

SOCC – Petition for Precautionary Label Statements on Generic 2,4-D

PETITION OF:

SAVE OUR CROPS COALITION

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Via Registered Mail, Return Receipt Requested this 7th day of December, 2012,

RE: Petition to Place Precautionary Label Statements on Generic Forms of the Herbicide 2,4-D

Summary of the Petition

The **Save Our Crops Coalition (SOCC)** is a grassroots coalition of farm interests organized for the specific purpose of preventing injury to non-target crops from exposure to 2,4-D and dicamba. SOCC does not oppose advances in plant technology, particularly genetic modification, but does oppose actions that would result in substantial injury to non-target crops and to the habitats necessary for their pollinators.

On September 11, 2012, the Save Our Crops Coalition (SOCC) submitted a request to amend its petitions to the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) in light of the successful conclusion of its discussions with Dow AgroSciences (Dow).

Based on actions and commitments made by Dow, SOCC was satisfied that Dow had adopted substantial measures to protect against non-target damage associated with the introduction of Dow's 2,4-D tolerant crops. In particular, SOCC was pleased with the efforts of Dow to discourage the unlawful use of higher volatility non-choline salt formulations of 2,4-D (generic 2,4-D) on 2,4-D tolerant crops. Generic 2,4-D is sold in various formulations under a variety of trade names, such as Aqua-Kleen, Savage, Weedone, Lawn-Keep, Estone, CrotoLin, D 50, Ded-Weed LV-69, Farmco, Miracle, Weedar, Weed-B-Gone, Vergemaster, and Salvo.¹

¹ For a complete list, visit: *2,4-Dichlorophenoxyacetic acid (2,4-D) (CASRN 94-75-7)*, EPA (Aug. 9, 2012), available at: <http://www.epa.gov/iris/subst/0150.htm>

Dow committed to utilize an independent third party to collect seed and pesticide sales data to identify applicators that use generic 2,4-D in contravention of label requirements, and to price its herbicide competitively to disincentivize the use of generic 2,4-D on 2,4-D tolerant crops.

However, despite Dow’s best efforts, SOCC believes that an economic incentive might still exist to use generic 2,4-D on 2,4-D tolerant crops, and, thus, there may be considerable pressure to abuse the label requirements established by EPA and systems put in place by Dow. SOCC also believes that the lack of precautionary label statements that clearly indicate use of generic 2,4-D on 2,4-D tolerant crop is prohibited might create confusion about whether such use is permissible. Thus, SOCC respectfully submits the following petition to place precautionary label statements on all generic forms of 2,4-D indicating use on 2,4-D tolerant crops is prohibited, pursuant to the Administrative Procedures Act §551 *et seq.*

Petitioner

SOCC represents nearly every segment of American agriculture, from growers to processors, both conventional and organic. All SOCC growers cultivate specialty crops, but they also cultivate significant acreages of major agronomic crops, like corn and soybeans. SOCC is over 2,000 growers strong, including grower organizations such as the Indiana Vegetable Growers Association and the Ohio Produce Growers and Marketers Association, and is supported by major processors like Red Gold.

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Factual Background

Drift and Volatilization

Due to the potential for crop injury, pesticide spray drift and volatilization from agronomic crops is a major concern for specialty crop growers and processors. Spray drift is the airborne movement of pesticide spray particles to non-target sites.

Spraying during windy conditions, or using nozzles or pressures that result in the creation of fine spray particles, increase the risk of spray drift. Volatilization is the airborne movement of pesticide vapor to a non-target site. Volatilization occurs when a pesticide is applied to a target site, subsequently evaporates, and moves off-target. The calm, windless environmental conditions that minimize drift, ironically, only increase the potential for volatilization.

