

# Guide to Crop Protection 2024

For Reference Until December 31, 2024  
This publication is updated annually and replaces  
the 2023 and previous issues.

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**Table 1: Metric Conversion Factors\* (Approximate)**

Metric Unit	Metric to Imperial	Imperial Unit	Imperial to Metric	Metric Unit
Linear centimetre (cm)	x 0.39	Linear inch	x 2.54	Linear centimetre (cm)
Area square metre (m <sup>2</sup> ) hectare (ha)	x 1.2 x 2.5	Area square yard acres	x 0.84 x 0.4	Area square metre (m <sup>2</sup> ) hectare (ha)
Volume litre (L)	x 0.22	Volume gallon	x 4.55	Volume litre (L)
Pressure kilopascals (kPa)	x 0.14	Pressure psi	x 6.9	Pressure kilopascals (kPa)
Weight gram (g) kilogram (kg)	x 0.04 x 2.2	Weight ounce (oz) pound (lb)	x 28.35 x 0.454	Weight gram (g) kilogram (kg)
Agricultural litres per hectare (L/ha) litres per hectare (L/ha) litres per hectare (L/ha) millilitres per hectare (mL/ha) kilograms per hectare (kg/ha) grams per hectare (g/ha)	x 0.089 x 0.357 x 0.71 x 0.014 x 0.89 x 0.014	Agricultural gallons/acre quarts/acre pints/acre fluid ounces (fl. oz)/acre pounds (lb)/acre ounces (oz)/acre	x 11.23 x 2.81 x 1.41 x 70.22 x 1.12 x 70	Agricultural litres per hectare (L/ha) litres per hectare (L/ha) litres per hectare (L/ha) millilitres per hectare (mL/ha) kilograms per hectare (kg/ha) grams per hectare (g/ha)

\*EXAMPLE: To convert centimetres to inches, multiply by 0.39; conversely, to convert inches to centimetres, multiply by 2.54.

CAUTION: Herbicide labels are in metric units only. Conversion between the Metric and Imperial system may result in confusion. It is recommended to use metric units only.

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# Introduction

## How to Use This Book

This publication is only a guide. Always refer to the product label for application details and precautions. If the information in this publication differs from the label information, follow label instructions.

The *Guide to Crop Protection* is divided into five chapters: (1) Introduction; (2) Weed Control; (3) Foliar Fungicides; (4) Seed Treatments; and (5) Insect Control.

To use the information in each of these sections, use the following process:

1. Turn to the charts at the beginning of each section. There is a set of charts for weeds, plant diseases and insect control. Select the chart for the crop you want or plan to grow. Use the chart to match your weed, disease or insect problems with the products available for that crop.
2. Once you have narrowed your product choices down to a few candidates, go to the recommendation section for that product. Products are listed alphabetically. Read the recommendations thoroughly for each product you are considering.
3. Read the product label attached to the container for detailed instructions on application.

This publication is intended to be used as a guide only. Information contained herein is that available at the time of printing.

While every effort has been made to ensure accuracy, the provincial government does not accept responsibility for label changes. When more than one trade name is listed, not all weeds or tank mixes may appear on all labels. Consult product labels attached to pesticide containers for final detailed instructions.

Certain recommendations in this publication are given in quantity of commercial product per acre (mL, L, g or kg/acre). Product labels are given in quantity of product per hectare (mL, L, g or kg/ha). To avoid application errors be sure to read and understand label recommendations.

The *Guide to Crop Protection* includes the most recent recommendations for weed, plant disease and insect control in field and forage crops. These recommendations are based on the uses registered under the Pest Management Regulatory Agency's *Pest Control Products Act*. It is an offence under *The Pest Control Products Act* to apply any chemical in a manner not consistent with the product label. If you have any doubts regarding the instructions in this publication, or on the product label, contact the company representative, your local agricultural office or the Pest Management Regulatory Agency for further advice.

## Product Labels and PCP Numbers

On each Product Page you will see a Registration or PCP number, so named because it is mandated by the *Pest Control Products Act*. Under the Act, every pesticide requires a unique identifier – the product's Registration or PCP number. That number must also appear on the product's label.

**The pesticide label packaged with the product** is the authoritative source of information on use of the product and will contain more detailed information than is included in this Guide. Some products have a number of trade names for the same active ingredient. However, each product will have its own Registration (PCP) number and these appear next to the registrants' names. Users who are seeking more detailed information than is provided in this guide, prior to purchase, can use the Registration (PCP) number to access a sample product label online through the Pest Management Regulatory Agency's (PMRA) website or they can contact the PMRA Hotline by phone at 1-800-267-6315.

Visit <http://pr-rp.hc-sc.gc.ca/lr-re/index-eng.php> to access the Electronic Label Search Tool. The PMRA Product Information database can be searched by a product's trade name, active ingredient, company name or Registration (PCP) number. Since several products can contain the same active ingredient and there are often several versions of the same or similar labels on this database, using the PCP number is the most direct route to finding the label that links to the product page in this Guide. **There may be some differences between a label found on the package and the sample labels found on the PMRA-Label Search web site so always refer to the packaged product label when applying the product.**

Once the product is located, you may click on its number to view an Adobe Acrobat (PDF) document containing the label and any supplemental registrations. Some of these documents run to many pages but you can use the 'Find' capabilities of the Acrobat Reader plug-in for your browser to jump to specific areas of interest. If you do not have Adobe Acrobat Reader installed on your computer, you can download a free version from [www.adobe.com](http://www.adobe.com).

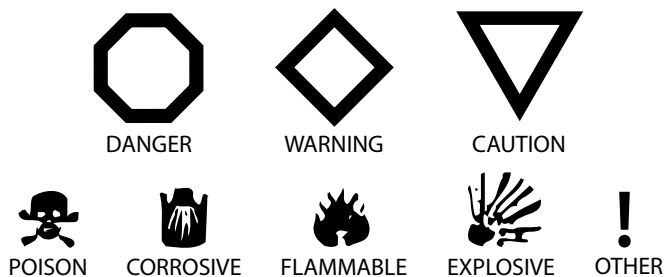
## Safe Use of Herbicides, Fungicides and Insecticides

Herbicides, fungicides and insecticides are classified according to the use hazard and risk involved. The categories of hazard are:

- toxicity
- flammability
- explosive potential
- corrosivity
- other

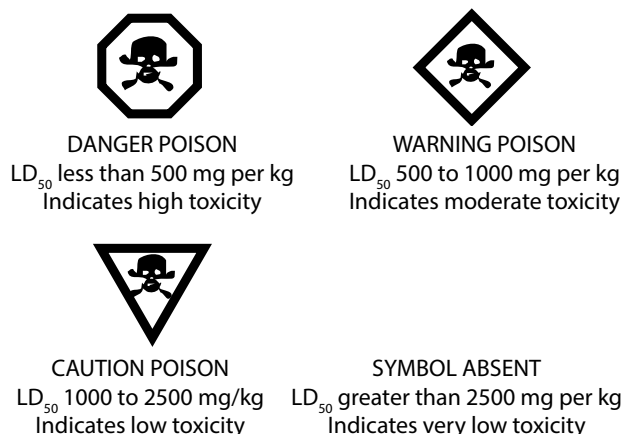
The degree of risk is represented by symbols taken from common traffic sign shapes represented by the stop, caution and yield signs. The signal word for each of the signs is danger (high risk), warning (moderate risk) and caution (low risk). Where the risk is minimal, no designation is required. The label on the container will carry the appropriate signs for the protection of the user. Degree of risk symbols for herbicides, insecticides and fungicides used in field and forage crops are included in the product directory. The symbols are illustrated in Figure 1.

Figure 1. Degree of Risk and Hazard Symbols



LD<sub>50</sub> values are used to rate the toxicity of pesticides. The LD<sub>50</sub> refers to the dose of pesticide (in mg per kg of the test animal's body weight) that is lethal to 50 percent of the group of test animals. For example, if a pesticide has an LD<sub>50</sub> value of 10 mg per kg, and the test animals each weigh 1 kg, then 50 percent of the animals would die if they each ate 10 mg of the pesticide.

Table 2. Oral LD<sub>50</sub> Values as they relate to the Risk/Hazard Symbols



Different types of protective equipment are required for pesticides that differ in toxicity. Special equipment requirements are described on the product label, but in general the following precautions must be taken when using pesticides of different hazard ratings.

- **Danger Poison** – requires goggles, respirator, gloves and skin protection, avoid fumes and spray mist.
- **Warning Poison** – requires goggles, gloves and skin protection, avoid fumes and spray mist.

## Protective Clothing

Wear protective equipment as described in the chart to reduce exposure.

EQUIPMENT	PROTECTION	HOW TO WEAR IT
Coveralls	<p>There are two types of coveralls: disposable and reusable.</p> <p>Disposable coveralls are lightweight and comfortable on warm days. They can be worn for mixing and applying pesticides, then discarded at the day's end. If they become contaminated, they should be discarded at once.</p> <p>The second type of coverall is made of washable fabric and may be reused many times. These fabric coveralls are adequate for use with all but the most highly toxic and concentrated pesticides.</p>	<p>Button (or zip) right up to the neck. Loose coveralls around the neck will suck and blow pesticide in and out of the interior of the coveralls as you bend and move.</p> <p>Wear coveralls over a long-sleeved shirt and pants.</p>

- **Caution Poison** – requires gloves and skin protection, avoid fumes and spray mist.

The absence of a hazard symbol on a pesticide label indicates low toxicity to mammals. Nevertheless, protective clothing should be worn when using pesticides that do not have a hazard symbol.

## Protecting Yourself from Exposure to Herbicides, Fungicides and Insecticides

The use of protective equipment and sound safety procedures will help minimize your exposure to herbicides, fungicides and insecticides. Follow the 10 rules for safe application listed below, and wear the safety equipment recommended.

### 10 Rules for Safe Application

1. Never smoke or eat while applying pesticides.
2. Avoid inhaling sprays or dusts. Wear protective clothing and a respirator.
3. Sprayer lines carrying chemicals should not enter the operator's cab.
4. Have soap, water and a towel available. Should concentrated product spill on skin, hands, face or eyes, wash immediately.
5. Wash hands and face when leaving the treated area, before break periods, lunch or urination.
6. Bathe or shower and change into clean clothing after working with pesticides. Wash clothing each day before re-use.
7. Call a physician or get the patient to a hospital immediately if symptoms of illness occur during or shortly after pesticide application. Be sure to take along the product label or container.
8. Store pesticides out of reach of children and where there is no chance of contact with human food or livestock feeds. Do not store herbicides with insecticides and avoid cross-contamination. Storage areas should be locked.
9. Keep chemicals in their original containers, never in unmarked containers or bottles used for food or drink.
10. Follow proper container disposal methods. All containers should be triple rinsed or pressure rinsed, punctured to render the container non-reusable, and delivered to designated disposal sites.

EQUIPMENT	PROTECTION	HOW TO WEAR IT
Aprons	When pouring or otherwise handling concentrated pesticides, it makes good sense to wear protection in the form of an apron. The apron protects the front of your body from spills or splashes of the concentrate.  The apron should be made of rubber or synthetic liquid-proof material that will resist the solvents.	Make sure the apron covers your body from your chest to your boots.
Gloves	Protect your hands by wearing chemical-resistant gloves. Neoprene gloves provide the best protection. Natural rubber gloves may be used when handling organo-phosphorus or carbamate pesticides. Be sure that they are designed for use with solvents and pesticides. Never use lined gloves, gloves with wristbands or leather gloves.	Put gloves on and roll up the first inch or two of the cuff. That way when you lift your hands, any liquid on the gloves won't drip down your arms.
Hats	Use a chemical-resistant hat, preferably made of washable plastic. The hat may be a hard hat or made of flexible plastic. In either case, it should have a plastic sweatband. Wash and dry entire hat after each use and before storing. Ordinary baseball caps with cloth sweatbands are dangerous as they absorb the pesticide and recontaminate the forehead each time you wear them. Even small amounts of moderately or slightly toxic pesticides may cause severe skin irritation or other illness if exposure continues for several days.	
Boots	Wear chemical-resistant, unlined boots. These boots are available in a variety of styles and materials.  Neoprene boots are the best. Knee-length boots offer greater protection because they extend above the lower end of the apron. Avoid leather or fabric boots and shoes because these will absorb pesticides and cannot be cleaned effectively.	Wear your pant legs outside the top of your boots. This will prevent spills and splashes from running into the boot and onto your leg.

## Protecting Your Eyes, Face and Lungs

Wear the following equipment to protect your facial area from exposure.

EQUIPMENT	PROTECTION	HOW TO WEAR IT
Goggles	Chemical-resistant goggles keep your eyes safe from both splashing and, if using dry formulations, dusts or granules. Don't use goggles with cloth or elastic headbands as these will absorb pesticides.	Wear goggles snugly on your face so that the sides of your head are protected from splashes. If you wear glasses, make sure you purchase goggles that fit snugly over them. Never wear contact lenses when working around pesticides.
Respirators	Only NIOSH-approved respirators should be used. Do not exchange parts of different respirators. (For example, do not use a cartridge produced by Company "A" with a respirator produced by Company "B" as the combination may not provide adequate protection to the user). Dust masks are ineffective in protecting against herbicide vapours. Similarly, the filters on tractor cabs are intended to remove dust and are not designed to protect against herbicide vapours or mists. Chemical cartridge respirators are recommended for outdoor use when mixing and applying herbicides.	When carrying out operations, change filters each day. The cartridge should be replaced when chemical odour becomes apparent or when breathing becomes difficult. New cartridges should always be installed at the beginning of the spray season. Prior to commencing work, check the face seal while the respirator is on the wearer's face. Regardless of design, respirators cannot be worn securely by people wearing beards, moustaches or sideburns.
Face Shields	Goggles offer some protection, but frequently full-face protection is advised or required according to the pesticide label. It is especially important to protect your eyes and face when pouring or mixing liquid concentrates. Effective face shields are made of clear plastic.	Since the shield attaches to the hard hat, you can raise or lower it as needed.

## Understanding Maximum Residue Limit Statements in the Guide

To ensure the safety of Canadian food, maximum residue limits (MRLs) set the maximum allowable amount of a pesticide residue on a crop or in a processed crop product (e.g. oil or flour). Residue levels are typically assessed for pesticides registered on crops grown for food. MRLs even exist on imported food for pesticides or pesticide uses not registered in Canada.

Health Canada's Pest Management Regulatory Agency (PMRA) is responsible for setting MRLs in Canada. Similarly, importing countries set their own MRLs (also referred to as 'import tolerances') that Canadian crop exports are subject to. Trade issues between importing and exporting countries can arise due to variability in MRLs or a lack of established MRLs.

Crop pesticide uses that may contribute to trade irritations have been flagged on product pages in the Guide to Crop Protection with the statement: '**Note: As of January 1, 2022 <http://keepingitclean.ca> indicates that grain from crops treated with this product may have market access concerns. Please see pg 10 for more information AND consult potential grain buyer(s) before using this product.**' Manitoba Agriculture and Saskatchewan Ministry of Agriculture have included such statements on products uses with known or potential MRL issues. However, this may not be a complete list of product uses with potential trade issues.

Producers can follow these practices to help prevent exceeding MRLs:

- Read and follow product labels, especially with respect to registered crops, maximum application rates, maximum number of applications per season, crop stage and pre-harvest intervals.
- Talk to your commodity buyer before applying a pesticide, especially for new pesticide chemistries, new products and products registered on new crops.

More information on MRLs and 'flagged' products is available at <http://keepingitclean.ca/>.

## Avoiding Spray Drift

To minimize the risk of drift, follow these guidelines:

1. Do not spray in winds above 16 km per hour (10 miles per hour).
2. Do not spray under dead calm conditions in early morning, night, or late evening. These are often associated with temperature inversions, and the combination of these factors can result in long-distance spray drift (2 km or more). Fog or dust that seems to hang in the air is a good indicator of an inversion.
3. Avoid nozzle pressures above 45 psi (310 kPa) for conventional flat fan tips.
4. Use a minimum of 45 L per acre water for all pesticides unless otherwise specified for the product.
5. Take note of buffer zones identified in the "Restrictions" section of this guide. Do not spray when the wind is blowing towards a nearby sensitive crop, shelterbelt, garden, or water body.
6. Use amine formulations of 2,4-D or MCPA where possible. Use special care when applying volatile herbicides (most herbicides in Group 3 and Group 4, particularly ester formulations). Avoid spraying these products on or immediately before hot days.
7. Ensure that air flow from air assisted sprayers is properly set to minimize airblast rebound and drift for different crop canopies.
8. Operate nozzles at their minimum recommended height. For 80° tips, this is 18" (45 cm), and for 110° tips, this is 12" (35 cm). Orienting nozzles forward allows further height reductions.
9. Special nozzles are now available that create coarse, low-drift sprays. Pre-orifice, Turbo-TeeJet, or venturi-type nozzles are available from a number of manufacturers, and these reduce drift by 50 to 95 percent. (Refer to the section entitled **Herbicide Efficacy with Low-Drift Nozzles**).
10. Consider equipping your sprayer with protective shrouds. A number of different designs are available that can reduce drift between 35 and 75 percent.
11. Reduce travel speeds. Rapid air movement over nozzle tips increases the risk of fine droplets prone to drift and turbulence from the sprayer itself can increase the uncertainty of spray deposition.

