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VIA ELECTRONIC SUBMISSION, E-MAIL AND CERTIFIED MAIL

**RE: CITIZEN'S PETITION TO CLASSIFY PESTICIDES WITH THE ACTIVE INGREDIENT  
DICAMBA AS RESTRICTED USE**

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.

Non-target plant damage associated with herbicide spray drift and volatilization is a major concern for specialty crop growers and processors. Credible estimates project significant increases in the amount of dicamba that will be applied upon the introduction of dicamba-tolerant crops, and, dicamba, because of its potential to drift and volatilize, has proven to be one of America's most dangerous herbicides for non-target plant damage.

Thus, SOCC respectfully submits the following petition requesting EPA conduct a classification review of products with the active ingredient dicamba to determine whether any or all such products should be classified for restricted use.

## Commenter

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.

## 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 a non-target site. 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 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, dicamba has proven especially prone to cause damage.<sup>1</sup> A survey of state pesticide control officials listed dicamba as the pesticide third most commonly involved in drift incidents for two years in a row.<sup>2</sup> This incidence of drift damage far outpaces the relative use of dicamba. Dicamba does not even make the list of the top 25 most commonly applied pesticide active ingredients.<sup>3</sup> 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 use.<sup>4</sup> Thus,

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<sup>1</sup> 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).

<sup>2</sup> *2005 Pesticide Drift Enforcement Survey Report*, Association of American Pesticide Control Officials (2005), available at

<http://aapco.ceris.purdue.edu/doc/surveys/DriftEnforce05Rpt.html>

<sup>3</sup> *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](http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates2007.pdf).

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

SOCC regards dicamba as one of America's most dangerous herbicides for non-target plant damage.

Dicamba-tolerant crops heighten drift and volatilization concerns. The introduction of dicamba-tolerant crops is anticipated to increase the amount of dicamba that will be used, especially in soybean producing regions. Because these regions also produce substantial acreages of broadleaf crops that are sensitive to dicamba, the environmental impacts in these regions are anticipated to be especially intense.

The introduction of dicamba-tolerant crops would also permit applications of dicamba 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.<sup>5</sup> High temperatures also substantially increase the potential for herbicide volatilization.<sup>6</sup> These risks are particularly alarming in the case of dicamba, because dicamba causes substantial plant damage effects at very low application rates, and is prone to volatilize at high temperatures.

#### **Dicamba Drift Has Substantial Harmful 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 dicamba drift and volatilization on tomatoes grown for processing.<sup>7</sup> Their objective was to quantify the impact of low rates of dicamba on broadleaf crops with respect to plant injury and the potential for yield losses.

Their conclusions are startling. Simulated dicamba drift and volatilization caused tomato bloom to "abort." Applications of dicamba at levels as low as 1/300th of the soybean field rate caused statistically significant losses of tomato crops. The late drift of dicamba, during bloom, caused a 17-77% reduction in marketable fruit when applied at 1/100th of the field rate. *See Figure 1, below.*

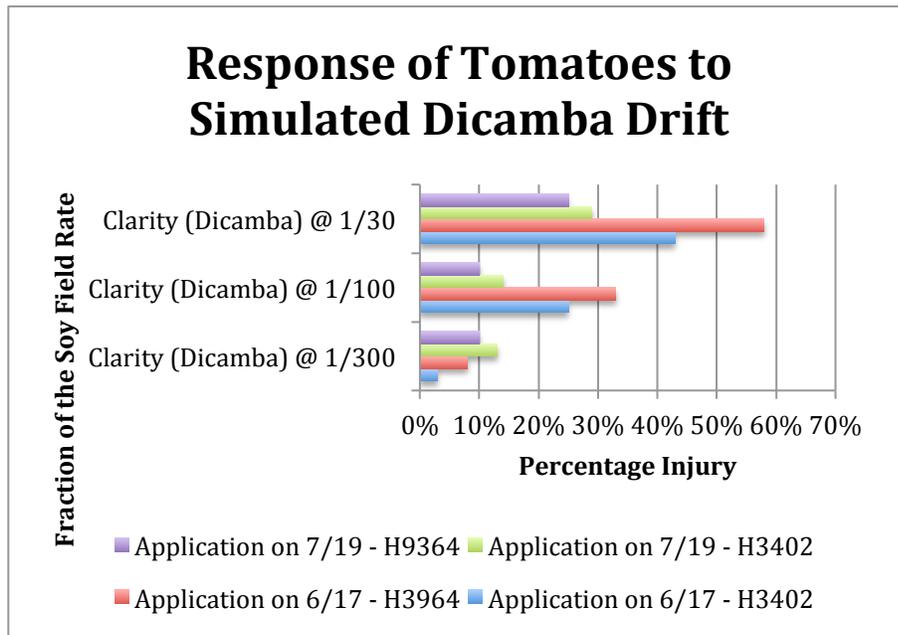
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<sup>5</sup> *Determining Exposure to Auxin-Like Herbicides. I. Quantifying Injury to Cotton and Soybean.*