All pesticides may have harmful effects on non-target crops if they drift or volatilize away from their intended areas of application; however, generic forms of 2,4-D have proven especially prone to cause drift and volatilization damage.² A survey of state pesticide control officials listed generic 2,4-D as the pesticide most often involved in pesticide drift incidents for every year the survey has been taken, but, unfortunately, this incidence of drift damage far outpaces the relative use of generic 2,4-D. Generic 2,4-D ranked 7th on an EPA list of the most commonly applied conventional pesticide active ingredients.³ Drift concerns have led some states to enact safeguards such as requiring the use of lower volatility formulations, restrictions on application timing, and even bans on generic 2,4-D use.⁴

2,4-D tolerant crops heighten drift and volatilization concerns associated with generic 2,4-D. The introduction of 2,4-D tolerant crops is anticipated to increase the use of 2,4-D, especially in corn and soybean producing regions. These regions also produce substantial acreages of broadleaf crops that are sensitive to 2,4-D. Thus, any drift or volatilization from generic 2,4-D could be expected to have significant impacts on non-target crops grown in proximity.

2,4-D tolerant crops also permit applications of 2,4-D weeks later in the growing season. Applications at this time of year occur when other crops are 'leafed out,' further increasing the risk of non-target damage.⁵ The high temperatures of this time of year also substantially increase the potential for herbicide volatilization.⁶ These risks are particularly alarming in the case of generic 2,4-D, because generic

² Sciumbaro, Audie S., et al. *Determining Exposure to Auxin-Like Herbicides. I. Quantifying Injury to Cotton and Soybean*, Weed Technology, Vol. 18, 1125-1134 (2004).

³ *2005 Pesticide Drift Enforcement Survey Report*, Association of American Pesticide Control Officials (2005), available at <http://aapco.ceris.purdue.edu/doc/surveys/DriftEnforce05Rpt.html>; *Pesticides Industry Sales and Usage: 2006 and 2007 Market Estimates*, EPA (Feb. 2011) available at

http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates2007.pdf

⁴ 4 Tex. Admin. Code § 7.50 (2011); Or. Admin. R. 603-057-0301 (2012); Wash. Admin. Code 16-228-1250 (2012).

⁵ *Determining Exposure to Auxin-Like Herbicides. I. Quantifying Injury to Cotton and Soybean*.

⁶ Atkins, Peter and Loretta Jones, *Chemical Principles: The Quest for Insight*, 310-311 (4th ed. 2008).

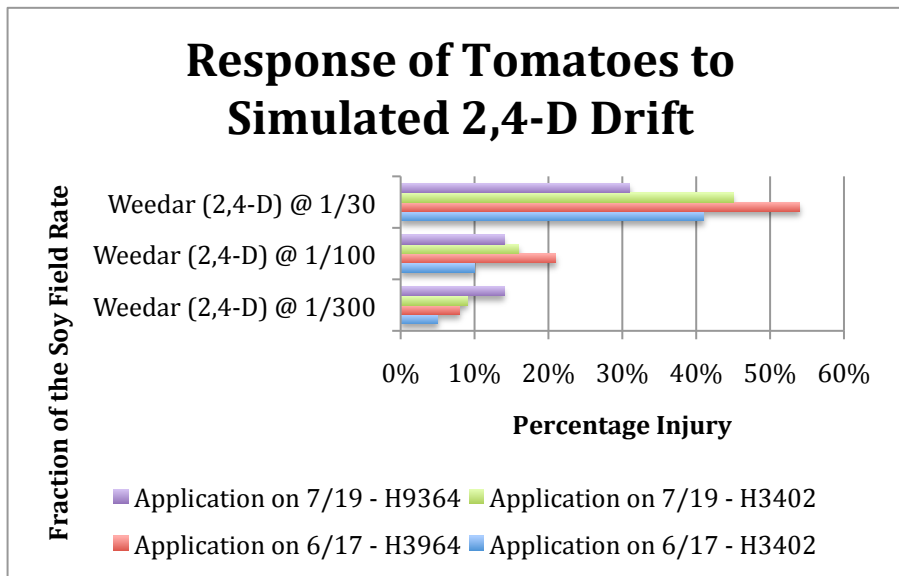
2,4-D causes substantial plant damage effects at very low application rates and is prone to volatilize at high temperatures.