For more on reducing drift, visit: [www.Sprayers101.com](http://www.Sprayers101.com).

## Herbicide Efficacy with Low-drift Nozzles

A number of low-drift nozzles are now available from different suppliers. Well established nozzles, such as the Turbo TeeJet, reduce drift by about 50 percent and provide equivalent efficacy to a standard flat fan nozzle. Newer nozzles ("venturi" types) are best known for their dramatic ability to reduce drift (50 to 95 percent). Research suggests that these nozzles perform well at conventional carrier volumes, travel speeds, and product rates. Some aspects require special attention:

**Pressure:** Some venturi-type nozzles require higher pressures to operate properly. Below 40 psi (275 kPa), patterns for these designs may deteriorate rapidly resulting in poor overlaps and erratic control. Design improvements have resulted in venturi nozzles that require less pressure to operate effectively. When using automatic rate controllers, make sure your pressures match the recommended pressure ranges for good nozzle performance.

**Water Volume:** Droplet size becomes more important at lower water volumes. Little is known about low-drift nozzle performance at or below 5 gallons per acre (23 L per acre). Since low-drift nozzles generate fewer droplets than conventional nozzles, ensure that water volumes are high enough for coverage when using coarse sprays.

**Weed Type:** Difficult-to-wet weeds, such as wild oats, green foxtail, lamb's-quarters, and cleavers, typically require finer sprays for effective coverage. When using venturi nozzles on these weeds, make sure your pressure is high enough to achieve good coverage. Larger weeds and reduced product rates typically make chemical control more difficult, and these conditions may also reveal some performance differences between nozzles.

**Herbicide Type:** Herbicides that belong to herbicide Groups 2, 4, and 9 perform well with venturi nozzles, even at normal pressures (40 psi). Application of herbicides in Groups 1, 6, 8, 10 and 14 may require higher pressures with venturi nozzles to maintain good performance, especially under challenging conditions. Wild oat control may be reduced with the coarsest sprays, even when applied at high pressure.

Check with your chemical representative to see if the manufacturer supports the use of low-drift nozzles with their products.

More information is available in the fact sheet "Pesticide Application and Choosing the Right Nozzles," available from your local extension office or at the Saskatchewan Ministry of Agriculture Website: [Saskatchewan.ca/agriculture](http://Saskatchewan.ca/agriculture).

## Handling a Drift Complaint

When spray drift occurs, it is important to take the right steps to resolve the complaint. If you suspect that your crop or property has been damaged because of spray drift, use the following guidelines for resolving the situation.

1. Contact the suspected applicator as soon as possible. View the damage with the suspected applicator and determine if that person did, in fact, cause the damage.
2. Are you sure that the symptoms or damage you see has been caused by spray drift? Contact your local agriculture office or agronomist to discuss the injury symptoms.
3. If the damage was caused by the applicator, determine the extent of the damage and the level of compensation (if any) with the applicator.
4. If the situation cannot be resolved quickly because of disagreements on the extent of damage, cause of the damage, or level of compensation, contact your local agricultural office to discuss options on how to proceed. Documentation will be required, particularly if insurance companies are involved.
5. The involvement of a private consultant is recommended if documentation is required. Required documentation often includes samples of the damaged plants, photographs, and yield comparisons to determine losses. Your agricultural office can provide you with a list of private consultants in your area.
6. The best approach is to start an open and honest line of communication with the suspected applicator. The majority of drift complaints are resolved quickly and efficiently by communicating with the applicator, without the involvement of outside parties.

## Mixing Pesticides

The ability to control a broad range of weeds or other pests in one pass is the advantage that a mix of two or more products allows. The mixing of pesticides is restricted to those products specifically indicated on each pesticide label, or if the labels of each and every product to be mixed contain the following general mixing statement:

"This product may be tank mixed with (a fertilizer, a supplement, or with) registered pest control products, whose labels also allow tank mixing, provided the entirety of both labels, including Directions For Use, Precautions, Restrictions, Environmental Precautions, and Spray Buffer Zones are followed for each product. In cases where these requirements differ between the tank mix partner labels, the most restrictive label must be followed. Do not tank mix products containing the same active ingredient unless specifically listed on this label.

In some cases, tank mixing pest control products can result in reduced pesticide efficacy or increased host crop injury. The user should contact [manufacturer name] at [insert manufacturer contact information] for information before applying any tank mix that is not specifically recommended on this label."

If tank mixing is not done in the correct order, the result could be a tank-load of material that may not control the target pests, cause injury to the crop, plug nozzles, or leave an undesirable residue in the tank that will require extensive cleaning. Mistakes like these are costly, could put the user at unnecessary risk of exposure to the products, or create an environmental disposal problem.

To avoid mixing that may result in incompatibilities, **always consult the label of the products that are being used** to learn the correct order. **Remember to add all like components at the same stage of mixing.** The list below is a general rule-of-thumb for mixing pesticides:

1. Fill the spray tank with 1/4 to 3/4 the amount of water required for the application and turn on the sprayer agitation. Check the products that are being used for the correct amount to add. Once agitation has begun, maintain until the tank is emptied.
2. Add any water conditioner (fertilizer or pH adjuster) additives to the tank.
3. Add any wettable powders, or water dispersible granules (DF, DG, or WDG). Add dry products slowly to prevent clogged return lines. Allow sprayer to agitate for a few minutes, allowing the product to become completely suspended in the tank, before adding the next component.
4. Shake any containers of liquid pesticide thoroughly before adding to ensure they are well mixed.
5. Add any oil dispersions (OD) or flowable liquid suspensions (F, SC) to the tank. Allow to mix.
6. Add emulsifiable concentrates (EC) or emulsions (ME, SE) to the tank and allow to mix.
7. Add any pesticides that are solutions (SN) (i.e. amines and salts)
8. Add any surfactants or other adjuvants.

Remember to always consult the label for compatible mixes and recommended mixing order.

Many pesticides will break down if left in the tank for an extended period. Try not to mix any more than you can spray at one time.

If you need to stop spraying for a short time, leave the sprayer agitation running to keep products from settling or separating in the tank.

## Container Disposal

Proper disposal of used containers and unused pesticides is important to protect the environment and prevent contamination of soil and water resources. Rinse all containers prior to disposal to reduce environmental contamination caused by open dumping of unwanted containers. Only mix as much pesticide solution as is needed to treat the desired area.

### Triple Rinsing

Triple rinsing renders used pesticide containers (metal, plastic, glass) more than 99.9 percent free of residues, in most cases. Here are the steps that should be followed:

1. Empty contents of the container into the spray tank and drain in a vertical position for 30 seconds.
2. Add a measured amount of rinse water or other diluent until container is about one-fifth full.
3. Rinse the container thoroughly and pour the rinsate into the spray tank.
4. Repeat the procedure twice (it should take only about 5 minutes in total).
5. Puncture or break triple rinsed containers to render them non-reusable. Paper bags should be rinsed once prior to disposal.

### Pressure Rinsing

Pressure rinsers can be used to rinse any size of empty pesticide container that can be lifted into position over the spray tank. A 30 second rinse with a pressure rinser is convenient and just as effective as triple rinsing. Pressure rinsers are constructed to be thrust into the bottom of a metal can or plastic jug. Holes, situated laterally in the rinser tip, direct water from a pressurized source against the inner sides of the container and effectively wash the residual pesticide into the spray tank. Some farmers have found it convenient to attach a rinser to the pump on their large water storage tank to minimize container handling. Pressure rinsers have the added advantage of rendering containers useless by automatically puncturing them.

### Disposal of Containers

Properly rinsed containers, totes and drums can be returned to a local collection site for recycling. See [www.cleanfarms.ca](http://www.cleanfarms.ca) for more information and locations.

## Sprayer Cleaning

When pesticide application is completed each day it is important to empty and clean the sprayer thoroughly to prevent the breakdown of certain pesticides, prevent adhesion of the pesticide to the sprayer, and to maintain the sprayer parts in good condition. Certain pesticides break down very quickly when left in solution, and several pesticide solutions can be corrosive to sprayer parts. Sprayer cleaning is especially important when changing from one crop to another or from one pesticide to another. Each year several reports are logged of herbicide damage caused by carryover of product residue in the tank. To avoid the risk of contamination, sprayers should be cleaned as soon as possible after application is completed.

Do not clean sprayers where rinsate can run off into ditches or other water bodies, near sensitive plants or shelterbelts, or where other people or animals are likely to walk, to avoid unnecessary exposure to people, animals and the environment.

There are three basic types of rinse solution for cleaning sprayer tanks. Their recipes and basic procedures are outlined below:

- **The Ammonia Rinse** – Fill spray tank and add 1 L of household ammonia (3 percent) for every 100 L of clean water needed for the rinse and begin agitation. Allow solution to flush through the booms until the boom is completely filled with ammonia solution and top up the tank with water. Circulate the ammonia solution through the tank and pump system for 15 minutes. Flush hoses and booms with ammonia rinse solution again (minimum 5 minutes) before emptying. Remove nozzles and screens and scrub with 0.1 L household ammonia per 10 L clean water and an old toothbrush. Perform clean water rinse to remove ammonia solution prior to next spray load. Some herbicides recommend leaving the ammonia rinse in the tank over night to improve cleaning potential.
- **The Fresh Water Rinse** – The spray tank cleaning should begin and end with a fresh water rinse to remove the majority of potential contaminants prior to the cleansing process or prior to the next round of spraying. Drain the tank of its previous contents and fill the tank with clean water. Open nozzle valves and pump clean water through the booms and hoses. Top up the tank with more clean water and circulate/agitate for at least 10 minutes and empty the tank of waste water. If this is the first rinse after spraying, a high pressure hose could be used to clean residue from all surfaces in the tank. Do not enter the tank during the cleaning process.
- **The Detergent Rinse** – After rinsing with clean water, fill spray tank and add a heavy-duty detergent at 0.25 L per 100 L of water (some suggest a non-ionic surfactant such as Agral 90 or Agsurf at 0.6 L per 100 L of water). Circulate the mixture for a minimum of 5 minutes and spray out through sprayer nozzles. Nozzles and screens are removed and cleaned individually with the same detergent solution in a small container. Soaking in this solution for several hours also helps to loosen any deposits.

The above solutions are just components of the overall sprayer cleaning process. Typical rinse instructions will repeat a combination of one or two or all of these basic rinses. Below we will give some generic rinse instructions utilizing the basic rinses as components of the larger cleaning procedure. Never enter the tank during the cleaning process as some cleansers may release dangerous gases.

- **Method A** – Drain contents of tank – 1 to 2 x Water Rinse – 2 x Ammonia Rinse – 2 x Water Rinse (one just prior to the next spraying event)
- **Method B** – Drain contents of tank – 2 x Water Rinse – 2 x Detergent Rinse – 2 x Water Rinse
- **Method C** – Drain contents of tank – Several repetitions of the Water Rinse with nozzles and screens removed and checked for debris. Products: *Adrenalin, Altitude, Amitrol 240, Ares.*

The above directions are general processes based on the similarities of tank cleaning recommendations between products in each of the herbicide groupings. Always follow the specific instructions on the product label.

Several products in the guide do not have label instructions regarding tank cleaning. In the case of products that have no cleaning recommendations on the label, there are some basic principals that can be applied. Products that are water based formulations can usually be cleaned from spray tanks using **Method C** above. Products that are formulated as an EC, SC or F (flowable) or use a petroleum based adjuvant should at least use **Method B**. The detergent breaks down the oil that may be sticking to the side of the tank. Products in Group 2 (most will already have a recommendation), with the exception of the 'IMI' products (see Table 8 on page 52), will require the use of **Method A**. The ammonia in **Method A** either increases the solubility of the product allowing it to be easily removed from the tank surfaces or speeds the breakdown of these products in water. If the product that is to be cleaned out of the tank is a combination of these elements, use a combination of Methods to clean the tank. In these cases, use a good commercial tank-cleaning product from a recognized source, with both ammonia and detergent as components.

Group 2 compounds are highly active on sensitive plants so even a small amount remaining in the sprayer can present a risk of injury. They can also occasionally be trapped on the tank walls and plumbing by petroleum based formulations or adjuvants when tank mixed with other products, resulting in tank residues that may be tougher to remove. A way to reduce the chance of this occurring is to add detergent at 0.25 L per 100 L to the Ammonia Rinse portion to assist with the breakdown of the petroleum coating so that the ammonia may rid the tank of Group 2 product.

It is very important to clean sprayers immediately after every use. With a more diverse rotation, the likelihood of damage from lack of care increases dramatically.

## How to Identify Crop and Weed Leaf Stages

Recognition of plant growth stages is essential for effective weed and disease control. Many herbicides and fungicides are safe on a crop only when applied at a specific growth stage. Similarly, weeds are controlled only when they are at certain growth stages.

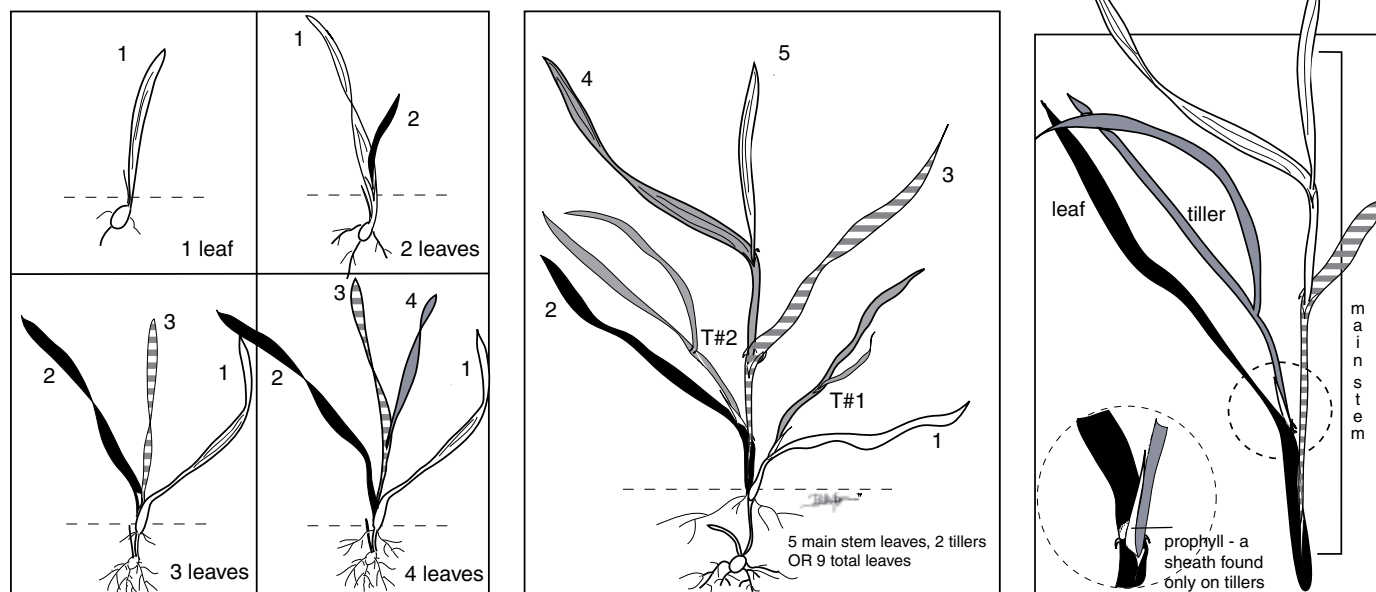
For most post-emergent products, growth stages are described by the number of leaves. The following is a description of how to count leaves for staging.

### Cereals and Annual Grass Weeds

Manufacturers generally use two different systems of staging for grasses. The minimum stages of application are similar, while the later stages may differ.

Some manufacturers use "Total Leaf Count" stages based on the number of leaves on the entire plant, including tillers or secondary shoots. Most recommendations are based on the number of main stem leaves and tillers. Tillers or stools are the secondary shoots or stems of a grass plant. Similar to the branches of a broadleaf plant, tillers will emerge from the axils between the leaf and main shoot. Tillers usually begin to appear at the 3 or 4 leaf stage. When staging a plant in this manner, be sure to identify the tillers first, then count only leaves that originate from the main shoot.

Figure 2. Leaf Stages of Cereals and Annual Grass Weeds



## Broadleaf Weeds

*Cotyledons* – These are the seed leaves that usually emerge above ground. On some plants, such as faba beans, lentils and peas, they stay below the soil surface. Cotyledons are not true leaves and are not counted when determining leaf number. They are a different shape than the true leaves and may dry up and disappear at an early stage.

