



NEEM OIL – Why Master Gardeners DO NOT Recommend its Use

Currently, there are no registered domestic class pesticidal products in Canada that contain Neem oil. A company called Terramera is working to register a NEEM based product for agricultural purposes, but the Pest Management Regulatory Agency (PMRA) of Health Canada has not yet certified the product as safe for use. PMRA “has the mandate to protect human health, safety and the environment by minimizing risks associated with pesticides, while providing Canadians access to the pest management tools they require for agriculture, forestry, industry, and personal use,” (Health Canada: “The Regulation of Pesticides in Canada”).

Neem oil is derived from fruits of the neem tree (*Azadirachta indica*). It is a complex mixture of chemicals that have been found to have antibacterial, antifungal, antiparasitic and pesticidal properties. One of the main active ingredients in NEEM oil is a compound called **Azadirachtin**. There are registered products containing this ingredient, e.g. NeemAzal Technical and TreeAzin. These are registered for the purpose of treating Emerald Ash Borer and can only be used by licensed professionals.

“The precise mode of action is unknown; however, azadirachtin does affect insect hormones, interfering with moulting in immature insects and inhibiting reproduction in adult insects. ... NeemAzal Technical is highly toxic to insect larvae and thus, has the potential to pose a risk to honeybees if the brood is exposed to contaminated pollen or nectar brought back to the hive by the adults.” In animal tests, the product was “slightly toxic via the inhalation route, and therefore the hazard statement “CAUTION POISON” must appear on the label.” It was “mildly irritating to the eyes, and caused an allergic skin reaction. Consequently, the hazard statements “CAUTION EYE IRRITANT” and “POTENTIAL SKIN SENSITIZER” are required on the label,” (PMRA. 2012).

Previously, a number of unregistered NEEM based products were once sold as “leaf shine” in Canada. In 2012, Health Canada took compliance action and those products were removed from the market. NEEM oil is sold as an herbal product for therapeutic and **medicinal** use, however these products are not registered as pesticides and have not been studied for their environmental impact in Canada.

If you choose to purchase a pest control product to address pest concerns in or around your home and garden, Health Canada asks that you purchase a pesticide that has been approved by Health Canada with a *Pest Control Products Act* (PCPA) registration number identified on the product label. “Only pesticides that are registered for use under the PCPA may be imported into, sold or used in Canada.” (Health Canada: The Regulation of Pesticides in Canada) That is the law. In compliance with the law, Master Gardeners do not recommend the use of non registered products.

Health Canada does recognize that people may choose to make “homemade” pesticides. They advise the public “to be aware that preparing, storing, and using homemade pesticides may pose health and environmental safety risks. Homemade pesticides do not undergo any scientific evaluation and do not have label directions that the user can follow to ensure safe use or effectiveness. While some recipes, such as mixtures of soap and water, are not likely to pose human health risks, other recipes that require cooking and boiling may pose health or environmental concerns.”

Learn more:

- Pest Management Regulatory Agency (PMRA). 2012. Registration Decision: NeemAzal Technical, containing Azadirachtin. Health Canada
https://www.beaconsfield.ca/images/stories/pdf/HealthCanada_NeemAzalTech_2012_en.pdf
- Health Canada: The Regulation of Pesticides in Canada
https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/cps-spc/alt_formats/pdf/pubs/pest/fact-fiche/regulation-Pesticides-reglementation-eng.pdf
- Health Canada: Pesticides and pest management: Frequently asked questions
<https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/frequently-asked-questions.html>
- Health Canada: The risks of homemade pesticides <https://www.canada.ca/en/health-canada/services/about-pesticides/homemade-pesticides.html>