Generic 2,4-D Drift Has Substantial Plant Damage Effects at Very Low Application Rates

Researchers at the Ohio State University Department of Horticulture and Crop Science conducted a study on the effect of simulated generic 2,4-D spray drift and volatilization on tomatoes grown for processing.⁷ Their objective was to quantify the impact of low rates of generic 2,4-D on broadleaf crops with respect to plant injury and the potential for yield losses.

Their conclusions are startling. Simulated generic 2,4-D drift and volatilization caused tomato bloom to "abort," causing a subsequent late bloom. Late bloom resulted in significantly less marketable red tomato fruit and more immature green tomato fruit. Applications of generic 2,4-D at levels as low as 1/300th of the soybean field rate caused a statistically significant loss of tomato crops. The late drift of generic 2,4-D, during bloom, caused a 17-77% reduction in marketable fruit when applied at 1/100th of the field rate. Early drift of generic 2,4-D, soon after transplanting, resulted in an up to 25% loss of ripe marketable fruit and a 43% increase in green fruit at 1/100th the field rate. See Figure 1, below.

Figure 1.



The Vapor Pressure of Generic 2,4-D Makes It Prone to Volatilize

The vapor pressure of generic 2,4-D makes it especially prone to volatilize and subsequently move off-target. The vapor pressure of a substance is a measure of its tendency to volatilize, that is, to escape from a liquid or solid state to a gaseous

⁷ Doohan, Doug and Koch, Tim, *Effect of Simulated Dicamba and 2, 4-D Drift on Processing Tomatoes*, Ohio State University/OARDC (2010).

vapor. There is a direct relationship between vapor pressure and volatility such that liquids with higher vapor pressures are more likely to volatilize at lower temperatures.⁸ Generic ester and amine forms of 2,4-D have high relative vapor pressures and, therefore, readily volatilize at lower temperatures.⁹

Effect of Synthetic Auxin Tolerant Crops on Herbicide Use

The widespread use of glyphosate has contributed to the glyphosate resistant weed populations. In an effort to prevent further resistance to the glyphosate mode of herbicide action, Dow developed the 2,4-D tolerant cropping system. 2,4-D differs in its mode of herbicide action from that of glyphosate. A tolerance to differing modes of herbicide action complements glyphosate tolerance by providing two methods to kill difficult weeds.¹⁰ The desirability of 2,4-D tolerant cropping system is anticipated to greatly increase the use of 2,4-D. Regrettably, no federal agency has estimated the increase in application levels of 2,4-D resulting from introduction of 2,4-D tolerant crops.^{11 12}

Fortunately, one scholar, Dr. Chuck Benbrook, has developed projections that estimate increases in active ingredient applied and in acreage treated associated with the introduction of 2,4-D tolerant corn, cotton, and soybeans. Dr. Benbrook served as the agricultural staff expert to the Council on Environmental Quality and as the Executive Director of the National Academy of Sciences' Board on Agriculture.¹³ Dr. Benbrook is widely recognized as an expert on genetically modified crops and agricultural policy. USDA, within its draft environmental assessment for the first synthetic auxin tolerant crop, Dow's 2,4-D tolerant corn, cited Dr. Benbrook's figures for genetically modified crop utilization within the U.S., and noted him as a voice of concern on the issue of increased utilization of herbicides upon the introduction of other genetically modified crops.¹⁴

⁸ Atkins, Peter and Loretta Jones, *Chemical Principles: The Quest for Insight*, 310-311 (4th ed. 2008).

⁹ *2,4-D Technical Fact Sheet*, National Pesticide Information Center - Oregon State University (2012), available at <http://npic.orst.edu/factsheets/2,4-DTech.pdf>

¹⁰ *Plant Pest Risk Assessment for DAS-40278-9 Corn*, APHIS (Dec. 27, 2011), available at http://www.aphis.usda.gov/brs/aphisdocs/09_23301p_dpra.pdf at 2-3.