*Alternate leaves* – Some plants have one leaf at each node on the stem. The next leaf emerges at the next higher node and extends away from the stem in the opposite direction. These plants (lamb's quarters and wild mustard are good examples) are said to have alternate leaves.

To determine the leaf stage, simply count the number of leaves present (Figure 3).

*Opposite leaves* – Plants with two leaves at each node, one on each side of the stem, are said to have opposite leaves. The next pair of leaves on the next node are rotated about 45° so that they are not directly over the previous pair. Plants with opposite leaves have even-leaf numbers only. When counting, the leaf number progresses from cotyledons to 2 leaf, 4 leaf, etc. These plants generally appear shorter than plants with alternate leaves at a similar leaf stage. **Be sure to count each pair as two leaves.** Hemp nettle is a weed that has opposite leaves (Figure 3).

*Whorled leaves* – More complex plants like cleavers may have whorled leaves. These plants have three or more leaves at each node on the stem. The leaf number in each whorl may vary, so be sure to count each individual leaf unless the Guide or label recommendation refers to the number of leaf whorls (Figure 3).

Figure 3. Leaf Stages of Broadleaf Weeds and Crops

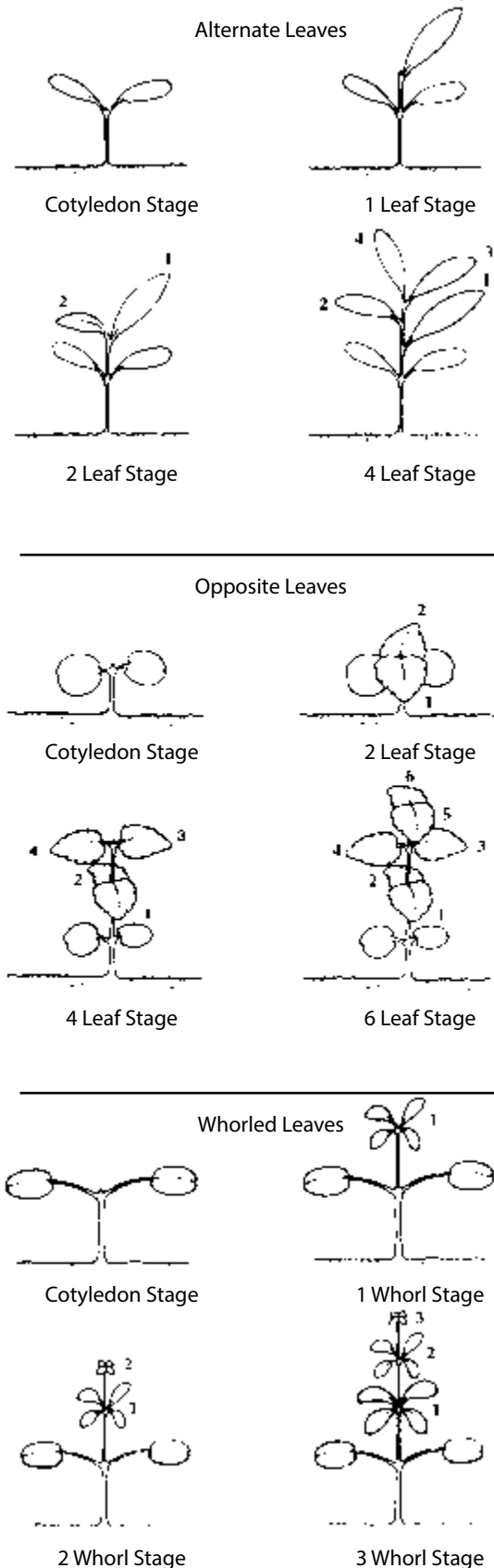
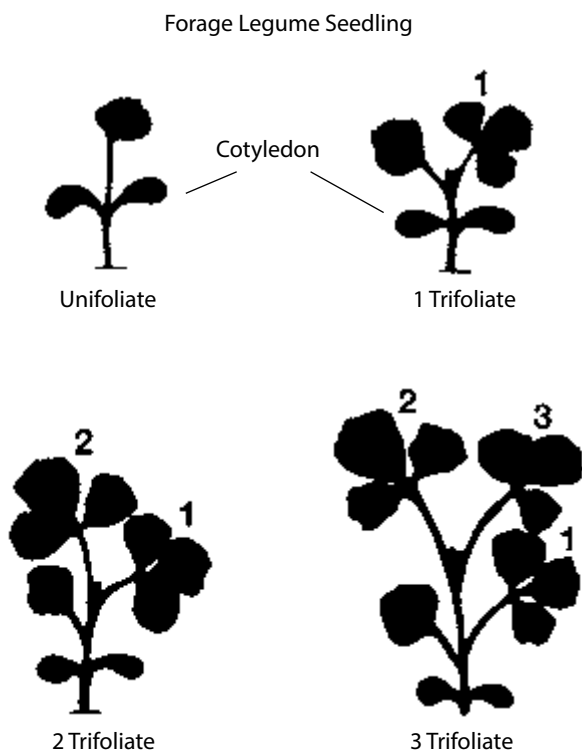
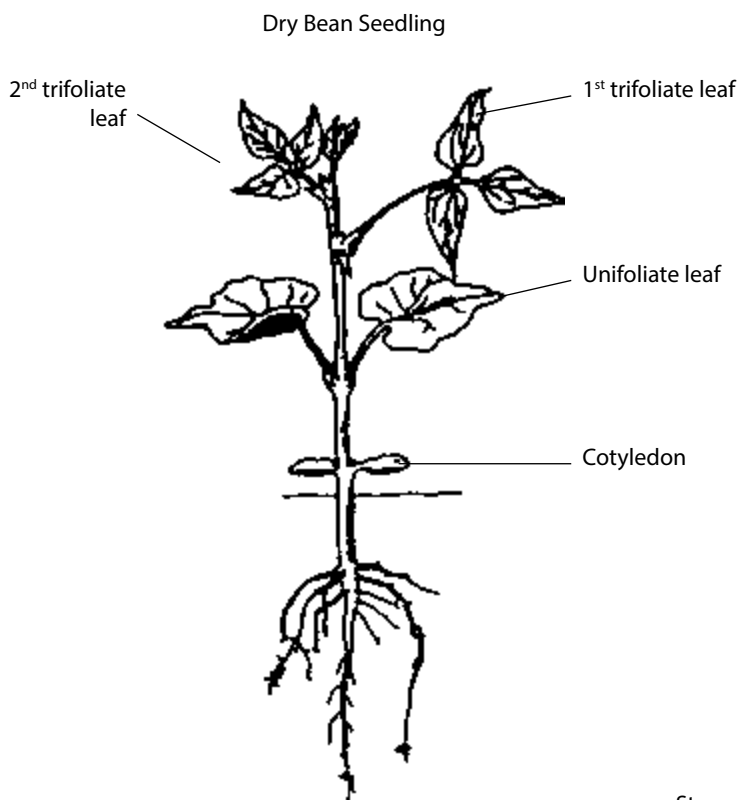
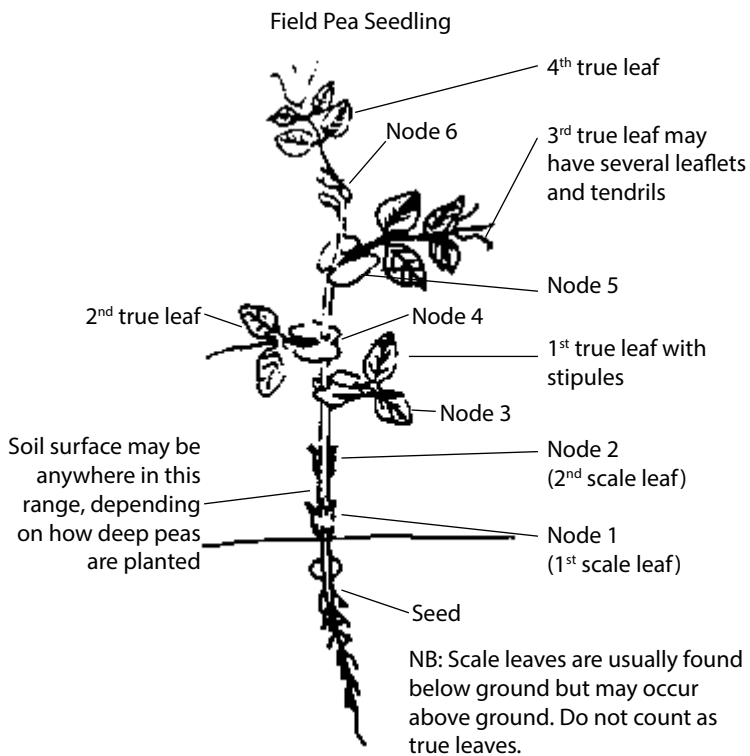
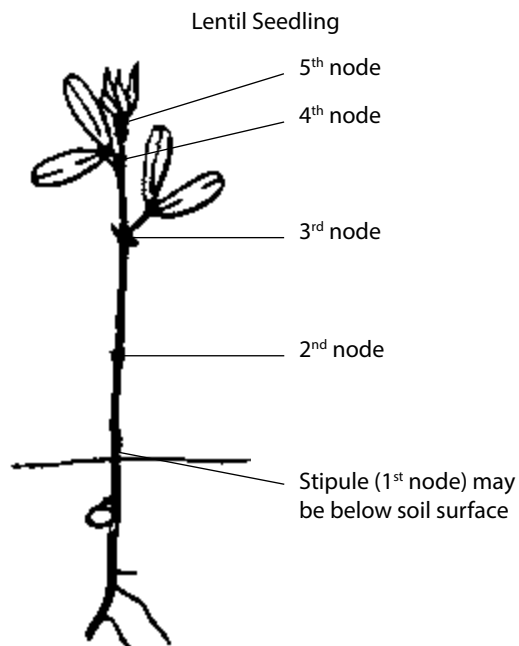




Figure 4. Leaf Stages of Certain Special Crops and Forages



Stages of alfalfa, red clover and alsike clover leaf development



# Trade Names, Active Ingredients and Formulations

Legend: (F) = formulated component; (B) = blended granules; (DC) = divided container

- WP wettable powder EC emulsifiable concentrate SP water soluble powder SL soluble concentrate A amine
- WG water dispersible granule G granule EW emulsion, oil in water OD oil dispersion E ester
- TB Tablet SC suspension concentrate DS powder/dust for dry seed treatment FS flowable concentrate for seed treatment LS solution for seed treatment
- SG water soluble granule AS aqueous suspension SE suspension emulsion WGR wettable granule

## Herbicides

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
2,4-D Amine - 400 g/L SL (F)	aminopyralid - 50 g/L SL (F)			Restore II	Corteva Agriscience
2,4-D Amine - 600 g/L SL				USHA6	Sharda CropChem
2,4-D Amine - 600, 700 g/L SL				2,4-D Amine or Ester	Various
2,4-D Choline - 194 g/L SL (F)	glyphosate DMA - 204 g/L SL (F)			Enlist Duo	Corteva Agriscience
2,4-D Choline - 360 g/L SL (F)	picloram - 97.5 g/L SL (F)			Grazon XC	Corteva Agriscience
2,4-D Ester - 225 g/L EC (F)	bromoxynil - 225 g/L EC (F)			Leader	Interprovincial
2,4-D Ester - 225 g/L EC (F)	bromoxynil - 225 g/L EC (F)			Thrasher II	Cooperative (IPCO)
2,4-D Ester - 240 g/L EC (F)	bromoxynil - 90 g/L EC (F)	fluroxypyr - 80 g/L EC (F)		Enforcer D	ADAMA
2,4-D Ester - 280 g/L EC (F)	bromoxynil - 280 g/L EC (F)			Swipe	Nufarm Agriculture
2,4-D Ester - 280 g/L EC (F)	bromoxynil - 280 g/L EC (F)			Thumper	Sharda CropChem
2,4-D Ester - 284 g/L EC (F)	dichlorprop - 284 g/L EC (F)	pyraflufen - 7.3 g/L EC (F)		Blackhawk EVO	Bayer
2,4-D Ester - 360 g/L EC (F)	fluroxypyr - 90 g/L EC (F)			OctTrain XL	Nufarm Agriculture
2,4-D Ester - 360 g/L EC (F)	fluroxypyr - 90 g/L EC (F)			Osim Plus	Corteva Agriscience
2,4-D Ester - 360 g/L EC (F)	fluroxypyr - 90 g/L EC (F)			Rush 24 All In	Sharda CropChem
2,4-D Ester - 360 g/L EC (F)	fluroxypyr - 90 g/L EC (F)			TraxoTwo	ADAMA
2,4-D Ester - 360 g/L EC (F2)	fluroxypyr - 90 g/L EC (F2)	clodinafop - 25 g/L EC (F1)	pinoxaden - 25 g/L EC (F1)	Dichlorprop-DX	Syngenta
2,4-D Ester - 400 g/L EC (F)	dichlorprop-P - 210 g/L EC (F)			Estaprop XT	IPCO
2,4-D Ester - 400 g/L EC (F)	dichlorprop-P - 210 g/L EC (F)			BlackHawk	Nufarm Agriculture
2,4-D Ester - 473 g/L (F)	pyraflufen - 6.1 g/L (F)	fluroxypyr - 180 g/L EC		Foxy Pro RX	Nufarm Agriculture
2,4-D Ester - 564 g/L EC	thifensulfuron: tribenuron - 50%:25% WG				Agriacty
2,4-D Ester - 564 g/L EC	thifensulfuron:tribenuron - 33.3%:16.7% SG	fluroxypyr - 333 g/L EC		Retain SG	Loveland Products
2,4-D Ester - 660 g/L EC	aminopyralid - 52.5% WG (F)	metsulfuron - 9.45% WG (F)		Reclaim II	Corteva Agriscience
2,4-D Ester - 660 g/L EC	carfentrazone - 240 g/L EC			CO-OP/IPCO Convex	IPCO
2,4-D Ester - 660 g/L EC	carfentrazone - 240 g/L EC			Revenge Pro	Agriacty
2,4-D Ester - 660 g/L EC	fluroxypyr - 180 g/L EC			Flurox-24	Nufarm Agriculture
2,4-D Ester - 660 g/L EC	fluroxypyr - 180 g/L EC			Foxy Pro	Agriacty
2,4-D Ester - 660 g/L EC	fluroxypyr - 180 g/L EC			Foxy Extreme	Agriacty
2,4-D Ester - 660 g/L EC	fluroxypyr - 180 g/L EC			Rush 24	ADAMA
2,4-D Ester - 660 g/L EC	fluroxypyr - 333 g/L EC			Attain XC	Corteva Agriscience
2,4-D Ester - 660 g/L EC	pyroxsulam - 15% WG (F)	halauxifen - 5% WG (F)		Rexade	Corteva Agriscience
2,4-D Ester - 660 g/L EC	thifensulfuron: tribenuron - 50%:25% WG			Lima 660EC	Sharda CropChem
2,4-D Ester - 660 g/L EC	tribenuron - 8.25% WG (F)	dicamba - 480 g/L SL		Salvo	UAP
2,4-D Ester - 660g/L EC		dicamba - 480 g/L SL		Viking 2,4-D Ester	Viking
2,4-D Ester - 660g/L EC		dicamba - 58.45% WG (F)		Ammo DR	Agriacty
2,4-DB Ester - 625 g/L EC				Triton K	FMC
2,4-DB Ester - 625 g/L EC				Caliber	Loveland Products
2,4-DB Ester - 625 g/L EC				Cobutox 625	IPCO
2,4-DB Ester - 625 g/L EC				Embutox 625	Nufarm Agriculture





