February 8, 2018

WI DNR Pesticide Use Advisory Team

This Pesticide Assessment was conducted at the request of the Wisconsin Department of Natural Resources (WI DNR). The Department Pesticide Use Team requested that Dr. Mark Renz (University of Wisconsin Professor and Extension Weed Specialist) review and summarize aspects of active ingredients commonly used for unwanted plant control in forests and natural areas and provide his **professional opinion** on the risks and value of this active ingredient compared to other commonly used practices. For more detailed information about this active ingredient, please consult the US Environmental Pesticide Agency or National Pesticide Information Center. Pesticide labels are the law and must be followed.

Per your request, I am providing information to consider when determining if dicamba should be listed as a general pesticide for use on Wisconsin Department of Natural Resources lands. My comments are related to the specific assessment considerations that you wanted me to consider. Nearly all of my toxicological information is taken directly from the US EPA document that was used to consider re-registration of this active ingredient in 2006. It can be accessed directly from the EPA website or by clicking here.

Dicamba is used for post emergent control of broadleaf weeds and woody plants in agricultural, industrial, and residential settings. It has been registered for use since 1967, and is now widely used in pastures and home and garden markets mixed with other active ingredients to provide a broader spectrum of weed control. Recent use in agronomic crops has increased as now genetically modified soybeans can tolerate applications over the top of the crop. This has caused substantial concern as off-target drift and injury has been documents in many Midwestern and southern States that grow soybeans. Some stats are adding additional restrictions to dicamba use in agronomic settings, but to my knowledge these will not impact the use patterns suggested to be implemented here.

Assessment Considerations

1. What are the human health risks (applicator and the public)? The US Environmental Protection Agency did review this product in 2006 and concluded that minimal risks are present to human health from ingestion of residue from its current use. EPA is concerned about occupational risk (risk to applicator), but believes that requiring users to wear gloves and other appropriate PPE per the

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label instructions will mitigate this concern. EPA is concerned about acute eye irritation, but feel that new label restrictions mitigate this hazard.

2. What are the potential negative environmental impacts and risks? US EPA is concerned about ecological risk (non-target plant/wildlife injury). Risks appear to be mostly due to off-target movement of the molecule. It does not persist long in the environment (typical half-life of 6 to 14 days), but can me mobile in some soils and due to its slow anaerobic breakdown (>141 days), concern about persistence in groundwater is present by EPA. But no restrictions on use related to soil type are present on labels that I am aware of. Because of the potential non-target animal and plant risks, EPA reduced the legal rate that can be applied in one application (now present on labels). EPA feels the rate reduction lowers acute risks to all animals, as well as chronic risk to mammals. Assessed risks to terrestrial plants will be lowered, but not eliminated. The largest concern is the risk of exposure to threatened/endangered wildlife and plants. Non-target spray drift was also mentioned as a concern, and with the publicity from recent drift cases in agriculture this should be a major issue in using this product. Requiring applications at times when minimal drift is likely would be a reasonable way to mitigate this issue, especially in non-crop areas.

3. How effective is the proposed pesticide for the proposed target(s)? Dicamba alone is effective at controlling shrub species. This enhanced effectiveness when used alone is often associated with a much higher use rate compared to other products. As can be seen in section #2, lowering the use rate is the main method of ensuring plant/wildlife safety. Limiting use to spot applications on limited areas as general use pesticides are will limit this effect, but this fact should still be considered. Its effectiveness when mixed with other active ingredients has been suggested to be improved, but I have not seen any data to allow me to evaluate this claim.

4. What is the specificity of the proposed pesticide to the proposed target(s)? Dicamba is considered a "broadleaf" herbicide with limited activity on grass species. I suggest avoiding applications within a month prior/post seeding of grass species unless injury is acceptable. Some broadleaf species may be more tolerant than others, but the response is often rate and/or timing specific.

5. Is there a need for a maximum application site frequency and/or area other than specified on the product label? Not that I am aware of.

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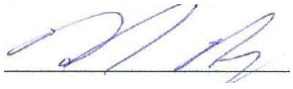
6. Is there another pesticide and/or Integrated Pest Management (IPM) technique that should be considered in-lieu of the proposed pesticide? Brush management is challenging in general and often land management goals drive techniques used vs effectiveness. Dicamba can provide effective control with many species but often a much higher rate is used compared to other products. With brush management I suggest comparing the use of dicamba (alone or in mixtures) to triclopyr based products as these are the standard treatments. If control isn't better or cost isn't substantially less I would not recommend using this active ingredient.

7. Other Considerations: I have heard that economics is a main driver for the proposed use of this active ingredient in combination with others on DNR lands. I suggest conducting a close comparison of acute toxicity of products being considered to ensure that no increased risks are present with one product over another. I do know that some new formulations of triclopyr now have reduced risk of eye injury, compared to older formulations or products. I would consider using the safer products over others that are less expensive assuming control is acceptable with both options. In my opinion avoiding any potential eye injury is a greater benefit than reducing costs of herbicide purchased. Also I emphasize the importance to avoid drift to non-target species, especially if applications have the potential to drift off DNR owned lands. This has created a bad situation between farmers, with a few cases resulting in fights, gunshots. I think it would be wise to avoid this situation by using other products if any concern for drift exists.

Feel free to contact me if you have any specific questions with regards to this information.

Sincerely,



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