



January 17, 2020

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 aminopyralid should continue to 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. All of my toxicological information is taken directly from the US EPA or the National Pesticide Information Center. I have listed links to these resources at the end of this letter.

Aminopyralid is a selective herbicide providing control of a range of broadleaf weeds and brush in grasslands, forestry, non-crop, and natural areas. It is applied to foliage of plants that are actively growing and directly to cut surfaces or bark of trees. It is mostly targeted towards noxious and invasive annual, biennial and perennial weed species, but also has control of agronomic broadleaf weeds. Aminopyralid can also provide residual weed control activity controlling re-infestations and reducing the need for re-treatment depending on the rate applied and the target weeds. It has been registered for use since 2005 and is a key tool for invasive species. Due to its selective nature it also allows for use in prairies as it has limited activity on several native forb species. It is currently used by Wisconsin DNR for invasive plant control of spotted knapweed, crown vetch, Canada thistle, Japanese knotweed, black locust and a range of other invasive plants. While alternatives exist to this product its effectiveness (especially perennials), residual activity, and selectivity in combination with its environmental safety make this an effective and often selected herbicide.



### Assessment Considerations

1. What are the human health risks (applicator and the public): Acute toxicity studies indicate that aminopyralid has low toxicity to humans. While the active ingredient does have the potential to cause acute eye irritation, the formulated product does not have this attribute and is classified in the lowest risk category for a pesticide (caution). Chronic toxicity is also very low for aminopyralid. Neurotoxicity studies found no impact from this chemical. Mutagenicity and developmental studies were similarly negative. Aminopyralid has been classified as “not likely” to be carcinogenic to humans. While there is risk of exposure to people visiting natural areas, following the label restrictions and using appropriate signage to prevent them from accessing areas where it was used for the appropriate time should eliminate the potential for exposure.
2. What are the potential negative environmental impacts and risks?
  - **Environmental fate:** Aminopyralid persists in the environment to varying degrees. In soil, this molecule degrades by microbes with half-lives between 31 to 533 days depending on soil type, with a typical half-life of 104 days. Aminopyralid breaks down in water via photolysis with half-lives of around 0.6 days. Longer persistence in water sediments was observed (breakdown via hydrolysis) with observed half lives between 462-990 days. Aminopyralid is bound to the soil, but does have minor potential for leaching but studies indicate minimal leaching below 30 cm soil depth with rapid degradation even at these depths. Thus EPA did not place any advisory statements about applications to areas with coarse soil or high water tables. Potential for surface water contamination is present but risk is low due to rapid breakdown in water and dilution.

**Risk to organisms:** Aminopyralid has been shown to be practically non-toxic to birds, fish, honeybees, earthworms, and aquatic invertebrates and slightly toxic to eastern oyster, algae and aquatic vascular plants. Aminopyralid is not expected to bioaccumulate in fish tissue. There are no acute or chronic risks to non-target endangered or non-endangered fish, birds, wild mammals, terrestrial and aquatic invertebrates, algae or aquatic plants. It is believed that terrestrial applications will be bound to the soil or organic matter or diluted to a high enough



degree that if transported via surface water it will not pose a risk to these species. Using buffer strips and limiting spray drift could further limit this potential impact.

In summary this product is used in Wisconsin, primarily for invasive plant control. Studies conduct indicate that applicators or citizens are not at risk from its use if label directions are followed (PPE and restricted entry intervals). Few wildlife have any sensitivity to this product. And given that the use typically increases the quality of the habitat for these species (eliminates unwanted species), positive results for wildlife are expected. Given these facts and the limited use by WI DNR I am confident that, *if the label is followed*, limited to no impacts to the environment will occur due to WI DNR use.

3. How effective is the proposed pesticide for the proposed target(s)? Aminopyralid based herbicides are effective on several highly invasive species. Given its residual activity and selectivity it is an effective and flexible tool for WI DNR land managers compared to other products.
4. What is the specificity of the proposed pesticide to the proposed target(s)? Aminopyralid is used primarily for treating to foliage of invasive broadleaf plants but it is also used for application to trees/shrub stems (cut surface/basal bark). Its use in active restoration can provide invasive plant control with limited injury to desirable plants, especially in prairies.
5. Is there a need for a maximum application site frequency and/or area other than specified on the product label? No.
6. Is there another pesticide and/or Integrated Pest Management (IPM) technique that should be considered in-lieu of the proposed pesticide? Several other products exist that will provide similar results, but they often have a higher cost, environmental concerns, and/or greater non-target impacts. Details would be site and species specific. Other techniques to be considered include removal, grazing, burning, and repeated mowing. These techniques have positive and negative attributes which would need to be considered compared to herbicide use but most often these non-chemical treatments either result in a large amount of disturbance (removal)



or need to be repeated multiple times at a higher cost to obtain similar levels of success as the use of this herbicide.

7. Other Considerations: This product can persist through the composting process so ensure that any plant material treated does not enter this pathway, nor manure from animals that have eaten treated plants (see label).

[https://www3.epa.gov/pesticides/chem\\_search/reg\\_actions/registration/fs\\_PC-005100\\_10-Aug-05.pdf](https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_PC-005100_10-Aug-05.pdf)

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

Sincerely,

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