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

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

Figure 1.



### Effect of Dicamba-tolerant Crops on the Use of Dicamba

The rationale presented by Monsanto for dicamba-tolerant crops, is that they would provide another weed management tool for farmers, because they would offer, “... an option to delay or prevent further resistance to glyphosate and other critically important soybean herbicides, in particular, herbicides in the ALS and PPO class of chemistry...”<sup>8</sup> Thus, dicamba-tolerant crops represent a replacement for, or complement to, glyphosate tolerant crops, because the widespread use of glyphosate has contributed to glyphosate resistant weed populations.

Monsanto’s own petitions to USDA for non-regulated status of dicamba-tolerant crops have indicated that, upon peak adoption, dicamba use will approximately double its 1994 peak historical use level, or reach about 25 million pounds annually.<sup>9</sup> However, it should be noted that the use of dicamba has declined precipitously from its peak levels. Monsanto’s petitions omit describing the intensity of the rate of sudden change in dicamba use from current use levels. The latest figures place the amount of dicamba applied at

<sup>8</sup> *Monsanto Petition for Determination of Nonregulated Status of Event MON 87708*, APHIS (Jul. 13, 2012), available at: <http://www.regulations.gov/#!documentDetail;D=APHIS-2012-0047-0002>, at 5.

<sup>9</sup> *Monsanto Petition for Determination of Nonregulated Status of Event MON 87708*, at 210-211.

about 2.7 million pounds annually.<sup>10</sup> Monsanto's projected use pattern would represent an approximately 925% increase in pounds applied over current levels, an almost 250% increase in the total acreage treated, and a 5660% increase in soybean acreage treated.<sup>11</sup> Such an increase would represent a dramatic shift in the utilization of an herbicide both in total pounds applied and in total acreage treated. Even the increase in the use of glyphosate upon the introduction of glyphosate tolerant crops, an increase of almost 600% in pounds applied, would be eclipsed by this shift in use.<sup>12</sup>

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

The map, below, produced by USDA's CropScape, is a close-up of a portion of Monroe County, Michigan.<sup>13</sup> Growers in Monroe County cultivate fruit and vegetable crops in proximity to major agronomic crops like 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 a broadleaf crop. See Figure 2.