¹¹ *Id.*

¹² *Dow AgroSciences Petition (9-233-01p) for Determination of Nonregulated Status of Herbicide Tolerant DAS-40278-9 Corn, Zea mays, Event DAS-40278-9: Draft Environment Assessment*, APHIS (Dec. 27, 2011), available at www.aphis.usda.gov/brs/aphisdocs/09_23301p_dea.pdf

¹³ *The Organic Center :: About the Center :: Staff*, The Organic Center (2012), available at http://www.organic-center.org/about.staff.php?action=detail&bios_id=43

¹⁴ *Event DAS-40278-9: Draft Environment Assessment*, at 11,14.

By 2020, Dr. Benbrook anticipates a 45-fold increase in the amount of 2,4-D applied over 2005 levels, to more than 202 million pounds applied, and a more than 8-fold increase in total acreage treated, to nearly 97 million acres.¹⁵

Proximity of Agronomic Crop Acreage to Broadleaf Crop Acreage in the Midwest

The map of Michigan, below, produced by USDA's CropScape, shows the relative proximity of corn fields to soybean fields in the Midwest.¹⁶ The yellow pixels represent corn acreage, and the dark green pixels represent soybean acreage. Soybeans are a major agronomic broadleaf crop. *See* Figure 2.

The second map, below, is a close-up of a portion of Monroe County, Michigan.¹⁷ Growers in Monroe County cultivate fruit and vegetable crops in proximity to major agronomic crops like corn and soybeans. This proximity is representative of the Midwest generally. The large grey-pink portion in the middle of the map is a tomato field surrounded by corn and soybean fields. Tomatoes are also a broadleaf crop. *See* Figure 3.

As noted above, generic 2,4-D has substantial harmful effects on unmodified broadleaf crops even at very low applications rates, and because 2,4-D tolerant crops will be grown in such close proximity to broadleaf crops like unmodified soybeans and tomatoes, the potential for non-target plant damage caused by drift and volatilization is great.

¹⁵ Benbrook, Charles. *Projected 2,4-D Use on Corn, Cotton, and Soybeans Assuming 2,4-D Herbicide-Tolerant Crops are Approved for Unlimited Use in 2013-2014*. Benbrook Consulting Services, prepared for ABC News (Aug. 2012).

¹⁶ *2011 Michigan*, USDA/NASS (Apr. 14, 2012) available at: <http://nassgeodata.gmu.edu/CropScape/>

¹⁷ *2011 Area of Interest*, USDA/NASS (Apr. 14, 2012) available at: <http://nassgeodata.gmu.edu/CropScape/>

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Figure 2.

