lacked substantial evidence of the effects of sulfoxaflor on honeybees.⁶⁵

⁵⁶ *Id.* at 1181.

⁵⁷ *Id.*

⁵⁸ Pollinator Stewardship Council, 800 F.3d at 1182.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ Pollinator Stewardship Council, 800 F.3d at 1183.

⁶⁵ *Id.* at 1183.

B. Holding

The Ninth Circuit Court of Appeals held that the unconditional approval was based on limited and flawed data; therefore, the EPA's registration of sulfoxaflor was vacated and remanded.⁶⁶ “This case is a challenge to the EPA's approval of insecticides containing sulfoxaflor, which initial studies showed were highly toxic to honey bees. Bees are essential to pollinate important crops and in recent years have been dying at alarming rates.”⁶⁷ The studies conducted under Tier 2 posed serious limitations and thus required Dow to submit pollinator field-testing.⁶⁸ The EPA correctly concluded that there was insufficient data at the moment to unconditionally register the pesticide.⁶⁹

The EPA then, contrary to its original decision, decided to unconditionally register the pesticide without further support or studies; such decisions are inconsistent.⁷⁰ In response to the inconsistencies, the EPA claims that *because* the studies were inconclusive as to the risks the pesticide would have on bees, the pesticide does *not* cause unreasonable effects on bees.⁷¹ The Court of Appeals for the Ninth Circuit concluded that this argument is illogical and that the EPA may not violate its own regulations requiring a pesticide must be proven to have minimal risks to the environment in order to be registered.⁷²

When deciding whether to vacate the EPA's rulings, a court will consider whether vacating would avoid more possible environmental harm than leaving the rule in place.⁷³ “In this case, given the precariousness of bee populations, leaving the EPA's registration of sulfoxaflor

⁶⁶ *Id.*

⁶⁷ *Id.* at 1177.

⁶⁸ *Id.*

⁶⁹ *Id.* at 1186.

⁷⁰ Pollinator Stewardship Council, 800 F.3d at 1186.

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

in place risks more potential environmental harm than vacating it.”⁷⁴ In September of 2015, the court thus vacated the unconditional registration of sulfoxaflor and remanded for the EPA to obtain further studies regarding the effects of the pesticide on bees, as required by their own regulations.⁷⁵

V. Conclusion

In all, Colony Collapse Disorder continues to be a concern in the United States and all over the world.⁷⁶ One concern is the use of pesticides, such as sulfoxaflor, that are highly toxic to honeybees.⁷⁷ After the Environmental Protection Agency’s unconditional registration of this pesticide took place, this concern only exacerbated.⁷⁸ To the bees’ amusement and hopeful prosperity, the Ninth Circuit Court of Appeals vacated and remanded the use of sulfoxaflor in 2015 on the grounds that the EPA had registered it without sufficient evidence of the effects it would have on honeybees, thus contrary to the EPA’s own regulations.⁷⁹

⁷⁴ *Id.* at 1187.

⁷⁵ *Id.*

⁷⁶ Williams R. Geoffrey, *Colony Collapse Disorder*, BIOESSAYS (Oct. 2010) at 845.

⁷⁷ Pollinator Stewardship Council, 800 F. 3d at 1178.

⁷⁸ *Id.*

⁷⁹ *Id.*