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

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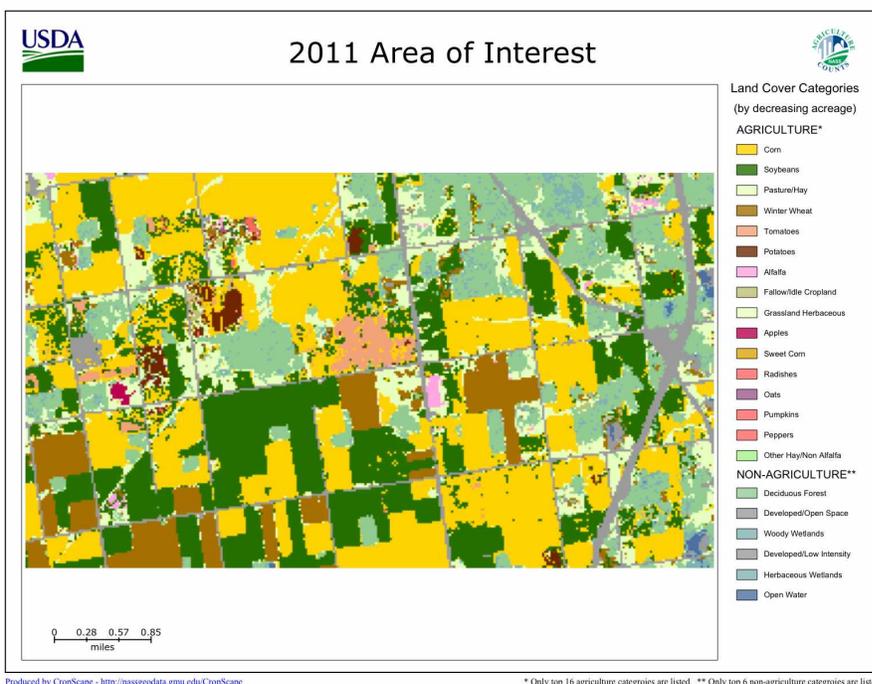
<sup>10</sup> *Monsanto Petition for Determination of Nonregulated Status of Event MON 87708*, at 198.

<sup>11</sup> *Monsanto Petition for Determination of Nonregulated Status of Event MON 87708*, at 223-224.

<sup>12</sup> Gianessi, L. P. and N. Reigner, *Pesticide Use in U.S. Crop Production: 2002 with Comparison to 1992 and 1997*, (2006) available at: <http://www.croplifefoundation.org/Documents/PUD/NPUD%202002/Fung%20&%20Herb%202002%20Data%20Report.pdf>

<sup>13</sup> *2011 Area of Interest*, USDA/NASS (Apr. 14, 2012) available at: <http://nassgeodata.gmu.edu/CropScape/>

Figure 2.



## 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 registration and labeling of pesticide products.<sup>14</sup> The sale of any pesticide is prohibited unless it is registered and labeled.<sup>15</sup> EPA is directed to restrict the use of pesticides as necessary to prevent unreasonable adverse effects on people and the environment.<sup>16</sup>

If EPA determines that a pesticide, when applied in accordance with its directions for use, warnings and cautions and for the uses for which it is registered, or in accordance with a widespread and commonly recognized practice, may cause unreasonable adverse effects on the environment, EPA may restrict use of a product to certified applicators, or by

<sup>14</sup> 7 U.S.C. § 136, *et seq.*

<sup>15</sup> 7 U.S.C. §§ 136a(a), 136a(c)(5)(B).

<sup>16</sup> 7 U.S.C § 136a(a).

persons under the direct supervision of a certified applicators, or may impose other, additional, restrictions it may deem necessary.<sup>17</sup>

Specifically, regarding impacts on non-target organisms, EPA's regulations state that a pesticide product intended for outdoor use will be considered for restricted use classification if "Under conditions of label use or widespread and commonly recognized practice, the pesticide may cause discernible adverse effects on non-target organisms, such as significant mortality or effects on the physiology, growth, population levels or reproduction rates of such organisms, resulting from direct or indirect exposure to the pesticide, its metabolites or its degradation products."<sup>18</sup>

EPA may also, by regulation, prescribe restrictions relating to the product's composition, labeling, packaging, uses, or distribution and sale, or to the status or qualifications of the user.<sup>19</sup>

### **Petition To Conduct a Classification Review of Products with Active Ingredient Dicamba**

SOCC hereby petitions EPA to conduct a classification review of all products with the active ingredient dicamba, including, but not limited to, its dimethylamine salt, diglycolamine salt, potassium and sodium salt formulations, to determine whether any or all such products should be classified for restricted use. SOCC believes that a classification review is warranted in light of a history of past drift incidents involving dicamba and its new pattern of use, described in "Factual Background" above, and the likelihood that many forms of dicamba will be used on dicamba tolerant crops, even if not registered for such use.