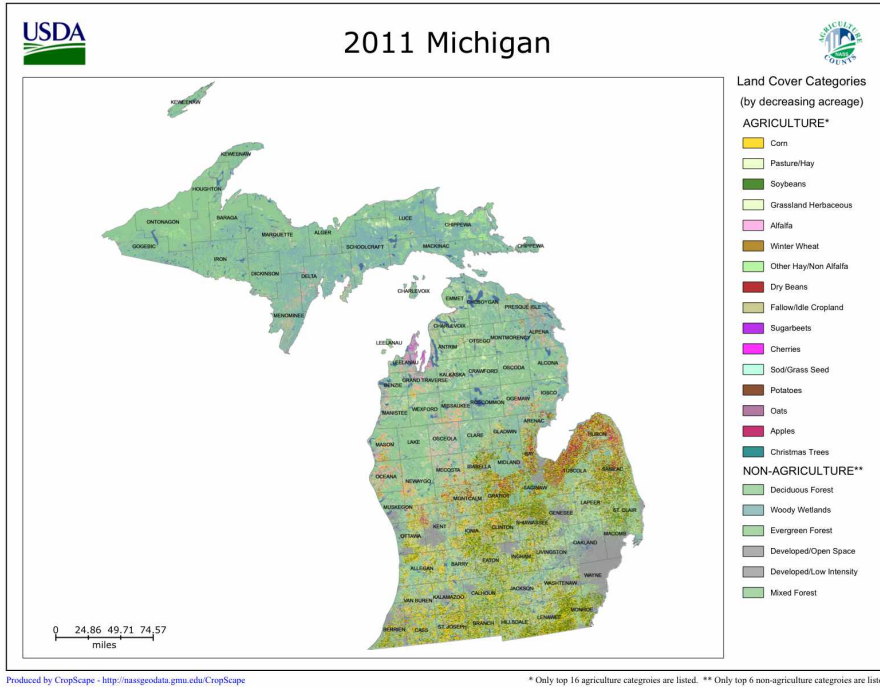
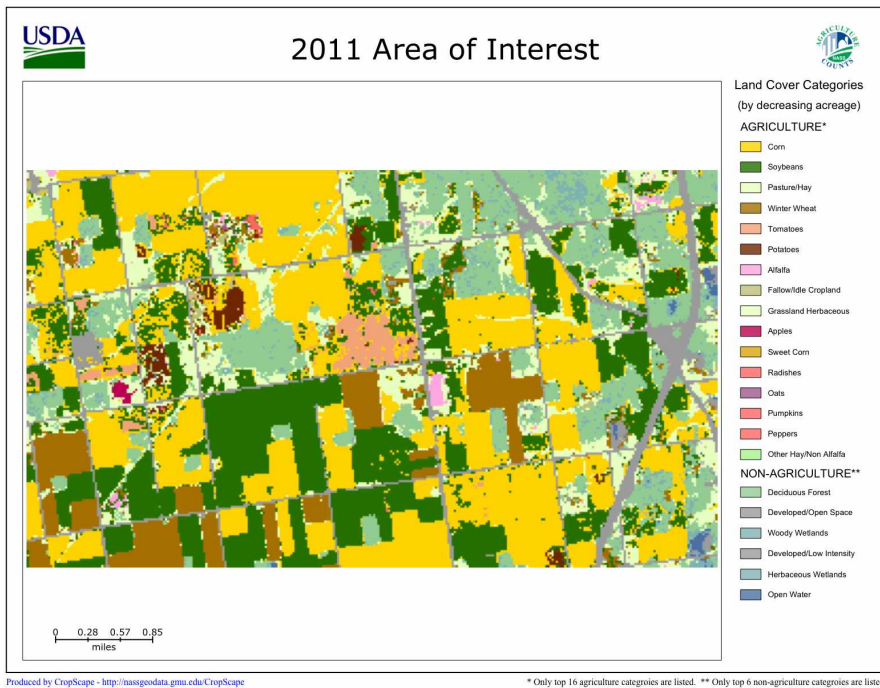


Figure 3.



Discussion

Statutory and Regulatory Authority

The Federal Insecticide Fungicide and Rodenticide Act (FIFRA) requires EPA to regulate the sale and use of pesticides in the United States through the registration and labeling of pesticide products.¹⁸ The sale of any pesticide is prohibited unless it is registered and labeled.¹⁹ EPA is directed to restrict the use of pesticides as necessary to prevent unreasonable adverse effects on people and the environment, taking into account the costs and benefits of various pesticide uses.²⁰ Under FIFRA, the term “environment” includes “all plants.”²¹

Each pesticide product is required to bear hazard and precautionary statements for environmental hazards, including hazards to non-target organisms.²² Where a hazard exists to non-target organisms, EPA may require precautionary statements of the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage.²³

The Use of Generic 2,4-D on 2,4-D Tolerant Crops

The introduction of 2,4-D tolerant crops creates the potential for use of generic forms of 2,4-D on 2,4-D tolerant crops. SOCC is concerned that, upon introduction of 2,4-D tolerant crops, there will exist an economic incentive for growers to use generic 2,4-D on 2,4-D tolerant crops, and this economic incentive creates the potential for non-compliant use. Credible projections indicate a massive increase in the use of 2,4-D associated with the introduction of 2,4-D tolerant crops, and 2,4-D tolerant crops will be grown in close proximity to sensitive crops. Thus, even small rates of noncompliant use create the grave risk of damage to non-target plants. In order to decrease these risks, SOCC requests EPA adopt precautionary label statements for all generic forms of 2,4-D indicating that use on 2,4-D tolerant crops is prohibited.