(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
bromoxynil - 235g/L EC	carfentrazone - 240 g/L EC			Revenge B	Agricity
bromoxynil - 235g/L EC				Koril 235	Nufarm Agriculture
bromoxynil - 240 g/L EC				Bromotril	ADAMA
bromoxynil - 240 g/L EC				Brox 240	Albaugh
bromoxynil - 240 g/L EC				Brotex	IPCO
bromoxynil - 240 g/L EC				Starbuck	Winfield United
bromoxynil - 280 g/L EC				Pardner	Bayer
bromoxynil - 280 g/L EC (F)	2,4-D Ester - 280 g/L EC (F)			Swipe	Sharda Cropchem
bromoxynil - 280 g/L EC (F)	2,4-D Ester - 280 g/L EC (F)			Thumper	Bayer
bromoxynil - 280 g/L EC (F)	MCPA Ester - 280 g/L EC (F)	fluroxypyr - 180 g/L EC		Foxy Canuck	Agricity
bromoxynil - 280 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Brilliant	Sharda Cropchem
bromoxynil - 280 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Buctril M	Bayer
bromoxynil - 280 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Canuck	Agricity
bromoxynil - 467g/L EC (F)	pyraflufen - 15 EC (F)			Conquer II	Nufarm Agriculture
bromoxynil - 480 g/L SL				Brotex 480, Brotex 4AT	IPCO
bromoxynil - 87.5 g/L EC (F)	fenoxaprop-p - 46 g/L EC (F)	pyrasulfotole - 15.5 g/L EC (F)		Tundra	Bayer
bromoxynil - 90 g/L EC (F)	fluroxypyr - 80 g/L EC (F)	2,4-D Ester - 240 g/L EC (F)		Enforcer D	Nufarm Agriculture
bromoxynil - 186.6 g/L EC (F)	tolpyralate - 18.7 g/L EC (F)			OnDeck	Corteva Agriscience
carfentrazone - 175 g/L EC (F)	flucarbazone - 141 g/L SC (F)	florasulam - 50 g/L SC (F)		Inferno Trio	UPL AgroSolutions
carfentrazone - 240 g/L EC	2,4-D Ester - 660 g/L EC			CO-OP/IPCO Convex	IPCO
carfentrazone - 240 g/L EC	2,4-D Ester - 660 g/L EC			Revenge Pro	Agricity
carfentrazone - 240 g/L EC	bromoxynil - 235g/L EC	clomazone - 360 g/L ME		IPCO Trigon	IPCO
carfentrazone - 240 g/L EC	bromoxynil - 235g/L EC			Emphasis	ADAMA
carfentrazone - 240 g/L EC	bromoxynil - 235g/L EC			CO-OP/IPCO Octagon	IPCO
carfentrazone - 240 g/L EC	bromoxynil - 235g/L EC			Revenge B	Agricity
carfentrazone - 240 g/L EC	clomazone - 360 g/L ME			Command Charge	FMC
carfentrazone - 240 g/L EC	tribenuron - 6.52% WG (F)	dicamba - 60.9% WG (F)		Intruix	FMC
carfentrazone - 240 g/L EC	tribenuron - 75% WG			Revenge E	Agricity
carfentrazone - 240 g/L EC				Foremost	WinField United
carfentrazone - 240 g/L EC				InStep	Albaugh
carfentrazone - 240 g/L EC				IPCO C-Zone	IPCO
carfentrazone - 240 g/L EC				Revenge	Agricity
carfentrazone - 240 g/L EC	halauxifen - 15 g/L EC (F)			Viking Carfentrazone	Viking
carfentrazone - 27.97 g/L EC (F)	sulfentrazone - 380 g/L SE (F)			Prospect	Corteva Agriscience
carfentrazone - 42 g/L SE (F)	pyroxasulfone - 447 g/L SE (F)			Authority Strike	FMC
carfentrazone - 53 g/L SE (F)	dicamba - 43.75% WGR (B)	tribenuron - 4.69% WGR (B)		Focus	FMC
carfentrazone - 11.25% WGR (B)				Intruix II	FMC
chlormequat chloride - 620 g/L SL				Manipulator	Taminco/Belchim
choirsulfuron - 75% WG				Telar XP	Crop Protection
clethodim - 120 g/L EC				Arrow-All-In	Envu Canada
clethodim - 120 g/L EC				CO-OP Patron Complete	ADAMA
clethodim 120 g/L EC				IPCO GraminX Complete	IPCO
clethodim 120 g/L EC				Shadow XL	IPCO
clethodim - 240 g/L EC	imazamox - 70% WG	imazamox - 35% WG (F)		Samauri Master	Loveland Products
clethodim - 240 g/L EC	imazethapyr - 35% WG (F)			Ninja Master	Agricity
clethodim - 240 g/L EC				Advantage Clethodim 240	Agricity
clethodim - 240 g/L EC (F)				Select Plus	Advantage
clethodim - 240 g/L EC (F)	quizalofop - 120 g/L EC (F)			Crop Protection	Crop Protection
clethodim - 240 g/L EC				UPL AgroSolutions	UPL AgroSolutions
clethodim - 240 g/L EC				Canada	Canada
clethodim - 240 g/L EC				Antler 240EC	WinField United
clethodim - 240 g/L EC				Arrow	ADAMA
clethodim - 240 g/L EC				Centurion	Bayer
clethodim - 240 g/L EC				Clethodim 240	Albaugh



(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
clethodim - 240 g/L EC	fluroxypyr - 217 g/L EC (F)	thifensulfuron:tribenuron - 50%:25% SG		CO-OP Patron 240EC	IPCO
clethodim - 240 g/L EC				Deputy	Albaugh
clethodim - 240 g/L EC				Independence	Agracety
clethodim - 240 g/L EC				IPCO GraminX	IPCO
clethodim - 240 g/L EC				Select	UPL AgroSolutions
clethodim - 240 g/L EC				Shadow RTM	Loveland Products
clethodim - 240 g/L EC				Statue	Nufarm Agriculture
clethodim - 240 g/L EC				Viking Clethodim	Viking
clethodim - 240 g/L EC				Antler Unpacked	WinField United
clethodim - 360 g/L EC				Signal FSU	Nufarm Agriculture
clodinafop - 112 g/L EC (F)					
clodinafop - 240 g/L EC				Aurora	Agracety
clodinafop - 240 g/L EC				Cadillac Unpacked	WinField United
clodinafop - 240 g/L EC				Foax	FBN
clodinafop - 240 g/L EC				Ladder	ADAMA
clodinafop - 240 g/L EC				Signal	Nufarm Agriculture
clodinafop - 240 g/L EC				Slam'R	Albaugh
clodinafop - 240 g/L EC				Viking Clodinafop	Viking
clodinafop - 240 g/L EC				Winner	Albaugh
clodinafop - 25 g/L EC (F)				Traxos	Syngenta
clodinafop - 25 g/L EC (F1)	pinoxaden - 25 g/L EC (F)			TraxosTwo	Syngenta
clodinafop - 60 g/L EC	pinoxaden - 25 g/L EC (F1)	2,4-D Ester - 360 g/L EC (F2)	fluroxypyr - 90 g/L EC (F2)	FootHills NG	Loveland Products
clodinafop - 60 g/L EC				Horizon NG	Syngenta
clodinafop - 80 g/L EC				Cadillac One	WinField United
clodinafop - 80 g/L EC				Ladder All In	ADAMA
clomazone - 360 g/L ME	carfentrazone - 240 g/L EC			IPCO Trigon	IPCO
clomazone - 360 g/L ME	carfentrazone - 240 g/L EC			Command Charge	FMC
clomazone - 360 g/L ME				Command 360 ME	FMC
clomazone - 360 g/L ME				Czar	Sharda CropChem
clomazone - 360 g/L ME				IPCO Clomazone	IPCO
clopyralid - 360 g/L EC	fluroxypyr - 180 g/L EC	MCPA Ester - 600 g/L EC		Esteem	ADAMA
clopyralid - 360 g/L SL	glyphosate - 480 g/L SL			Eclipse XC	Corteva Agriscience
clopyralid - 360 g/L SL	halauxifen - 16.2 g/L EC (F)	florasulam - 20% WG (F)		Foxy CM	Corteva Agriscience
clopyralid - 360 g/L SL	thifensulfuron: tribenuron - 50%:25% WG	fluroxypyr - 180 g/L EC		Foxy CRX	Agracety
clopyralid - 360 g/L SL					
clopyralid - 360 g/L SL				Advantage Clopyralid 360	Advantage
clopyralid - 360 g/L SL				Crop Protection	Crop Protection
clopyralid - 360 g/L SL				Agracety	Agracety
clopyralid - 360 g/L SL				Sharda CropChem	Sharda CropChem
clopyralid - 360 g/L SL				Spur	Albaugh
clopyralid - 42.7 g/L EC (F)				Viking Clopyralid	Viking
clopyralid - 50 g/L EC (F)	fluroxypyr - 61.6 g/L EC (F)			Prestige XL	Corteva Agriscience
clopyralid - 50 g/L EC (F)	fluroxypyr - 333 g/L EC	MCPA Ester - 240 g/L EC (F)		Prestige XC	Corteva Agriscience
clopyralid - 50 g/L EC (F)	fluroxypyr - 180 g/L EC (F)	MCPA Ester - 280 g/L EC (F)		Foxy CM	Agracety
clopyralid - 50 g/L EC (F)	MCPA Ester - 280 g/L EC (F)	MCPA Ester - 280 g/L EC		Certain	Sharda CropChem
clopyralid - 50 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Clobber M	Agracety
clopyralid - 50 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Curtail M	Nufarm Agriculture
clopyralid - 50 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Spur-M	Albaugh
clopyralid - 60 g/L EC (F)	MCPA Ester - 280 g/L EC (F)			Viking Drammen	Viking
clopyralid - 60 g/L EC (F)	fluroxypyr - 77 g/L EC (F)	MCPA Ester - 210 g/L EC (F)		CO-OP/IPCO State	IPCO
clopyralid - 60 g/L EC (F)	fluroxypyr - 77 g/L EC (F)	MCPA Ester - 210 g/L EC (F)		Truslate Pro	Nufarm Agriculture
clopyralid - 600 g/L SL				Lontrel XC	Corteva Agriscience
clopyralid - 600 g/L SL	halauxifen - 16.2 g/L EC (F)	florasulam - 20% WG (F)		Cirpreme XC	Corteva Agriscience
clopyralid - 80 g/L EC (F)	fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)		Akito	UPL AgroSolutions

(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
dicamba - 90 g/L EC (F)	fluroxypyr - 90 g/L EC (F)	fluroxypyr - 122.2 g/L ME (F)	Inertia		Sharda CropChem
dicamba - 90 g/L SL (F)	fluroxypyr - 90 g/L EC (F)		Momentum		Loveland Products
dicamba - 97.8 g/L ME (F)	halauxfifen - 4.7 g/L ME (F)		Prominex		Corteva Agriscience
dicamba - 120 g/L SL (F)	glyphosate - 240 g/L SL (F)		Roundup Xtend		Bayer
dicamba - 159 g/L SL (F)	glyphosate - 317 g/L SL (F)		Roundup Xtend 2		Bayer
dicamba - 350 g/L SL			FeXapan		Corteva Agriscience
dicamba - 350 g/L SL			Xtendimax		Bayer
dicamba - 474 g/L SL			Xtendimax 2		Bayer
dicamba - 480 g/L SL	florasulam - 25% WG	2,4-D Ester - 660g/LEC	Korrex II		Corteva Agriscience
dicamba - 480 g/L SL	thiencsulfuron: tribenuron - 50%:25% WG		Ammo DR		Agracity
dicamba - 480 g/L SL			Ammo		Agracity
dicamba - 480 g/L SL			Banvel VM		BASF
dicamba - 480 g/L SL			Oracle		Sharda (UAP)
dicamba - 480 g/L SL			Viking Dicamba		Viking
dicamba - 43.75% WGR (B)	tribenuron - 50% WG (F)	tribenuron - 4.69% WGR (B)	Express FX		FMC
dicamba - 50% WG (F)	carfentrazone - 11.25% WGR (B)		Intruvix II		FMC
dicamba - 50% WG (F)	diflufenzopyr - 20% WG (F)		Distinct		BASF
dicamba - 58.45% WG (F)	diflufenzopyr - 20% WG (F)		Overdrive		BASF
dicamba - 60.9% WG (F)	tribenuron - 8.25% WG (F)	2,4-D Ester - 660g/L EC	Triton K		FMC
dicamba - 60.9% WG (F)	tribenuron - 6.52% WG (F)	carfentrazone - 240 g/L EC	Intruvix		FMC
dicamba - 600 g/L SL			Engenia		BASF
dicamba - 62.5 g/L SL (F)	mecoprop-P - 62.5 g/L SL (F)	MCPA Amine - 275 g/L SL (F)	Sword		Loveland Products
dicamba - 62.5 g/L SL (F)	mecoprop-P - 62.5 g/L SL (F)	MCPA Amine - 275 g/L SL (F)	Tracker XP		IPCO
dicamba - 87 g/L EC (F)	fluroxypyr - 113 g/L EC (F)		DiFlux		Sharda CropChem
dicamba - 87 g/L EC (F)	fluroxypyr - 113 g/L EC (F)		Pulsar		Syngenta
dichlobenil - 4% G	bromoxynil - 174 g/LEC (F)		Casoron		UPL AgroSolutions
dichlorprop-P - 210 g/L EC (F)	2,4-D Ester - 400 g/L EC (F)		Dichlorprop-DX		IPCO
dichlorprop-P - 210 g/L EC (F)	2,4-D Ester - 400 g/L EC (F)		Estaprop XT		Nufarm Agriculture
dichlorprop-P - 284 g/L EC (F)	2,4-D Ester - 284 g/L EC (F)	pyraflufen - 7.3 g/L EC (F)	Blackhawk EVO		Nufarm Agriculture
dichlorprop-P - 310 g/L SL (F)	MCPA Amine - 160 g/L SL (F)	mecoprop-P - 130 g/L SL (F)	Optica Trio		UAP
dichlorprop - 435 g/LEC (F)	bromoxynil - 174 g/LEC (F)		Oxbow		Nufarm Agriculture
diflufenzopyr - 20% WG (F)	dicamba - 50% WG (F)		Distinct		BASF
diflufenzopyr - 20% WG (F)	dicamba - 50% WG (F)		Overdrive		BASF
dimethanamid-P - 720g/LEC			Frontier Max		BASF
diquat - 240 g/L SL			Advantage Diquat 240		Advantage
diquat - 240 g/L SL			Crop Protection		Crop Protection
diquat - 240 g/L SL			Armory		ADAMA
diquat - 240 g/L SL			Clone		Agracity
diquat - 240 g/L SL			CO-OP Bolster		IPCO
diquat - 240 g/L SL			Craven		WinField United
diquat - 240 g/L SL			Desica		Syngenta
diquat - 240 g/L SL			Desicash Desiccant		Sharda CropChem
diquat - 240 g/L SL			DrifFast		Nufarm Agriculture
diquat - 240 g/L SL			Regione Desiccant		Syngenta
diquat - 240 g/L SL			Regione Ion		Syngenta
diquat - 240 g/L SL			Reward (Aquatic only)		Syngenta
diquat - 240 g/L SL			Stage		Loveland Products
diquat - 240 g/L SL			Viking Diquat		Viking
EPTC - 800 g/LEC			Eptam Liquid EC		Gowan Company
ethafluralin - 10% G			Edge MicroActiv		Gowan Company
ethafluralin - 10% G			Advantage Ethafluralin		Advantage Crop
ethametsulfuron- 75% WG			10%		Protection
			Muster		FMC



