

August 26, 2011

MINNESOTA DEPARTMENT OF AGRICULTURE SPECIAL REGISTRATION REVIEW

SUBJECT: SUMMARY OF THE SPECIAL REGISTRATION REVIEW OF COMMON INSECTICIDES USED TO CONTROL EMERALD ASH BORER IN MINNESOTA

The Minnesota Department of Agriculture (MDA) has completed a special registration review for the following insecticide active ingredients used to control emerald ash borer (EAB; *Agrilus planipennis*) in Minnesota: **dinotefuran**, **emamectin benzoate**, and **imidacloprid**. These three active ingredients were selected for special review because they are widely used by homeowners, professionals and municipalities. The primary function of special registration reviews is to provide information to the Commissioner of Agriculture to assess which, if any, additional non-regulatory and/or regulatory actions are warranted for the registration of pesticides under special review in Minnesota. These reviews are not intended to be redundant of analyses and decisions reached by the U.S. Environmental Protection Agency (USEPA) during federal registration. Rather, special registration reviews were initiated in response to a Minnesota Legislative Auditor's report that included recommendations to review a select number of pesticide registrations and evaluate the need to prevent "any unreasonable risk to humans or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide [Minn. Stat. § 18B.01 Subd. 31]."

This special registration review focused on exploring or completing three main tasks: 1) Improve use guidance for common EAB insecticides; 2) Review insecticide labels for registration consistency; and 3) Continue to develop outreach and education materials for both professional applicators and homeowners. In addition, the MDA began to establish capabilities to track potential impacts to water quality and began to consider impacts to non-target organism (mainly pollinators) from current and future insecticide applications to control EAB in Minnesota.

BACKGROUND

EAB was first discovered in Minnesota in May of 2009, in a St. Paul neighborhood. Since this initial discovery, the MDA has confirmed infestations in Ramsey, Hennepin, Houston, and most recently, Winona County. This invasive beetle is one of the most destructive tree pests in North America and now threatens the health and survival of millions of ash trees throughout Minnesota.

The MDA began conducting a number of Minnesota-specific EAB insecticide management and registration activities in 2010, prompted in part by recommendations from the Minnesota EAB Science Advisory Group, stakeholder environmental concerns, and an insecticide product misuse complaint. To assist homeowners, the MDA in partnership with the Department of Natural Resources (DNR) and

University of Minnesota Extension developed a guide that describes treatment options, as well as key factors to consider before deciding to conduct an insecticide treatment. To assist professional pesticide applicators, the MDA created technical or compliance-based outreach materials for specific insecticides. A fact sheet was developed for TREE-äge, notifying applicators of its new classification as a Restricted Use Pesticide (RUP). In June 2010, and after conferring with the USEPA, the MDA sent notification to over 1,900 commercial pesticide applicators regarding how to comply with EAB insecticide label application limits for products containing the active ingredient imidacloprid. A more complete chronology of MDA activities related to EAB management and insecticide product registration activities can be found in the longer special registration review assessment at <http://www.mda.state.mn.us/chemicals/pesticides/eabinsectidereview.aspx>.

ENVIRONMENTAL REVIEW

This special registration review assessed the potential for adverse environmental impacts from the use of dinotefuran, emamectin benzoate and imidacloprid to control EAB in Minnesota. Specifically, the MDA assessed the following environmental issues: water quality monitoring laboratory analytical capabilities; groundwater and surface water environmental fate and monitoring; risk to pollinators; and risk to other terrestrial non-target organisms. For most situations where soil-applied and trunk injected treatment methods are used, it was determined that carefully following product label directions will minimize impacts to human health and the environment while protecting investments in private and public property landscapes and eco-systems.

LABEL REVIEW

As part of this special registration review, the MDA also looked carefully at insecticide label enforcement, interpretation and compliance concerns and identified problems with label consistency, including multiple inconsistencies with distributor labels. The MDA periodically reviews pesticide labels in response to applicator concerns about compliance and occasional confusion regarding the intent of federal labels. These label reviews often result in the development of additional compliance communications and guidance meant to help applicators and educators.

As a result of the EAB label review and in response to requests from applicators, the MDA began to build off of an initial 2010 notification letter to pesticide applicators, and developed draft use guidance that offered additional advice to help applicators comply with USEPA label use limits for dinotefuran and imidacloprid pesticide products. The draft guidance provides illustrations and calculations for how an applicator might achieve label compliance, including how one-acre units can be defined. With support from organizations engaged in marketing, application, or education and outreach related to EAB control, the MDA is continuing to refine this additional guidance.

This review has also identified a number of pesticide label issues; including imidacloprid labels that have not been amended to remove foliar spray applications for the treatment of EAB, as requested by USEPA. In addition, the MDA has identified issues with collateral labeling and EAB pesticide product marketing materials that potentially need adjustment to be compliant with state and federal regulations. The collateral labeling concerns have been forwarded to USEPA Region 5.

CONCLUSIONS OF REVIEW AND OPPORTUNITIES FOR ACTION

The emergence of EAB in Minnesota presents enormous environmental and economic challenges to preserving and protecting ash trees. With the emergence of new invasive insects accompanied by the available number of insecticide options, protecting all high value trees in an area can be challenging. A variety of available insecticides and application methods can help arborists and homeowners manage EAB within the framework of legal product use while accounting for annual per acre use limits.

The MDA takes seriously its responsibility to consider important, defensible scientific research in the regulation and review of pesticides. Therefore, in developing conclusions for this review, the MDA conducted extensive literature reviews and worked with researchers, regulators and educators. As EAB research progresses, costs and methods of treating trees will continue to change. The MDA is committed to staying current on these treatment options, associated pesticide labels and USEPA registration review decisions. Additionally, the MDA will continue to evaluate the potential for unreasonable adverse effects on man and the environment as a result of EAB insecticide use.

To conclude this registration review, the MDA has identified the following issues related to the prevention, evaluation, and mitigation of EAB insecticide impacts:

- State registered insecticide labels, collateral labeling and online pesticide product marketing materials are not always consistent with USEPA stamped labels and are in need of review for accuracy to be legally compliant with state and federal regulations.
- Many EAB insecticide products containing imidacloprid and dinotefuran have annual use limits and use directions that are not readily understood by applicators. Continued development of use guidance will help applicators and others comply with label directions and minimize environmental impacts, all while meeting tree treatment objectives.
- Education and outreach materials for both homeowners and professional applicators on EAB control and potential environmental impacts would help to protect water resources and pollinators. The MDA will continue to examine what types of application scenarios will most likely lead to water quality impacts and pollinator exposure.
- The MDA Laboratory Services Division does not currently have an analytical method for dinotefuran and its degradate MNG, despite label recommendations to periodically monitor shallow groundwater in the use area. Dinotefuran sales and use can be reviewed to assess the need for MDA analytical method development or other analytical solutions.
- Continued water monitoring for imidacloprid in urban streams will be helpful in evaluating any impacts from any increased use of imidacloprid EAB insecticide products.