The costs of developing new herbicide chemistries are significant, and the costs of Dow’s 2,4-D choline salt will be borne by its consumers. Thus, despite Dow’s best efforts, 2,4-D choline salt will likely cost more for growers and applicators than generic forms of 2,4-D, and, therefore, there will likely exist an economic incentive for growers and applicators to use the cheaper, older and more volatile and drift prone forms of 2,4-D. SOCC believes this economic incentive to use generic 2,4-D creates a potential for abuse that poses a grave risk of damage to non-target crops.

¹⁸ 7 U.S.C. §136 *et seq.*

¹⁹ 7 U.S.C. §§136a(a), 136a(c)(5)(B).

²⁰ 7 U.S.C §136a(a).

²¹ 40 C.F.R. §158.130(e)(1).

²² 40 C.F.R. § 156.80

²³ 40 C.F.R. §156.85(a)

Moreover, seed purchasers often do not apply herbicides themselves. Thus, despite the fact that Dow requires its seed purchasers to sign a Technology Use Agreement that explicitly prohibits the use of generic forms of 2,4-D on 2,4-D tolerant crops, applicators may not have actual notice that the label prohibits use of generic 2,4-D on 2,4-D tolerant crops. SOCC believes that a lack of actual notice might precipitate claims of confusion about whether generic 2,4-D use on 2,4-D tolerant crops is permissible. SOCC believes this any confusion creates the potential for noncompliant use that poses a grave risk of damage to non-target plants.

There is no question that unregistered use of generic 2,4-D on 2,4-D tolerant crops would be in contravention of standing labeling requirements.²⁴ Even if such use were unintentional, it would be illegal.²⁵ Nevertheless, SOCC believes that the addition of precautionary statements would provide clear notice to growers and applicators that use of generic 2,4-D on 2,4-D tolerant crops is prohibited. Such label statements would prevent instances of both intentional and unintentional unlawful use that might cause damage to the non-target plants.

SOCC requests that EPA amend all generic 2,4-D labels to include precautionary label statements that indicate that use on 2,4-D tolerant crops is prohibited.²⁶ SOCC suggests the following be added to the “Environmental Hazards” heading of the “Precautionary Statements” section of the label:

“THIS PESTICIDE IS NOT LABELED FOR USE ON CROPS GENETICALLY MODIFIED FOR TOLERANCE TO 2,4-D. USE ON SUCH CROPS IS PROHIBITED.”

Conclusion

On September 11, 2012, SOCC announced the successful conclusion of discussions with Dow regarding its 2,4-D tolerant cropping system. SOCC was satisfied that Dow had adopted effective measures to protect against non-target plant damage associated with the introduction of 2,4-D tolerant crops. Dow made a strong commitment to discourage the unlawful use of older, cheaper, and highly volatile generic formulations on 2,4-D tolerant crops. SOCC was also impressed with Dow’s 2,4-D choline salt formulation. SOCC believes that only Dow’s 2,4-D choline salt provides an adequate risk profile for use on 2,4-D tolerant crops.

²⁴ 7 U.S.C. § 136j(a)(2)(A)

²⁵ *George’s Pest Control Services v. EPA*, 572 F.2d 204, (9th Cir. 1977) (pest control service that sprayed insecticide in a meat market with the spray nozzle 8 to 12 inches from a wall rather than directly in cracks and crevices as provided for by the label violated FIFRA).

²⁶ 40 C.F.R. §§ 156.80, 156.85(a)

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Despite Dow's best efforts, SOCC believes there could be pressure to abuse the label requirements established by EPA and systems put in place by Dow, and there could be confusion about whether use of generic 2,4-D on 2,4-D tolerant crops is permissible. In order to prevent unreasonable and needless risks to the environment, SOCC requests EPA adopt precautionary label statements for all generic forms of 2,4-D indicating that use on 2,4-D tolerant crops is prohibited.

Respectfully submitted,

_____/s/_____

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