(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
fenoxaprop-p - 120 g/LEC				HellCat	Agricity
fenoxaprop-p - 120 g/LEC				Vigil WB	IPCO
fenoxaprop-p - 120 g/LEC				Viking Fenoxaprop	Viking
fenoxaprop-p - 46 g/L EC (F)				Tundra	Bayer
fenoxaprop-p - 50 g/L EC (F)				Cirray	Bayer
fenoxaprop-p - 90 g/L EC				Puma Advance	Bayer
florasulam - 2.5 g/L SC (F)	bromoxynil - 87.5 g/L EC (F)	pyrasulfotole - 15.5 g/L EC (F)		Akito	UPL AgroSolutions
florasulam - 2.5 g/L SC (F)	pinoxaden - 50 g/L EC (F)			Outshine	ADAMA
florasulam - 2.5 g/L SC (F)	clopyralid - 80 g/L EC (F)	fluroxypyr - 100 g/L SC (F)		Stellar	Corteva Agriscience
florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)	MCPA Ester - 600 g ae/L EC		Battlestar	Agricity
florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)	MCPA Ester - 600 g/L EC		Alloy	Sharda CropChem
florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)			Steel	Sharda CropChem
florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)			Stellar Unpacked	WinField United
florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)			Viking Bodo	Viking
florasulam - 2.5 g/L SC (F)	MCPA Ester - 350 g/L EC (F)	fluroxypyr - 100 g/L SC (F)		Stellar XL	Corteva Agriscience
florasulam - 20% WG (F)	clopyralid - 360 g/L SL	halauxifen - 16.2 g/L EC (F)		Cirpreme	Corteva Agriscience
florasulam - 20% WG (F)	clopyralid - 600 g/L SL	halauxifen - 16.2 g/L EC (F)		Cirpreme XC	Corteva Agriscience
florasulam - 20% WG (F)	halauxifen - 20% WG (F)	MCPA Ester - 600 g/L EC		Exhilarate	Corteva Agriscience
florasulam - 20% WG (F)	halauxifen - 20% WG (F)			Paradigm PRE	Corteva Agriscience
florasulam - 20% WG (F)	MCPA Ester - 600 g/L EC	halauxifen - 20% WG (F)		CO-OP/IPCO Exhilarate	IPCO
florasulam - 25% WG	dicamba - 480 g/L SL			Korrex II	Corteva Agriscience
florasulam - 25% WG				PrePass Flex	Corteva Agriscience
florasulam - 25% WG				Start 25 WDG	Sharda CropChem
florasulam - 5 g/L SC (F)		pinoxaden - 50g/L EC		Avenza	Corteva Agriscience
florasulam - 50 g/L SC	fluroxypyr - 100 g/L SC (F)			Hot Shot	ADAMA
florasulam - 50 g/L SC	bromoxynil - 240 g/L EC			Himalaya Pass	Agricity
florasulam - 50 g/L SC	flucarbazone - 66% WDG			Deathstar	Agricity
florasulam - 50 g/L SC	fluroxypyr - 180 g/L EC			PrePass XC	Corteva Agriscience
florasulam - 50 g/L SC	glyphosate - 480 g/L SL	pyraflufen - 13.5 g/L (F)		Thunderhawk	Nufarm Agriculture
florasulam - 50 g/L SC	MCPA Ester - 420 g/L EC (F)			Topline	ADAMA
florasulam - 50 g/L SC	MCPA Ester - 600 g/L EC			Advantage Florasulam	Advantage Crop
florasulam - 50 g/L SC				50 SC	Protection
florasulam - 50 g/L SC				Battlefront	Agricity
florasulam - 50 g/L SC				Bombard 50 SC	Loveland Products
florasulam - 50 g/L SC					Canada
florasulam - 50 g/L SC				Clorvante	Albaugh
florasulam - 50 g/L SC				Blitz	Loveland Products
florasulam - 50 g/L SC				Flora	Sharda CropChem
florasulam - 50 g/L SC				Priority	ADAMA
florasulam - 50 g/L SC				Viking Florasulam	Viking
florasulam - 50 g/L SC (F)	carfentrazone - 175 g/L EC (F)	flucarbazone - 141 g/L SC (F)		Inferno Trio	UPL AgroSolutions
florasulam - 7.7 g/L EC (F)	pinoxaden - 92.7 g/L EC (F)			Broadband	Syngenta
florpyrauxifen - 6.36 g/L SL (F)	aminopyralid - 80 g/L SL (F)			Restore NXT	Corteva Agriscience
flucarbazone - 141 g/L SC (F)	florasulam - 50 g/L SC (F)			Inferno Trio	UPL AgroSolutions
flucarbazone - 200 g/L SC				Everest 3.0 AG	UPL AgroSolutions
flucarbazone - 200 g/L SC				Sierra 3.0 AG	Syngenta
flucarbazone - 66 % WDG	tribenuron - 25% WG (F)			Inferno Duo	UPL AgroSolutions
flucarbazone - 66 % WDG				Himalaya	Agricity
flucarbazone - 66 % WDG	florasulam - 50 g/L SC			Viking Flucarbazone	Viking
flucarbazone - 66 % WDG	tribenuron - 75% WG			Himalaya Pass	Agricity
flucarbazone - 66 % WDG	tribenuron - 75% WG			Himalaya Extra	Agricity
flucarbazone - 66 % WDG	fluroxypyr - 74.1 g/L SC (F)	MCPA ester - 197 g/L SC (F)		Viking Visby	Viking
flucarbazone - 16.7 g/L SC (F)	pyroxasulfone - 203 g/L SC (F)			Batalium	UPL AgroSolutions
flumioxazin - 160 g/L SC (F)				Fierce EZ	Valent

(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
flumioxazin - 160 g/L SC (F)	pyroxasulfone - 203 g/L SC (F)		Torpedo EZ		Valent
flumioxazin - 33.5% WG (F)	pyroxasulfone - 44.5% WG (F)		Fierce		Valent
flumioxazin - 33.5% WG (F)	pyroxasulfone - 44.5% WG (F)		Torpedo		Valent
flumioxazin - 479 g/L SC			Chateau EZ		Valent
flumioxazin - 479 g/L SC			Valtera EZ		Valent
flumioxazin - 51% WG			Chateau		Valent
flumioxazin - 51% WG			Valtera		Valent
fluroxypyr - 72 g/L EC (F)	pyrasulfotole - 31.1 g/L EC (F)	bromoxynil 174.3 g/L EC (F)	Infinity FX		Bayer
flumioxazin - 77.6 g/L SC (F)	metribuzin - 347 g/L SC (F)		IPCO Bifecta EZ		IPCO
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)		Battlestar		Agracity
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)		Steel		Sharda CropChem
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)		Viking Bodo		Viking
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)	clopyralid - 80 g/L EC (F)	Akito		UPL AgroSolutions
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)	pinoxaden - 50g/L EC	Avenza		Corteva Agriscience
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)	MCPA Ester - 600 g ae/L EC	Outshine		ADAMA
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)	MCPA Ester - 600 g/L EC	Stellar		Corteva Agriscience
fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)	MCPA Ester - 350 g/L EC (F)	Stellar XL		Corteva Agriscience
fluroxypyr - 113 g/L EC (F)	dicamba - 87 g/L EC (F)		DiFlux		Sharda CropChem
fluroxypyr - 113 g/L EC (F)	dicamba - 87 g/L EC (F)		Pulsar		Syngenta
fluroxypyr - 113.5 g/L SC (F)	pyroxulam - 12.8 g/L SC (F)		Erebus Xtreme		Syngenta
fluroxypyr - 118 g/L EC (F)	thiocarbazono-methyl - 5 g/L EC (F)		Varro FX		Bayer
fluroxypyr - 122.2 g/L ME (F)	clopyralid - 97.8 g/L ME (F)				
fluroxypyr - 150 g/L SC (F)	thifensulfuron - 30 g/L SC (F)	halauxifen - 4.7 g/L ME (F)	Prominex		Corteva Agriscience
fluroxypyr - 150 g/L SC (F)	thifensulfuron - 30 g/L SC (F)	metsulfuron - 3 g/L SC (F)	Travallas		FMC
fluroxypyr - 180 g/L EC	2,4-D Ester - 564 g/L EC	thifensulfuron: tribenuron - 50%:25% WG	Sentrallas		FMC
fluroxypyr - 180 g/L EC		MCPA Ester - 280 g/L EC (F)	Foxy Pro RX		Agracity
fluroxypyr - 180 g/L EC		MCPA Ester - 600 g/L EC			
fluroxypyr - 180 g/L EC	clopyralid - 360 g/L SL	thifensulfuron: tribenuron - 50%:25% WG	Foxy Canuck		Agracity
fluroxypyr - 180 g/L EC	clopyralid - 360 g/L EC (F)	MCPA Ester - 280 g/L EC (F)	Esteem		ADAMA
fluroxypyr - 180 g/L EC	florasulam - 50 g/L EC (F)	MCPA Ester - 280 g/L EC (F)	Foxy CRX		Agracity
fluroxypyr - 180 g/L EC	MCPA Ester - 225 g/L EC (F)	bromoxynil - 225g/L EC (F)			
fluroxypyr - 180 g/L EC	MCPA Ester - 600 g/L EC		Foxy CM		Agracity
fluroxypyr - 180 g/L EC	thifensulfuron: tribenuron - 50%:25% WG		Deathstar		Agracity
fluroxypyr - 180 g/L EC	thifensulfuron: tribenuron - 25%:25% SG		ForceFighter M		ADAMA
fluroxypyr - 180 g/L EC	thifensulfuron: tribenuron - 25%:25% SG		Foxy M		Agracity
fluroxypyr - 180 g/L EC	thifensulfuron: tribenuron - 25%:25% SG		Trophy		Nufarm Agriculture
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Audible		Albaugh
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Foxy R		Agracity
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Foxy RCK		Agracity
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Foxy MR		Agracity
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Foxy Pro		Agracity
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Foxy Xtreme		Agracity
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Fluro Star		Albaugh
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC		Flurox-24		Nufarm Agriculture
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC	thifensulfuron: tribenuron - 50%:25% SG	Ikwin		FBN
fluroxypyr - 180 g/L EC	2,4-D Ester - 660 g/L EC	halauxifen - 16.2 g/L EC (F)	Rush 24		ADAMA
fluroxypyr - 217 g/L EC (F)	clodinafop - 112 g/L (F)		Signal FSU		Nufarm Agriculture
fluroxypyr - 250 g/L EC (F)	MCPA Ester - 600 g/L EC		Pixxaro		Corteva Agriscience



(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
fluroxypyr - 250 g/L EC (F)	pinoxaden - 50 g/L EC (F)	halauxifen - 16.2 g/L EC (F)		Rezuvant	Corteva Agriscience
fluroxypyr - 333 g/L EC	imazamox - 120 g/L SL			Cavaller	WinField United
fluroxypyr - 333 g/L EC	2,4-D E - 660 g/L EC			Altitude FX3	BASF
fluroxypyr - 333 g/L EC	clopyralid - 50 g/L EC (F)	MCPA Ester - 280 g/L EC (F)		Attain XC	Corteva Agriscience
fluroxypyr - 333 g/L EC	metasulfuron - 9.45% WG (F)	aminopyralid - 52.5% WG (F)		Prestige XC	Corteva Agriscience
fluroxypyr - 333 g/L EC	pyroxulam - 30 g/L OD			Sightline	Corteva Agriscience
fluroxypyr - 333 g/L EC	thifensulfuron:tribenuron - 25%:2.5% SG			Tandem	FMC
fluroxypyr - 333 g/L EC	thifensulfuron:tribenuron - 25%:2.5% SG	thiocarbazone - 10 g/L SC	MCPA Ester - 600 g/L EC	Predicade	FMC
fluroxypyr - 333 g/L EC	thifensulfuron:tribenuron - 33.3%:16.7% SG	2,4-D Ester - 564 g/L EC		Retain SG	Loveland Products
fluroxypyr - 61.6 g/L EC (F)	clopyralid - 42.7 g/L EC (F)	MCPA Ester - 240 g/L EC (F)		Prestige XL	Corteva Agriscience
fluroxypyr - 77 g/L EC (F)	clopyralid - 60 g/L EC (F)	MCPA Ester - 210 g/L EC (F)		CO-OP/IPCO State	IPCO
fluroxypyr - 77 g/L EC (F)	clopyralid - 60 g/L EC (F)	MCPA Ester - 210 g/L EC (F)		Truslate Pro	Nufarm Agriculture
fluroxypyr - 80 g/L EC (F)	2,4-D Ester - 240 g/L EC (F)	bromoxynil - 90 g/L EC (F)		Enforcer D	Nufarm Agriculture
fluroxypyr - 80 g/L EC (F)	MCPA Ester - 200 g/L EC (F)	bromoxynil - 200g/L EC (F)		CO-OP/IPCO Emit	IPCO
fluroxypyr - 80 g/L EC (F)	MCPA Ester - 200 g/L EC (F)	bromoxynil - 200g/L EC (F)		Enforcer M	Nufarm Agriculture
fluroxypyr - 80 g/L EC (F)	MCPA Ester - 200 g/L EC (F)			Pierce	Sharda Cropchem
fluroxypyr - 87.5 g/L EC (F)	pinoxaden - 50 g/L EC (F)			Axial Xtreme	Syngenta
fluroxypyr - 87.5 g/L EC (F)	pinoxaden - 50 g/L EC (F)	bromoxynil - 210 g/L EC (F)	pyrasulfotole - 37.5 g/L EC (F)	Axial Xtreme iPak	Syngenta
fluroxypyr - 90 g/L EC (F)	2,4-D Ester - 360 g/L EC (F)			OcTtain XL	Corteva Agriscience
fluroxypyr - 90 g/L EC (F)	2,4-D Ester - 360 g/L EC (F)			Osim Plus	Sharda CropChem
fluroxypyr - 90 g/L EC (F)	2,4-D Ester - 360 g/L EC (F)			Rush 24 All In	ADAMA
fluroxypyr - 90 g/L EC (F)	clopyralid - 90 g/L EC (F)			Inertia	Sharda CropChem
fluroxypyr - 90 g/L EC (F)	clopyralid - 90g/L SL (F)			Momentum	Loveland Products
fluroxypyr - 90 g/L EC (F2)	2,4-D Ester - 360 g/L EC (F2)	pinoxaden - 25 g/L EC (F1)	clodinafop - 25 g/L EC (F1)	TraxosTwo	Syngenta
fluroxypyr - 74.1 g/L SC (F)	MCPA ester - 197 g/L SC (F)	bromoxynil - 197 g/L SC (F)	flucarbazone - 16.7 g/L SC (F)	Batalium	UPL AgroSolutions
fomesafen - 240 g/L SL				Reflex	Syngenta
fomesafen - 67 g/L SL (F)	glyphosate - 271 g/L SL (F)			FlexStar GT	Syngenta
foramsulfuron - 22.5 g/L OD				Option 2.25 OD	Bayer
glufosinate - 146 g/L SL (F)	quinclorac - 15 g/L (SL) (F)			Advantage Glufosinate	Advantage Crop
glufosinate - 150 g/L SL				Plus	Protection
glufosinate - 150 g/L SL				Advantage Glufosinate-	Advantage Crop
glufosinate - 150 g/L SL				ammonium 150 SN	Protection
glufosinate - 150 g/L SL				Granata	Nufarm Agriculture
glufosinate - 150 g/L SL				Interline	UPL AgroSolutions
glufosinate - 150 g/L SL				Justice	WinField United
glufosinate - 150 g/L SL				Vigor	AgriCity
glufosinate - 280 g/L SL				Viking Glufosinate 150	Viking
				Advantage Glufosinate 280	Advantage Crop
				Protection	Protection
glufosinate - 150 g/L SL				Liberty 150 SN	BASF
glufosinate - 150 g/L SL				Opportunity 15 SL	Sharda Cropchem
glufosinate - 150 g/L S				ADAMA Glufosinate 150 SL	ADAMA
glufosinate - 200 g/L SL				Advantage Glufosinate	Advantage Crop
				200 SN	Protection
glufosinate - 200 g/L SL				Liberty 200 SN	BASF
glufosinate - 200 g/L SL				Vigor 200 SN	AgriCity
glyphosate - 240 g/L SL (F)	dicamba - 120 g/L SL (F)			Roundup Xtend	Bayer



(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
glyphosate - 271 g/L SL (F)	fomesafen - 67 g/L SL (F)			FlexStar GT	Syngenta
glyphosate - 317 g/L SL (F)	dicamba - 159 g/L SL (F)			Roundup Xtend 2 Advantage	Bayer
glyphosate - 360 g/L SL				Glyphosate 360	Crop Protection
glyphosate - 360 g/L SL				Crush'R Plus	Albaugh
glyphosate - 360 g/L SL				Smoke	FBN
glyphosate - 360 g/L SL				Shotgun 360,	Albaugh
glyphosate - 480 g/L SL				Sharda Glyphosate	Sharda CropChem
glyphosate - 480 g/L SL	clopyralid - 360 g/L SL			Eclipse XC	Corteva Agriscience
glyphosate - 480 g/L SL	florasulam - 50 g/L SC			PrePass XC	Corteva Agriscience
glyphosate - 540 g/L SL				Matrix	IPCO
glyphosate - 540 g/L SL				Advantage	Advantage
glyphosate - 540 g/L SL				Glyphosate 540	Crop Protection
glyphosate - 540 g/L SL				Credit Xtreme	Nufarm Agriculture
glyphosate - 540 g/L SL				Crush'R 540	Albaugh
glyphosate - 540 g/L SL				Disruptor 540	Agricity
glyphosate - 540 g/L SL				Destroyer 540	Agricity
glyphosate - 540 g/L SL				Factor 540	IPCO
glyphosate - 540 g/L SL				Gallop	Sharda Cropchem
glyphosate - 540 g/L SL				Glyforce WDG	Sharda Cropchem
glyphosate - 540 g/L SL				R/T 540	Bayer
glyphosate - 540 g/L SL				Roundup Transorb HC	Bayer
glyphosate - 540 g/L SL				Roundup WeatherMax	Bayer
glyphosate - 540 g/L SL				Shotgun 540	Albaugh
glyphosate - 540 g/L SL				Start Up	Lowland Products
glyphosate - 540 g/L SL				Stonewall	WinField United
glyphosate DMA - 204 g/L SL (F)	2,4-D Choline - 194 g/L SL (F)			Vector 540	Federated Co-op
halauxifen - 15 g/L EC (F)	carfentrazone - 27.97 g/L EC (F)			Enlist Duo	Corteva Agriscience
halauxifen - 16.2 g/L EC (F)	florasulam - 20% WG (F)			Prospect	Corteva Agriscience
halauxifen - 16.2 g/L EC (F)	florasulam - 20% WG (F)			Cirpeme	Corteva Agriscience
halauxifen - 16.2 g/L EC (F)	fluroxypyr - 250 g/L EC (F)	clopyralid - 360 g/L SL		Cirpeme XC	Corteva Agriscience
halauxifen - 16.2 g/L EC (F)	fluroxypyr - 250 g/L EC (F)	clopyralid - 600 g/L SL		Pixxaro	Corteva Agriscience
halauxifen - 20% WG (F)	florasulam - 20% WG (F)	MCPA Ester - 600 g/L EC		Rezuvant	Corteva Agriscience
halauxifen - 20% WG (F)	florasulam - 20% WG (F)	pinoxaden - 50 g/L EC		CO-OP/IPCO Exhilarate	IPCO
halauxifen - 20% WG (F)	florasulam - 20% WG (F)	MCPA Ester - 600 g/L EC		Exhilarate	Corteva Agriscience
halauxifen - 4.7 g/L ME (F)	florasulam - 20% WG (F)	MCPA Ester - 600 g/L EC		Paradigm PRE	Corteva Agriscience
halauxifen - 5% WG (F)	fluroxypyr - 122.2 g/L ME (F)			Prominex	Corteva Agriscience
halosulfuron - 72.6% WG	pyroxsulam - 15% WG (F)			Rexade	Corteva Agriscience
hexazinone - 75% WG				Permit	Gowan
imazamox - 120 g/L SL				Velpar DF CU	Tessenderlo Kerley Inc.
imazamox - 120 g/L SL	fluroxypyr - 333 g/L EC			Altitude FX3	BASF
imazamox - 20 g/L SL (F)				Image	Sharda Cropchem
imazamox - 20 g/L SL (F)	bentazon - 429 g/L SL (F)			Benz	Sharda CropChem
imazamox - 20 g/L SL (F)	bentazon - 429 g/L SL (F)			Viper ADV	BASF
imazamox 20.6 g/L SL (F)				Ransack	Nufarm Agriculture
imazamox - 25 g/L SL	quizalofop - 96 g/L EC			Solo Ultra Q	BASF
imazamox - 80 g/L SL	quizalofop100 g/L EC			Davai Q Plus	ADAMA
imazamox - 25 g/L SL				Solo ADV	BASF
imazamox - 33 g/L SL (F)	imazapyr - 15 g/L SL (F)			Ares SN	Corteva Agriscience
imazamox - 35% WG (F)	imazethapyr - 35% WG (F)			Ninja Master	Agricity
imazamox - 35% WG (F)	imazethapyr - 35% WG (F)	clethodim - 240 g/L EC		Odyssey Ultra Q	BASF
imazamox - 35% WG (F)	imazethapyr - 35% WG (F)	quizalofop - 96 g/L EC		Judo	Sharda Cropchem
imazamox - 35% WG (F)	imazethapyr - 35% WG (F)			Ninja	Agricity
imazamox - 35% WG (F)	imazethapyr - 35% WG (F)			Odyssey NXT	BASF