Should EPA undertake such a classification review, SOCC believes that EPA would determine that many, if not all, products with the active ingredient dicamba, without additional regulatory restrictions, when applied in accordance with its directions for use, warnings and cautions and for the uses for which it is registered, or in accordance with a widespread and commonly recognized practice, may cause unreasonable adverse effects on the environment.<sup>20</sup> SOCC believes that classifying certain forms of dicamba as restricted use, including a requirement that only certified applicators apply such forms of dicamba and that adequate records of such applications are kept, could mitigate the potential for unreasonable adverse effects on the environment.

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<sup>17</sup> 7 U.S.C. § 136a(d)(1)(C); 40 C.F.R. § 152.170(vi); 40 C.F.R. § 152.171(a)

<sup>18</sup> 40 C.F.R. § 152.70(c)(1)(iv)

<sup>19</sup> 7 U.S.C. § 136a(d)(1)(C)

<sup>20</sup> 7 U.S.C. § 136a(d)(1)(C)

As discussed in “Factual Background” above, many forms of dicamba have proven especially prone to drift and cause damage, despite a relative paucity of use.<sup>21</sup> Dicamba may also cause “discernible adverse effects on non-target organisms, such as significant mortality or effects on the physiology, growth, population levels or reproduction rates of such organisms, resulting from direct or indirect exposure to the pesticide, its metabolites or its degradation products.”<sup>22</sup> Thus, presently, “when applied in accordance with its directions for use, warnings and cautions and for the uses for which it is registered” dicamba may cause “unreasonable adverse effects on the environment,” and, therefore, upon such basis, EPA should conduct a classification review to determine whether to classify such forms of dicamba as restricted use.<sup>23</sup>

Moreover, as discussed in “Factual Background” above, the introduction of dicamba-tolerant crops will cause an explosion in the use of dicamba. Monsanto’s projected use pattern would represent an approximately 925% increase in pounds applied over current levels, an almost 250% increase in the total acreage treated, and a 5660% increase in soybean acreage treated, and much of this increase in use will be in close proximity to sensitive non-target plants.<sup>24</sup>

Further, the costs to Monsanto and BASF of developing new product chemistries and registering new uses are significant.<sup>25</sup> Ultimately, these costs will ultimately be borne by their consumers. Unfortunately, it seems likely this difference in cost between pesticides registered for use on dicamba-tolerant crops and non-registered alternatives

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<sup>21</sup> 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); *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](http://www.epa.gov/opp00001/pestsales/07pestsales/market_estimates2007.pdf).

<sup>22</sup> Doohan, Doug and Koch, Tim, *Effect of Simulated Dicamba and 2, 4-D Drift on Processing Tomatoes*, Ohio State University/OARDC (2010); 40 C.F.R. § 152.70(c)(1)(iv).

<sup>23</sup> 7 U.S.C. § 136a(d)(1)(C)

<sup>24</sup> *Monsanto Petition for Determination of Nonregulated Status of Event MON 87708*, at 223-224; *2011 Area of Interest*, USDA/NASS (Apr. 14, 2012) available at: <http://nassgeodata.gmu.edu/CropScape/>.

<sup>25</sup> *Pesticide Products; Receipt of Applications to Register New Uses*, EPA, 77 Fed. Reg. 50686 (Aug. 22, 2012), available at: <http://www.gpo.gov/fdsys/pkg/FR-2012-08-22/pdf/2012-20666.pdf>

will cause applicators to seek out and use less expensive non-registered alternatives. Given the economic incentives discussed above, once certain forms of dicamba are approved for use on dicamba tolerant crops, EPA can expect unscrupulous applicators to begin applying forms of dicamba not registered for use on dicamba tolerant crops, thus becoming a “widespread and common practice.”

EPA is precluded from considering the availability of alternatives within its registration analysis, of which its classification procedures are part and parcel. However, EPA is not precluded from considering the practical implications of its regulatory actions, or from distinguishing alternative pesticides upon bases which EPA does have a strong statutory mandate to regulate, such as whether such pesticide or pesticides may have an “unreasonable adverse effects on the environment.”<sup>26</sup> The words “widespread and commonly recognized practice” exhort EPA to give strong consideration to those practices, which may go beyond a pesticide’s “directions for use, warnings and cautions and for the uses for which it is registered.”<sup>27</sup> For instance, in its decision *In Re: Protexall Products, Inc.*, EPA squarely addressed practices beyond a FIFRA regulated product’s “directions for use, warnings and cautions and for the uses for which it is registered.” *In Re: Protexall Products, Inc.* involved labels for sodium arsenate ant baits that directed such products be kept out of the reach of children. In that case, the Administrator determined that the widespread and common practice of placing bait stations throughout the home wherever ants may be seen, which was contrary to the express label language which directed that the product be kept out of the reach of children, and, on this basis, cancelled the registration of these sodium arsenate ant baits.<sup>28</sup>

