

Introduction

Products Listed in This Publication

Products listed in this book are registered for use on field crops and are organized by pest for each field crop. Consult each product label before using a pest control product. Labels for registered pest control products are available at the Pest Management Regulatory Agency (PMRA) website at <http://pr-rp.hc-sc.gc.ca/ls-re/index-eng.php>.

Within this publication, where rate ranges exist, consult the product label to determine what rate is most appropriate for your pest or disease situation.

Crop Group Information

A crop group is a grouping of plant species based on botany and taxonomy (e.g., plant families), as well as on how the crops are produced. Crop groups are often further divided into smaller and more closely related subgroups. A pest control product may be registered on a subgroup, rather than the entire crop group. Crop groupings are used primarily to set maximum residue limits and establish a common pre-harvest interval (PHI) for a similar set of crops. It is important to remember that not all products have a crop group registration, and products registered on one crop are not necessarily registered on all members of its crop group. There are some crops that do not belong in a crop group. A complete list of all crops included in both original and revised crop groups can be found on the Health Canada website:

www.hc-sc.gc.ca/cps-spc/pest/part/protect-proteger/food-nourriture/rccg-gcpcr-eng.php.

Levels of Control for Fungicides and Insecticides

The Efficacy Guidelines for Plant Protection Products in the *Pest Management Regulatory Agency Directive 2003–04* define levels of control as follows:

Fungicides

Control: The product, when applied in accordance with the label directions, consistently reduces disease incidence and severity to a commercially acceptable level.

Suppression: Consistent control at a level that is not optimal but still of commercial benefit. Suppression is not used for products that show highly variable performance.

Insecticides

Control: The product, when applied in accordance with the label directions, consistently reduces pest numbers or pest damage to a commercially acceptable level.

Suppression: The product, when applied in accordance with the label directions, does not consistently reduce pest numbers or pest damage to a commercially acceptable level. Under such situations, the level of performance offered by the product must still have value in a pest management program.

Resistance Management Strategies

Different pesticides control pests or diseases in different ways. This is called the mode of action. Pesticides are grouped into chemical families and/or groups based on their mode of action. Using the same pesticide with the same mode of action season after season or several times within the same season could result in the target pest or disease becoming resistant to the chemical family. A pest or disease can develop resistance to one chemical family but still be very susceptible to another. Therefore, to reduce the risk of a pest or disease developing resistance, rotate between chemical groups and/or families within the same season or during successive growing seasons for control of the same pest or disease. For example, if using a Group 11 fungicide (e.g., Quadris) to control rust in corn, and more than one application is required that season to manage the disease, use a product from a different group (e.g., Tilt fungicide, which is a Group 3 fungicide) for the second application, because it controls the disease using a different mode of action. Pesticide labels indicate the chemistry group or family for the product. For a list of insecticide and fungicide chemical groups, see Appendix F. *Pesticide Groups Based on Sites of Action — Insecticides*, and Appendix G. *Pesticide Groups Based on Sites of Action — Fungicides*.

Only use chemical control when necessary and consider implementing an integrated pest management strategy, including cultural control (e.g., crop rotation, disease/pest resistant varieties, scouting, use of certified seed, etc.) or biological control, which will also help reduce the risk of a pest or disease developing resistance to a pesticide.

Do not exceed the total number of applications allowed per year for each product. Do not apply the product at rates lower than the recommended rate on the label.

Monitor recently treated pest or disease populations for signs of resistance.

See the pesticide label for more information on resistance management. As well, for more information on resistance management strategies or integrated pest management (IPM) options for a specific pest, see OMAFRA Publication 811, *Agronomy Guide for Field Crops*, or contact a certified crop advisor. IPM options are listed in the first column of the Control Options tables in this publication.

Pest Manager App



Pest Manager is a companion resource to this publication that can be downloaded from the Grain Farmers of Ontario website (www.gfo.ca/apps) for Apple, Blackberry and Android devices. *Pest Manager* allows you to identify, map and find integrated pest management options for common weeds, insects and diseases in corn, soybean and cereal crops. Any pesticide use information in the app is specific to Ontario only, and users should always read the product label — and ensure all directions on the label are followed — before applying any pesticide.

These management options are currently only pesticide-related. Pesticide options are ranked by their average control of all pests selected. A user can also look up information on a pest and a specific pesticide.

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