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
imazamox - 35% WG (F)	imazethapyr - 35% WG (F)			Viking Skien	Viking
imazamox - 350 g/L SL				Venim	Nufarm Agriculture
imazamox - 70% WG				Amity WDG	Corteva Agriscience
imazamox - 70% WG	bentazon - 480 g/L SL	quizalofop-p - 96 g/L EC		Anaconda	Agricity
imazamox - 70% WG	bentazon - 480 g/L SL			Boa Pro	Agricity
imazamox - 70% WG	bentazon - 480 g/L SL			Taipan	Agricity
imazamox - 70% WG	clethodim - 240 g/L EC			Samauri Master	Albaugh
imazamox - 70% WG				Dakota	Sharda CropChem
imazamox - 70% WG				Next	Agricity
imazamox - 70% WG				Samauri	Sharda CropChem
imazamox - 70% WG				Viking Imazamox	Viking
imazamox - 70% WG				Davai 80SL	ADAMA
imazamox - 80 g/L SL	bentazon - 480 g/L SL			Python	ADAMA
imazamox - 80 g/L SL	imazethapyr - 240 g/L SL			Quasar	ADAMA
imazapyr - 15 g/L SL (F)	imazamox - 33 g/L SL (F)			Ares SN	Corteva Agriscience
imazapyr - 240 g/L SL				Arsenal	BASF
imazethapyr - 240 g/L SL	imazamox - 80 g/L SL			Quasar	ADAMA
imazethapyr - 240 g/L SL				Kamikaze	Agricity
imazethapyr - 240 g/L SL				Phantom	ADAMA
imazethapyr - 240 g/L SL				Pursuit	BASF
imazethapyr - 240 g/L SL				Viking Imazethapyr	Viking
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)	clethodim - 240 g/L EC		Ninja Master	Agricity
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)			Judo	Sharda CropChem
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)			Ninja	Agricity
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)			Odyssey NXT	BASF
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)			Odyssey Ultra Q	BASF
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)			Viking Skien	Viking
imazethapyr - 35% WG (F)	imazamox - 35% WG (F)			Esplanade	Bayer
indaziflam - 200 g/L SC				Lorox L	Tessenderlo Kerley Inc.
linuron - 480 g/L SC				Optica Trio	UAP
MCPA Amine - 160 g/L SL (F)	mecoprop-P - 130 g/L SL (F)	dichlorprop-P - 310 g/L SL (F)		Sword	Loveland Products
MCPA Amine - 275 g/L SL (F)	dicamba - 62.5 g/L SL (F)	mecoprop-P - 62.5 g/L SL (F)		Tracker XP	IPCO
MCPA Amine - 275 g/L SL (F)	dicamba - 62.5 g/L SL (F)			MCPA Amine	Various
MCPA Amine - 500, 600 g/L SL				CO-OP/IPCO Emit	IPCO
MCPA Ester - 200 g/L EC (F)	bromoxynil - 200g/L EC (F)	fluroxypyr - 80 g/L EC (F)		Enforcer M	Nufarm Agriculture
MCPA Ester - 200 g/L EC (F)	bromoxynil - 200g/L EC (F)	fluroxypyr - 80 g/L EC (F)		Pierce	Sharda Cropchem
MCPA Ester - 200 g/L EC (F)	bromoxynil - 200g/L EC (F)	fluroxypyr - 80 g/L EC (F)		CO-OP/IPCO State	IPCO
MCPA Ester - 210 g/L EC (F)	fluroxypyr - 77 g/L EC (F)	clopyralid - 60 g/L EC (F)		Truslate Pro	Nufarm Agriculture
MCPA Ester - 210 g/L EC (F)	fluroxypyr - 77 g/L EC (F)	clopyralid - 60 g/L EC (F)		Badge	ADAMA
MCPA Ester - 225 g/L EC (F)	bromoxynil - 225 g/L EC (F)			Brox M	Albaugh
MCPA Ester - 225 g/L EC (F)	bromoxynil - 225 g/L EC (F)			Logic M	IPCO
MCPA Ester - 225 g/L EC (F)	bromoxynil - 225 g/L EC (F)			Double Trouble	IPCO
MCPA Ester - 225 g/L EC (F)	bromoxynil - 225 g/L EC (F)			Mextrol 450	Nufarm Agriculture
MCPA Ester - 225 g/L EC (F)	bromoxynil - 225g/L EC (F)			ForceFighter M	ADAMA
MCPA Ester - 240 g/L EC (F)	fluroxypyr - 61.6 g/L EC (F)	fluroxypyr - 180 g/L EC		Prestige XL	Corteva Agriscience
MCPA Ester - 240 g/L EC (F)	bromoxynil - 280 g/L EC (F)	clopyralid - 42.7 g/L EC (F)		Foxyx Canuck	Agricity
MCPA Ester - 280 g/L EC (F)	bromoxynil - 280 g/L EC (F)	fluroxypyr - 180 g/L EC		Brilliant	Sharda Cropchem
MCPA Ester - 280 g/L EC (F)	bromoxynil - 280 g/L EC (F)			Buctrim M	Bayer
MCPA Ester - 280 g/L EC (F)	bromoxynil - 280 g/L EC (F)			Canuck	Agricity
MCPA Ester - 280 g/L EC (F)	clopyralid - 50 g/L EC (F)	fluroxypyr - 180 g/L EC		Foxyx CM	Agricity
MCPA Ester - 280 g/L EC (F)	clopyralid - 50 g/L EC (F)			Certain	Sharda Cropchem
MCPA Ester - 280 g/L EC (F)	clopyralid - 50 g/L EC (F)			Clobber M	Agricity
MCPA Ester - 280 g/L EC (F)	clopyralid - 50 g/L EC (F)			Curtail M	Nufarm Agriculture
MCPA Ester - 280 g/L EC (F)	clopyralid - 50 g/L EC (F)			Spur-M	Albaugh



(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
MCPA Ester - 280 g/L EC (F)	clopyralid - 50 g/L EC (F)	clopyralid - 50 g/L EC (F)		<i>Viking Drammen</i>	Viking
MCPA Ester - 280 g/L EC (F)	fluroxypyr - 333 g/L EC	fluroxypyr - 333 g/L EC (F)	clopyralid - 50 g/L EC (F)	<i>Prestige XC</i>	Corteva Agriscience
MCPA Ester - 350 g/L (F)	fluroxypyr - 100 g/L SC (F)	fluroxypyr - 100 g/L SC (F)	florasulam - 2.5 g/L SC (F)	<i>Stellar XL</i>	Corteva Agriscience
MCPA Ester - 420 g/L (F)	pyraflufen - 13.5 g/L (F)	pyraflufen - 13.5 g/L (F)	florasulam - 50 g/L SC	<i>Thunderhawk</i>	Nufarm Agriculture
MCPA Ester - 420 g/L (F)	pyraflufen - 13.5 g/L (F)	pyraflufen - 13.5 g/L (F)		<i>Goldwing</i>	Nufarm Agriculture
MCPA Ester - 500 or 600 g/L EC	thiensusulfuron: tribenuron - 33.3%:16.7% SG	thiensusulfuron: tribenuron - 33.3%:16.7% SG		<i>BroadSide</i>	Loveland Products
MCPA Ester - 500 or 600 g/L EC	thiensusulfuron: tribenuron - 33.3%:16.7% SG	thiensusulfuron: tribenuron - 33.3%:16.7% SG		<i>Refine M</i>	FMC
MCPA Ester - 500, 600 g/L EC	florasulam - 2.5 g/L SC (F)	florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)	<i>MCPA Ester</i>	Various
MCPA Ester - 600 g/L EC	florasulam - 2.5 g/L SC (F)	florasulam - 2.5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)	<i>Outshine</i>	ADAMA
MCPA Ester - 600 g/L	florasulam - 20% WG (F)	florasulam - 20% WG (F)	fluroxypyr - 100 g/L SC (F)	<i>Stellar</i>	Corteva Agriscience
MCPA Ester - 600 g/L EC	florasulam - 20% WG (F)	florasulam - 20% WG (F)	halauxifen - 20% WG (F)	CO-OP/PCO Exhilarate	IPCO
MCPA Ester - 600 g/L EC	florasulam - 20% WG (F)	florasulam - 20% WG (F)	halauxifen - 20% WG (F)	Exhilarate	Corteva Agriscience
MCPA Ester - 600 g/L EC	florasulam - 50 g/L SC	florasulam - 50 g/L SC	clopyralid - 360 g/L EC	<i>Topline</i>	ADAMA
MCPA Ester - 600 g/L EC	fluroxypyr - 180 g/L EC	fluroxypyr - 180 g/L EC		<i>Esteem</i>	ADAMA
MCPA Ester - 600 g/L EC	fluroxypyr - 180 g/L EC	fluroxypyr - 180 g/L EC		<i>Foxy M</i>	Agricity
MCPA Ester - 600 g/L EC	fluroxypyr - 180 g/L EC	fluroxypyr - 180 g/L EC		<i>Trophy</i>	Nufarm Agriculture
MCPA Ester - 600 g/L EC	halauxifen - 16.2 g/L EC (F)	halauxifen - 16.2 g/L EC (F)	fluroxypyr - 250 g/L EC (F)	<i>Pixxaro</i>	Corteva Agriscience
MCPA Ester - 600 g/L EC	thiensusulfuron: tribenuron - 25%:25% SG	thiensusulfuron: tribenuron - 25%:25% SG	fluroxypyr - 180 g/L EC	<i>Foxy MR</i>	Agricity
MCPA Ester - 600 g/L EC	thiensusulfuron: tribenuron - 25%:25% SG	thiensusulfuron: tribenuron - 25%:25% SG	fluroxypyr - 333 g/L EC	<i>Predicade</i>	FMC
MCPA Ester - 197 g/L SC (F)	bromoxynil - 197 g/L SC (F)	bromoxynil - 197 g/L SC (F)	thiencarbazone - 10 g/L SC		
MCPA K+ - 25 g/L SL (F)	MCPB - 375 g/L SL (F)	MCPB - 375 g/L SL (F)	fluroxypyr - 16.7 g/L SC (F)	<i>Batalium</i>	UPL AgroSolutions
MCPA K+ - 25 g/L SL (F)	MCPB - 375 g/L SL (F)	MCPB - 375 g/L SL (F)	fluroxypyr - 74.1 g/L SC (F)	<i>Topside</i>	Loveland Products
MCPA K+ - 25 g/L SL (F)	MCPB - 375 g/L SL (F)	MCPB - 375 g/L SL (F)		<i>Tropotox Plus</i>	Nufarm Agriculture
MCPA Na+ - 25 g/L SL (F)	MCPB - 375 g/L SL (F)	MCPB - 375 g/L SL (F)		<i>MCPA K+</i>	Various
MCPA Na+ - 25 g/L SL (F)	MCPB - 375 g/L SL (F)	MCPB - 375 g/L SL (F)		<i>Clovitox Plus</i>	IPCO
MCPA Na+ - 300 g/L SL	MCPA Na+ - 25 g/L SL (F)	MCPA Na+ - 25 g/L SL (F)		<i>MCPA Na</i>	Various
MCPB - 375 g/L SL (F)	MCPA K+ - 25 g/L SL (F)	MCPA K+ - 25 g/L SL (F)		<i>Clovitox Plus</i>	IPCO
MCPB - 375 g/L SL (F)	MCPA K+ - 25 g/L SL (F)	MCPA K+ - 25 g/L SL (F)		<i>Topside</i>	Loveland Products
MCPB - 375 g/L SL (F)	MCPA K+ - 25 g/L SL (F)	MCPA K+ - 25 g/L SL (F)		<i>Tropotox Plus</i>	Nufarm Agriculture
mecoprop-P - 130 g/L SL (F)	MCPA Amine - 160 g/L SL (F)	MCPA Amine - 160 g/L SL (F)	dichlorprop-P - 310 g/L SL (F)	<i>Optica Trio</i>	Nufarm Agriculture
mecoprop-P - 150 g/L SL				<i>Mecoprop-P</i>	UAP
mecoprop-P - 62.5 g/L SL (F)	dicamba - 62.5 g/L SL (F)	dicamba - 62.5 g/L SL (F)	MCPA Amine - 275 g/L SL (F)	<i>Sword</i>	Loveland Products
mecoprop-P - 62.5 g/L SL (F)	dicamba - 62.5 g/L SL (F)	dicamba - 62.5 g/L SL (F)	MCPA Amine - 275 g/L SL (F)	<i>Tracker XP</i>	IPCO
mesotrione - 480 g/L SL	atrazine - 320 g/L SC (F)	atrazine - 320 g/L SC (F)		<i>Callisto 480 SC</i>	Syngenta Canada
metolachlor - 400 g/L SC (F)	metribuzin - 135 g/L EC (F)	metribuzin - 135 g/L EC (F)		<i>Primextra II Magnum</i>	Syngenta
metolachlor - 405 g/L EC (F)	metribuzin - 135 g/L EC (F)	metribuzin - 135 g/L EC (F)		<i>Strim MTZ</i>	UPL AgroSolutions
metolachlor - 915 g/L EC	metribuzin - 347 g/L SC (F)	metribuzin - 347 g/L SC (F)		<i>Dual II Magnum</i>	Syngenta
metolachlor - 915 g/L EC	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Komodo</i>	UPL AgroSolutions
metolachlor - 915 g/L EC	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Metallica</i>	Sharda CropChem
metolachlor - 915 g/L EC	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Stallion</i>	Agricity
metribuzin - 135 g/L EC (F)	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Strim MTZ</i>	UPL AgroSolutions
metribuzin - 347 g/L SC (F)	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>IPCO Bifecta EZ</i>	IPCO
metribuzin - 480 g/L SC	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Metrix SC</i>	Sharda CropChem
metribuzin - 480 g/L SC	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Sencor 480 F</i>	Bayer
metribuzin - 70% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>TriCor LQ</i>	UPL AgroSolutions
metribuzin - 75% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Buzzin</i>	Sharda CropChem
metribuzin - 75% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Meteor</i>	Agricity
metribuzin - 75% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Meter 75 DF</i>	Sharda CropChem
metribuzin - 75% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Sencor 75DF</i>	Bayer
metribuzin - 75% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Squadron II</i>	ADAMA
metribuzin 75% WG	metribuzin - 480 g/L SC	metribuzin - 480 g/L SC		<i>Squadron</i>	ADAMA