Similar to decision EPA reached in *In Re: Protexall Products, Inc.*, EPA is aware that there exist cheaper, more volatile and drift prone forms of dicamba that are not registered for use on dicamba tolerant crops. And EPA is also aware that, in all likelihood, without addition restrictions on the use of such pesticides, the application of non-registered forms of dicamba on dicamba tolerant crops will become “widespread and common practice” among unscrupulous applicators. And, as discussed in “Factual Background” above, such widespread and common practice is likely to cause “unreasonable adverse effects on the environment.” Therefore, upon such basis, EPA should conduct a classification review to determine whether to classify such forms of dicamba as restricted use.

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<sup>26</sup> 7 U.S.C. §§ 136a(c)(5)(D), 136a(d)(1)(C)

<sup>27</sup> 7 U.S.C. § 136a(d)(1)(C)

<sup>28</sup> *In the Matter of Protexall Products, Inc., et. al.*, FIFRA Docket Nos. 625, 2 E.A.D. 854, WL 550929, et. al. (1989).

SOCC would note that BASF claims that its Engenia formulation is 40% less volatile than diglycolamine salt formulations, like Clarity.<sup>29</sup> SOCC appreciates the work that BASF has done to develop new, less volatile chemistries. However, SOCC would note that BASF and Monsanto still sell older, cheaper, and more volatile formulations of dicamba, and that BASF and Monsanto have yet to present stewardship plans or suggest additional registration restrictions that might mitigate the potential for these non-registered generic formulations to cause non-target plant damage. SOCC views the mere existence of such formulations as necessary, but, unfortunately, insufficient to adequately protect against the potential for non-target plant damage. In the absence of leadership from BASF and Monsanto, SOCC would request that EPA exercise its clear authority to further regulate a “widespread and common practice” which may cause unreasonable adverse effects.

Should EPA undertake a classification review, in consideration of the bases and principles laid out above, SOCC believes that EPA would determine that many, if not all, products with the active ingredient dicamba, without additional regulatory restrictions, may cause unreasonable adverse effects on the environment.<sup>30</sup>

## Conclusion

On September 11, 2012, SOCC announced the successful conclusion of discussions with Dow AgroSciences (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. SOCC was also impressed with Dow’s 2,4-D choline salt formulation. Only 2,4-D choline salt, the lowest volatility 2,4-D formulation available, would be approved for use on 2,4-D tolerant crops, and Dow has committed to strongly discourage the unlawful use of older, cheaper, highly volatile formulations on 2,4-D tolerant crops. Unfortunately, SOCC has not been able to reach a similar agreement with Monsanto and BASF. EPA has a responsibility to American agriculture to use its authority to protect those growers and processors of food crops throughout the country, and, therefore, in this instance, EPA must act.

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<sup>29</sup> *Monsanto Petitions (10-188-01p and 12-185-01p) for Determinations of Nonregulated Status for Dicamba- Resistant Soybean and Cotton Varieties, Final Environmental Impact Statement*, at 152 (December 12, 2014), available at:

<http://www.regulations.gov/contentStreamer?objectId=090000648196eff1&disposition=attachment&contentType=pdf>

<sup>30</sup> 7 U.S.C. § 136a(d)(1)(C)

SOCC hopes that EPA will recognize that SOCC is requesting only reasonable accommodations to avoid what are likely unreasonable consequences -- accommodations that a competitor of Monsanto and BASF has already agreed are in the best interests of American agriculture. In light of the foregoing, SOCC respectfully petitions EPA to conduct a classification review of all products with the active ingredient dicamba to determine whether any or all such products should be classified for restricted use.

Respectfully submitted,

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