(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
metribuzin - 75% WG metsulfuron - 12.6% WG (F)	aminocyclopyrachlor - 39.5% WG (F)			TriCor 75DF	UPL AgroSolutions
metsulfuron - 12.6% WG (F)	aminocyclopyrachlor - 39.5% WG (F)			TruRange	Envu Canada
metsulfuron - 3 g/L SC (F)	thiênsulfuron - 30 g/L SC (F)	fluroxypyr - 150 g/L SC (F)		Navius Flex	Envu Canada
metsulfuron - 60% WG				Travallas Ally	FMC
metsulfuron - 60% WG				Ally Toss-N-Go	FMC
metsulfuron - 60% WG				Escort	FMC
metsulfuron - 60% WG				MPOWER Pro	Envu Canada
metsulfuron - 60% WG				Plotter	AgraCity
metsulfuron - 60% WG				Express Pro	Albaugh
metsulfuron - 8.6% SG (B)	tribenuron - 42.9% SG (B)			Sightline	FMC
metsulfuron - 9.45% WG (F)	aminopyralid - 52.5% WG (F)	fluroxypyr - 333 g/L EC		ClearView	Corteva Agriscience
metsulfuron - 9.45% WG (F)	aminopyralid - 52.5% WG (F)			Reclaim II	Corteva Agriscience
metsulfuron - 9.45% WG (F)	aminopyralid - 52.5% WG (F)	2,4-D Ester - 660 g/L EC		Smoulder	BASF
metsulfuron - 5.4% WG (F)	saflufenacil - 64.6% WG (F)			Steadfast IS	Corteva Agriscience
nicosulfuron - 25% WG (F)	rimsulfuron - 12.5% WG (F)			Accent IS	Corteva Agriscience
nicosulfuron - 54.55% WG				Accent	Corteva Agriscience
nicosulfuron - 75% WG				Nicosh	Sharda CropChem
nicosulfuron - 75% WG				Beloukha	Belchim Crop Protection
pelargonic acid - 500/680 g/L EC				Tordon 22K	Corteva Agriscience
picloram - 240 g/L SL				Grazon XC	Corteva Agriscience
picloram - 97.5 g/L SL (F)	2,4-D Choline - 360 g/L SL (F)			Advantage Pinoxaden	Corteva Agriscience
pinoxaden - 100 g/LEC				Protection	ADAMA
pinoxaden - 100 g/LEC				Brazen II	ADAMA
pinoxaden - 100 g/LEC				CO-OP/IPCO Avant	IPCO
pinoxaden - 100 g/LEC				Epic	Nufarm Agriculture
pinoxaden - 100 g/LEC				Epic II	Nufarm Agriculture
pinoxaden - 100 g/LEC				Trondus	Syngenta
pinoxaden - 100 g/LEC				Traxos	Syngenta
pinoxaden - 25 g/L EC (F)	clodinafop - 25 g/L EC (F)			Traxos Iwo	Syngenta
pinoxaden - 25 g/L EC (F1)	clodinafop - 25 g/L EC (F1)	2,4-D Ester - 360 g/L EC (F2)		Rezuvant	Corteva Agriscience
pinoxaden - 50 g/L EC	fluroxypyr - 250 g/L EC (F)	fluroxypyr - 90 g/L EC (F2)		Carray	Bayer
pinoxaden - 50 g/L EC (F)	fenoxaprop-p - 50 g/L EC (F)	halauxifen - 16.2 g/L EC (F)		Axial Xtreme	Syngenta
pinoxaden - 50 g/L EC (F)	fluroxypyr - 87.5 g/L EC (F)			Ace 50	AgraCity
pinoxaden - 50 g/L EC (F1)	fluroxypyr - 87.5 g/L EC (F1)	pyrasulfotole - 37.5 g/L EC (F2)		Axial Xtreme iPak	Syngenta
pinoxaden - 50g/L EC	florasulam - 5 g/L SC (F)	fluroxypyr - 100 g/L SC (F)		Axial	Syngenta
pinoxaden - 50g/L EC				Avenza	Corteva Agriscience
pinoxaden - 50g/L EC	florasulam - 7.7 g/L EC (F)			Pina	Sharda Cropchem
pinoxaden - 92.7 g/L EC (F)				Broadband	Viking
propoxycarbazone - 70% WG				Olympus	Syngenta
propyzamide - 400 g/L SC				Kerb SC	Bayer
pyraflufen - 7.3 g/L EC (F)	dichlorprop - 284 g/L EC (F)	2,4-D Ester - 284 g/L EC (F)		Blackhawk EVO	Corteva Agriscience
pyraflufen - 13.5 g/L (F)	MCPA Ester - 420 g/L (F)	florasulam - 50 g/L SC		Thunderhawk	Nufarm Agriculture
pyraflufen - 13.5 g/L (F)	MCPA Ester - 420 g/L (F)			Goldwing	Nufarm Agriculture
pyraflufen - 6.1 g/L (F)	2,4-D Ester - 473 g/L (F)			BlackHawk	Nufarm Agriculture
pyraflufen - 15 EC (F)	bromoxynil - 467g/L EC (F)			Conquer II	Nufarm Agriculture
pyrasulfotole - 15.5 g/L EC (F)	fenoxaprop-p - 46 g/L EC (F)	bromoxynil - 87.5 g/L EC (F)		Tundra	Bayer
pyrasulfotole - 31.1 g/L EC (F)	bromoxynil - 174.3 g/L EC (F)	fluroxypyr - 72 g/L EC (F)		Infinity FX	Bayer
pyrasulfotole - 31.3 g/L EC (F)	thiocarbazone - 5 g/L SC (F)	bromoxynil - 175 g/L EC (F)		Velocity m3	Bayer
pyrasulfotole - 37.5 g/L EC (F)	bromoxynil - 210 g/L EC (F)			Infinity	Bayer





(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
pyrasulfotole - 37.5 g/L EC (F) pyridate - 600 g/L EC	bromoxynil - 210 g/L EC (F)	pinoxaden - 50 g/L EC (F1)	fluroxypyr - 87.5 g/L EC (F1)	Axial Xtreme iPak Tough EC	Syngenta
pyroxasulfone - 203 g/L SC (F)	flumioxazin - 160 g/L SC (F)			Fierce EZ	Belchim Crop Protection
pyroxasulfone - 203 g/L SC (F)	flumioxazin - 160 g/L SC (F)			Torpedo EZ	Valent
pyroxasulfone - 250 g/L SC (F)	sulfentrazone - 250 g/L SC (F)			Authority Supreme	FMC
pyroxasulfone - 44.5% WG (F)	flumioxazin - 33.5% WG (F)			Fierce	Valent
pyroxasulfone - 44.5% WG (F)	flumioxazin - 33.5% WG (F)			Torpedo	Valent
pyroxasulfone - 447 g/L SE (F)	carfentrazone - 53 g/L SE (F)			Focus	FMC
pyroxasulfone - 500 g/L	saflufenacil - 342 g/L SC	saflufenacil 250 g/L (SC) (F)		Heat Complete	BASF
pyroxasulfone - 500 g/L	trifludimoxazin 125 g/L SC (F)			Voraxor Complete	BASF
pyroxasulfone - 500 g/L				Zidua SC	BASF
pyroxasulfone - 500 g/L	fluroxypyr - 113.5 g/L SC (F)			Erebus Xtreme	Syngenta
pyroxasulfone - 12.8 g/L SC (F)	halauxifen - 5% WG (F)	2,4-D Ester - 660 g/L EC		Rexade	Corteva Agriscience
pyroxasulfone - 15% WG (F)				Simplicity GoDRI	Corteva Agriscience
pyroxasulfone - 21.5% WG	fluroxypyr - 333 g/L EC			Tandem	Corteva Agriscience
pyroxasulfone - 30 g/L OD				Simplicity OD	Corteva Agriscience
pyroxasulfone - 30 g/L SC				Clever	FBN Canada
pyroxasulfone - 75% WDG				Ingenious	UAP
pyroxasulfone - 75% WDG				Facet L	BASF
pyroxasulfone - 180 g/L SL	glufosinate - 146 g/L SL (F)			Advantage Glufosinate Plus	Advantage Crop Protection
pyroxasulfone - 15 g/L (SL) (F)				Solo Ultra Q	BASF
quizalofop - 96 g/L EC	imazamox - 25 g/L SL	imazethapyr - 35% WG (F)		Odysey Ultra Q	BASF
quizalofop - 96 g/L EC	imazamox - 35% WG (F)			Davai Q Plus	ADAMA
quizalofop-p - 100 g/L EC	imazamox - 80 g/L SL			Assure II	AMVAC Canada
quizalofop-p - 96 g/L EC				Viking Quizalofop	Viking
quizalofop-p - 96 g/L EC	bentazon - 480 g/L SL			Boa IQ	Agricity
quizalofop-p - 96 g/L EC	bentazon - 480 g/L SL	imazamox - 70% WG		Anaconda	Agricity
quizalofop-p - 96 g/L EC	clethodim - 240 g/L EC (F)			Select Plus	UPL AgroSolutions
quizalofop - 120 g/L EC (F)				Canada	Canada
quizalofop-p - 96 g/L EC				Caziva Ultra Q	BASF
quizalofop-p - 96 g/L EC				CO-OP/IPCO Contender II	IPCO
quizalofop-p - 96 g/L EC				Elegant 10EC	Sharda CropChem
quizalofop-p - 96 g/L EC				Idol	Nufarm Agriculture
quizalofop-p - 96 g/L EC				Marshall	WinField United
quizalofop-p - 96 g/L EC				Quiz	Agricity
quizalofop-p - 96 g/L EC				Yuma GL	Gowan
quizalofop-p - 96 g/L EC				Leopard	ADAMA
quizalofop-p - 100 g/L EC	nicosulfuron - 25% WG (F)			Steadfast IS	Corteva Agriscience
quinclorac - 20% WG				Sortan IS	Corteva Agriscience
quinclorac - 25% SG				Prism SG	Corteva Agriscience
quinclorac - 25% WG				Hinge	Albaugh
quinclorac - 25% WG				Heat Complete	Sharda Cropchem
quinclorac - 342 g/L SC	pyroxasulfone - 500 g/L			Detail	BASF
quinclorac - 342 g/L SC				Heat LQ	BASF
quinclorac - 342 g/L SC	metsulfuron - 5.4% WG (F)			Smoulder	BASF
quinclorac - 64.6% WG (F)				Heat WG	BASF
quinclorac - 70% SG				Voraxor Complete	BASF
quinclorac - 70% SG				Voraxor	BASF
saflufenacil - 342 g/L SC	pyroxasulfone - 500 g/L			Poast Ultra	BASF
saflufenacil - 342 g/L SC	trifludimoxazin 125 g/L SC (F)	trifludimoxazin 125 g/L SC (F)		Simazine 480	BASF
saflufenacil - 64.6% WG (F)				Princep Nine T	BASF
saflufenacil - 64.6% WG (F)				Authority Supreme	Syngenta
saflufenacil 250 g/L (SC) (F)					FMC
saflufenacil 250 g/L (SC) (F)					
sethoxydim - 450 g/L EC					
simazine - 480 g/L SC					
simazine - 90% WG					
sulfentrazone - 250 g/L SC (F)	pyroxasulfone - 250 g/L SC (F)				



(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
sulfentrazone - 380 g/L SE (F)	carfentrazone - 42 g/L SE (F)			Authority Strike	FMC
sulfentrazone - 480 g/L SC				Authority	FMC
tembotrione - 420 g/L SC				Laudis	Bayer
thiencarbazono - 10 g/L SC	fluroxypyr - 333 g/L EC	thifensulfuron:tribenuron - 25%:25% SG	MCPA Ester - 600 g/L EC	Predicade	FMC
thiencarbazono - 10 g/L SC				Varro	Bayer
thiencarbazono - 5 g/L SC (F)	pyrasulfotole - 31.3 g/L EC (F)	bromoxynil - 175 g/L EC (F)		Velocity m3	Bayer
thiencarbazono - 5 g/L EC (F)	fluroxypyr - 118 g/L EC (F)			Varro FX	Bayer
thifensulfuron - 30 g/L SC (F)	fluroxypyr - 150 g/L SC (F)			Sentrallas	FMC
thifensulfuron - 30 g/L SC (F)	fluroxypyr - 150 g/L SC (F)			Travallas	FMC
thifensulfuron - 50% SG				Pinnacle SG	FMC
thifensulfuron - 50% SG				Pinnacle SG Toss-n-Go	FMC
thifensulfuron - 75% WG	MCPA Ester - 500 or 600 g/L EC			Volta	Albaugh
thifensulfuron: tribenuron - 33.3%:16.7% SG				BroadSide	Loveland Products
thifensulfuron: tribenuron - 33.3%:16.7% SG	MCPA Ester - 500 or 600 g/L EC			Refine M	FMC
thifensulfuron: tribenuron - 50%:25% SG	clodinafop - 112 g/L (F)	fluroxypyr - 217 g/L EC (F)		Signal FSU	Nufarm Agriculture
thifensulfuron: tribenuron - 33.3%:16.7% SG	fluroxypyr - 333 g/L EC			Refine SG	FMC
thifensulfuron: tribenuron - 50%:25% SG				Retain SG	Loveland Products
thifensulfuron: tribenuron - 50%:25% WG	fluroxypyr - 180 g/L EC	2,4-D Ester - 564 g/L EC		MPOWER RX	Agracity
thifensulfuron: tribenuron - 50%:25% WG	dicamba - 480 g/L SL	2,4-D Ester - 660g/L EC		Viking Navik	Viking
thifensulfuron: tribenuron - 25%:25% WG	fluroxypyr - 180 g/L EC			Foxy Pro RX	Agracity
thifensulfuron: tribenuron - 50%:25% WG	fluroxypyr - 180 g/L EC			Ammo DR	Agracity
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 180 g/L EC	clopyralid - 360 g/L SL		Foxy CRX	Agracity
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 333 g/L EC			Audible	Albaugh
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 180 g/L EC			Draft	Albaugh
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 333 g/L EC			Foxy R	Agracity
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 180 g/L EC			Barricade II	FMC
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 180 g/L EC	MCPA Ester - 600 g/L EC		Foxy MR	Agracity
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 333 g/L EC	thiencarbazono - 10 g/L SC	MCPA Ester - 600 g/L EC	Predicade	FMC
thifensulfuron: tribenuron - 25%:25% SG	fluroxypyr - 180 g/L EC			Foxy RCK	Agracity
tiafenacil - 339 g/L SC				Insight SC	Gowan
topremazono - 336 g/L SC				Certitude	BASF
topremazono - 336 g/L SC				Armezon	BASF
topremazono - 336 g/L SC				Impact	UAP
topyralate - 400 g/L SC				Shieldex 400SC	Gowan



(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
tolpyralate - 18.7 g/L EC (F)	bromoxynil - 186.6 g/L EC (F)			OnDeck	Corteva Agriscience
tralkoxydim - 400 g/L SC				Achieve (Liquid Achieve)	Corteva Agriscience
tralkoxydim - 400 g/L SC				Bison	ADAMA
tralkoxydim - 400 g/L SC				Marengo	Loveland Products
tralkoxydim - 400 g/L SC				Nufarm Trialkoxydim	Nufarm Agriculture
triallate - 10% G				Advantage Triallate 10%	Advantage Crop
triallate - 10% G				Granular	Protection
triallate - 10% G (F)	trifluralin - 4% G (F)			Avadex MicroActiv	Gowan
triallate - 480 g/L EC	trifluralin - 4% G (F)			Advantage Triallate	Advantage Crop
tribenuron - 25% WG (F)	flucarbazone - 45% WG (F)			10%-Trifluralin 4%	Protection
tribenuron - 42.9% SG (B)	metsulfuron - 8.6% SG (B)			Fortress MicroActiv	Gowan
tribenuron - 50% SG				Avadex Liquid EC	Gowan
tribenuron - 50% WG				Inferno Duo	UPL AgroSolutions
tribenuron - 50% WG (F)	dicamba - 480 g/L WG (F)			Express Pro	FMC
tribenuron - 4.69% WGR (B)	dicamba - 43.75% WGR (B)	carfentrazone - 11.25%		Express SG	FMC
		WGR(B)		Involve 50 WDG	ADAMA
				Express FX	FMC
				Intruviix II	FMC
tribenuron - 6.52% WG (F)	dicamba - 60.9% WG (F)			Intruviix	FMC
tribenuron - 7.5% WG	carfentrazone - 240 g/L EC			Revenge E	Agracity
tribenuron - 7.5% WG	flucarbazone - 66% WDG			Viking Visby	Viking
tribenuron - 7.5% WG	flucarbazone - 66% WG			Himalaya Extra	Agracity
tribenuron - 7.5% WG				Cleat	Albaugh
tribenuron - 7.5% WG				Inferno	UPL AgroSolutions
tribenuron - 7.5% WG				MPOWER Extra	Agracity
tribenuron - 7.5% WG				Tribe 75 WDG	Sharda Cropchem
tribenuron - 8.25% WG (F)	dicamba - 58.45% WG (F)			Viking Tribenuron	Viking
trifludimoxazin 125 g/L SC (F)	saflufenacil 250 g/L (SC) (F)	2,4-D Ester - 660g/L EC		Triton K	FMC
trifludimoxazin 125 g/L SC (F)	saflufenacil 250 g/L (SC) (F)	pyroxasulfone - 500 g/L		Voraxor Complete	BASF
trifluralin - 10% G				Voraxor	BASF
				Advantage Trifluralin 10%	Advantage Crop
					Protection
trifluralin - 10% G				Bonanza 10G	UAP
trifluralin - 10% G				Bonita	Sharda CropChem
trifluralin - 10% G				Rival 10G	Nufarm Agriculture
trifluralin - 10% G				Treflan MicroActiv	Gowan
trifluralin - 480 g/L EC				Advantage Trifluralin	Advantage Crop
trifluralin - 480 g/L EC				480EC	Protection
trifluralin - 480 g/L EC				Bonanza 480 Liquid	UAP
trifluralin - 480 g/L EC				Thrill	Sharda Cropchem
trifluralin - 500 g/L EC				Treflan Liquid EC	Gowan
Trinexapac-ethyl - 113 g/LEC				Rival EC	Nufarm Agriculture
				Moddus	Syngenta





## Foliar Fungicides

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
ametoctradin - 300 g/L SC (F)	dimethomorph - 225 g/L SC (F)	benzovindiflupyr - 100 g/L EC		Zampro	BASF
azoxystrobin - 75 g/L SC (F)	propiconazole - 125g/L SC (F)			Trivaprop	Syngenta
azoxystrobin - 75 g/L SC (F)	propiconazole - 125 g/L SC (F)			Quilt	Syngenta
azoxystrobin - 100 g/L SC	propiconazole - 125 g/L SC	pydiflumetofen - 75 g/L SC		Miravis Neo 300SE	Syngenta
azoxystrobin - 120 g/L EC	prothioconazole- 90 g/L EC			Maxentis	Adama Agricultural Canada
azoxystrobin - 120 g/L SC	Tebuconazole - 200 g/L SC			Custodia	ADAMA
azoxystrobin - 143 g/L SC (F)	propiconazole - 124 g/L SC (F)			Topnotch	ADAMA
azoxystrobin - 200 g/L SC (F)	difenoconazole - 125 g/L SC (F)			Quadrif Top	Syngenta
azoxystrobin - 250 g/L SC	benzovindiflupyr - 100 g/L EC			Elatus	Syngenta
azoxystrobin - 250 g/L SC				Azoshy 250SC	Sharda Crop Chem
azoxystrobin - 250 g/L SC				Quadrif	Syngenta
azoxystrobin - 250 g/L SC				Quasi	AgraCity
azoxystrobin - 250 g/L SC				Quasimodo	AgraCity
azoxystrobin - 250 g/L SC				Emissarius	UAP Canada
azoxystrobin - 250 g/L SC				Razor	Albaugh
azoxystrobin - 250 g/L SC	propiconazole - 250 g/L SC (F)			VIKING Azoxystrobin	Viking Crop Production
azoxystrobin - 250 g/L SC					Partners Inc.
azoxystrobin - 390 g/L SC				AZteroid FC	UAP Canada
<i>Bacillus amyloliquifaciens</i> - 5x10 <sup>10</sup> spores/mL AS				Double Nickel LC	UAP
<i>Bacillus amyloliquifaciens</i> - 5.5x10 <sup>10</sup> spores/mL AS				Serifel	BASF
<i>Bacillus amyloliquifaciens</i> - 1x10 <sup>10</sup> spores/mL AS				Double Nickel 55	UAP
<i>Bacillus mycooides</i> - 40% WG				LifeGard WG	UAP
<i>Bacillus subtilis</i> - 1x10 <sup>8</sup> CFU/g AS				Serenade SOIL	Bayer
<i>Bacillus subtilis</i> - 1.31 x 10 <sup>10</sup> CFU/g WP				Serenade OPTI	Bayer
benzovindiflupyr - 78 g/L EC (F)	difenoconazole - 117g/L EC (F)	propiconazole - 125g/L SC (F)		Apruvia Top	Syngenta
benzovindiflupyr - 100 g/L EC	azoxystrobin - 75 g/L SC (F)			Trivaprop	Syngenta
benzovindiflupyr - 100 g/L EC	azoxystrobin - 250 g/L SC			Elatus	Syngenta
boscalid - 250 g/L SC (F)	prothioconazole - 150 g/L SC (F)			Cotegra	BASF
boscalid - 70% WG	pyraclostrobin - 250 g/L EC			Lance AG	BASF
boscalid - 70% WG				Cantus WDG	BASF
boscalid - 70% WG				Lance WDG	BASF
boscalid - 70% WG				Cabil	Sharda CropChem
boscalid - 70% WG				Shaft	Sharda CropChem
chlorothalonil - 500 g/L SC				Bravo 500	Syngenta
chlorothalonil - 500 g/L SC				Bravo ZN	Syngenta
chlorothalonil - 720 g/L SC				Echo 720	UAP
chlorothalonil - 720 g/L SC				Echo NP	UAP
chlorothalonil - 90% WG				Echo 90WSP	UAP
chlorothalonil - 500 g/L SC (DC)	metalaxyl-M - 480 g/L EC (DC)			Ridomil Gold / Bravo	Syngenta
chlorothalonil - 500 g/L SC (DC)	metalaxyl-M - 480 g/L EC (DC)			Ridomil Gold SL / Bravo	Syngenta
<i>Coniothyrium minitans</i> - 5.3% WG				LALSTOP Contans WG	UAP
copper hydroxide - 24.4% WG				Parasol FL	Nufarm Agriculture
copper hydroxide - 50% WG				Parasol WG	Nufarm Agriculture
copper hydroxide - 50% WG				HyCop	Sharda CropChem
copper octanoate - 1.8% SL				Cueva	Belchim Crop Protection

(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
copper sulphate / copper oxychloride - 53% WP copper sulphate / copper oxychloride - 50% WP copper sulphate / copper oxychloride - 50% WP cyazofamid - 400 g/L SC cymoxanil - 60% WG cymoxanil - 25% WG (F) difenoconazole - 125 g/L SC (F) difenoconazole - 125 g/L SC difenoconazole - 117 g/L EC (F) dimethomorph - 500 g/L SC dimethomorph - 225 g/L SC (F) famoxadone - 25% WG (F) fenamidone - 500 g/L SC floripicoxamid - 50 g/L EC fluzinam - 40% SC fludioxinil - 150 g/L SC fluopyram - 100 g/L SC fluopyram - 125 g/L SC (F) fluopyram - 128 g/L SC fluopyram - 200 g/L SC (F) fluopyram - 200 g/L SC (F) fluopyram - 200 g/L SC (F) fluopyram - 250 g/L SC fluopyram - 500 g/L SC fluoxastrobin - 200 g/L SC fluoxastrobin - 480 g/L SC flutriafol - 125.08 g/L SC fluxapyroxad - 30 g/L EC (F) fluxapyroxad - 167 g/L SC (F) fluxapyroxad - 250 g/L SC (F) fluxapyroxad - 300 g/L SC hydrogen peroxide 27% isofetamid - 400 g/L SC mancozeb - 66.7% WG (F) mancozeb - 75% WG mancozeb - 75% WG mancozeb - 75% WG mancozeb - 480 g/L F mandipropamid - 250 g/L SC mandipropamid - 250 g/L SC mefentrifluconazole - 50 g/L EC mefentrifluconazole - 400 g/L (SC) mefentrifluconazole - 200 g/L (SC) metalaxyl-M - 480 g/L EC metalaxyl-M - 480 g/L SL metalaxyl-M - 480 g/L EC (DC) metalaxyl-M - 480 g/L SL (DC) metconazole - 113 g/L (EC) metconazole - 480g/L SC	famoxadone - 25% WG (F) azoxystrobin - 200 g/L SC (F) pydiflumetofen - 75 g/L SC benzovindiflupyr - 78 g/L EC (F) ametoctradin - 300 g/L SC (F) cymoxanil - 25% WG (F) pyraclostrobin - 100 g/L EC pydiflumetofen - 100 g/L SC prothioconazole - 200 g/L SC pyrimethanil - 375 g/L SC (F) prothioconazole - 176.2 g/L SC prothioconazole - 200 g/L SC (F) prothioconazole - 200 g/L SC (F) penflufen - 106 g/L SC tetraconazole - 200 g/L (ME) pyraclostrobin - 200 g/L EC (F) pyraclostrobin - 333 g/L SC (F) pyraclostrobin - 250 g/L SC (F) peroxyacetic acid - 2.5% zoxamide - 8.43% WG (F) oxathiopiprolin - 30 g/L SC prothioconazole - 100 g/L EC pyraclostrobin - 200 g/L (SC) chlorothalonil - 500 g/L SC (DC) chlorothalonil - 500 g/L SC (DC) prothioconazole - 188 g/L (EC)	tebuconazole - 100 g/L SC trifloxystrobin - 154 g/L SC propiconazole - 125 g/L EC (F)		Copper 53W Corbanza Copper Spray Ranman 400SC Curzate Tanos Quadris Top Miravis Duo Aprovia Top Forum Zampro Tanos Reason 500SC Zetigo PRM Allegra 500F Miravis Star Prosaro PRO Luna Tranquility Delaro Complete Propulse Proline Gold Velum Rise Velum Prime Zolera FX Evito 480 Fullback 125 SC Nexicor Priaxor Dyax Sercadis OxiDate FC Kenja 400SC Gavel 75 DF Dithane Rainshield Manzate Pro-Stick Penncozeb 75DF Manzate Max Revus Orondis Ultra RevPro Cevya Veltyma Ridomil Gold 480 EC Ridomil Gold 480 SL Ridomil Gold / Bravo Ridomil Gold SL / Bravo Sphaerex Quash SC	Loveland Products Sharda CropChem Loveland Products UAP Corteva Agriscience Corteva Agriscience Syngenta Syngenta Syngenta BASF BASF Corteva Agriscience Gowan Corteva Agriscience Syngenta Syngenta Canada Inc Bayer Bayer Bayer Bayer Bayer UPL AgroSolutions UPL AgroSolutions FMC BASF BASF BASF BASF Biosafe Systems Belchim Crop Protection Gowan Corteva Agriscience UPL AgroSolutions UPL AgroSolutions UPL AgroSolutions Syngenta Syngenta BASF Canada BASF BASF



(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
metconazole - 90 g/L EC	pyraclostrobin - 130 g/L EC (F)			<i>Caramba</i>	BASF
metconazole - 80 g/L EC (F)				<i>Twinline</i>	BASF
mono/di-potassium salts of phosphorous acid - 53% SL				<i>Confine Extra</i>	Winfield United
mono/di-potassium salts of phosphorous acid - 53% SL				<i>Rampart</i>	Loveland Products
oxathiopiprolin - 30 g/L SC				<i>Orondis Ultra</i>	Syngenta
penflufen - 106 g/L SC	mandipropamid - 250 g/L SC			<i>Velum Rise</i>	Bayer
penthiopyrad - 200 g/L SC	fluopyram - 250 g/L SC			<i>Fontelis</i>	Corteva Agriscience
picoxystrobin - 187.5 g/L SC	prothioconazole - 62.5 g/L SC			<i>Viatude</i>	Corteva Agriscience
picoxystrobin - 250 g/L SC	propiconazole - 435 g/L EC			<i>Acapela</i>	Corteva Agriscience
picoxystrobin - 250 g/L SC				<i>Cerefit</i>	Belchim Crop Protection
Polyoxin D Zinc Salt - 5.0% SC				<i>Diplomat 55C Fungicide</i>	Canada Inc.
propiconazole - 125 g/L EC (F)	pyraclostrobin - 200 g/L EC (F)	fluxapyroxad - 30 g/L EC (F)		<i>Nexicor</i>	BASF
propiconazole - 125 g/L	pydiflumetofen - 150 g per L			<i>MIRAVIS Ace</i>	Syngenta
propiconazole - 250 g/L EC	azoxystrobin - 250 g/L SC (F)			<i>Quasimodo</i>	AgraCity
propiconazole - 250 g/L EC				<i>Tilt 250E</i>	Syngenta
propiconazole - 250 g/L EC				<i>Mlado</i>	AgraCity
propiconazole - 250 g/L EC				<i>Propel</i>	Syngenta
propiconazole - 250 g/L EC				<i>Propi Super 25 EC</i>	Sharda CropChem
propiconazole - 250 g/L EC				<i>VIKING Propiconazole</i>	Viking Crop Production
propiconazole - 250 g/L EC					Partners Inc.
propiconazole - 432 g/L EC				<i>Bumper 432 EC</i>	ADAMA
propiconazole - 435 g/L EC				<i>Cerefit</i>	Corteva Agriscience
propiconazole - 418 g/L EC				<i>Co-Op Pivot</i>	Federated Co-operatives
propiconazole - 418 g/L EC				<i>Princeton</i>	Sharda CropChem
propiconazole - 418 g/L EC				<i>Fitness</i>	Loveland Products
propiconazole - 418 g/L EC				<i>Pivot 418EC</i>	IPCO
propiconazole - 124 g/L SC (F)				<i>Topnotch</i>	ADAMA
propiconazole - 125 g/L SC (F)				<i>Quilt</i>	Syngenta
propiconazole - 125 g/L SC (F)				<i>MIRAVIS Neo 3005E</i>	Syngenta
propiconazole - 125 g/L SC				<i>Trivapro</i>	Syngenta
propiconazole - 125g/L SC (F)				<i>Viatude</i>	Corteva Agriscience
prothioconazole - 62.5 g/L SC		pydiflumetofen - 75 g per L SC		<i>TIIMOR 240 EC</i>	Bayer
prothioconazole - 80 g/L EC		benzovindiflupyr - 100 g/L EC		<i>Maxentis</i>	Adama Agricultural
prothioconazole - 90 g/L EC					Canada
prothioconazole - 100 g/L EC				<i>RevyPro</i>	BASF Canada
prothioconazole - 125 g/L EC				<i>Advantage Prothio + Teb</i>	Advantage Crop
				<i>250 EC</i>	Protection Inc.
				<i>Shalimar</i>	Sharda CropChem
				<i>StarPro</i>	Albaugh
				<i>VIKING Tromso</i>	Viking Crop Production
					Partners Inc.
				<i>Cotegra</i>	BASF
				<i>Delaro 325 SC</i>	Bayer
				<i>Delaro Complete</i>	Bayer
				<i>Sphaerex</i>	BASF
				<i>Propulse</i>	Bayer
				<i>Proline GOLD</i>	Bayer
				<i>Prosaro PRO</i>	Bayer
				<i>Joust</i>	Nufarm Agriculture
				<i>Soraduo</i>	ADAMA

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
prothioconazole - 250 g/L EC prothioconazole - 250 g/L EC prothioconazole - 480 g/L SC	pydiflumetofen - 200 g/L SC			Miravis Era Soratel Advantage	Syngenta ADAMA Advantage Crop
prothioconazole - 480 g/L SC prothioconazole - 480 g/L SC prothioconazole - 480 g/L SC				Prothioconazole 480 SC Holdfast	Protection Inc. Winfield United
pydiflumetofen - 100 g/L SC pydiflumetofen - 150 g per L pydiflumetofen - 200 g/L SC	fludioxinil - 150 g/L SC propiconazole - 125 g per L			Pavise 480SC Proline 480SC Miravis Star	Bayer Bayer Syngenta Canada Inc
pydiflumetofen - 200 g/L SC pydiflumetofen - 200 g/L SC	prothioconazole - 250 g/L EC azoxystrobin 100 g per L	propiconazole - 125 g per L		MIRAVIS Ace MIRAVIS Bold Miravis Era	Syngenta Syngenta Syngenta
pydiflumetofen - 75 g per L pydiflumetofen - 75 g/L SC pyraclostrobin - 100 g/L EC	difenoconazole - 125 g/L SC florylpicoxamid - 50 g/L EC metconazole - 80 g/L EC (F)			MIRAVIS Neo 300SE MIRAVIS Duo Zetigo PRM	Syngenta Syngenta Syngenta
pyraclostrobin - 130 g/L EC (F) pyraclostrobin - 200 g/L EC (F) pyraclostrobin - 250 g/L EC	propiconazole - 125 g/L EC (F) fluxapyroxad - 30 g/L EC (F)			Twinline Nexicor Headline EC	Corteva Agriscience BASF BASF
pyraclostrobin - 250 g/L EC pyraclostrobin - 250 g/L EC pyraclostrobin - 250 g/L EC	boscalid - 70% WG			MPOWER Spade Raclos Lance AG	BASF BASF AgraCity
pyraclostrobin - 250 g/L EC pyraclostrobin - 250 g/L EC pyraclostrobin - 250 g/L EC	fluxapyroxad - 250 g/L SC (F) tebuconazole - 250 g/L (EW) mefentrifluconazole - 250 g/L (SC)			Preach Dyax Tornado Pro Veltyma	Sharda Cropchem BASF AgraCity BASF
pyraclostrobin - 250 g/L EC				VIKING Pyraclostrobin	Viking Crop Production Partners Inc.
pyraclostrobin - 333 g/L SC (F) pyrimethanil - 400 g/L SC pyrimethanil - 400 g/L SC	fluxapyroxad - 167 g/L SC (F)			Priaxor Scala SC Shape SC	BASF Bayer Sharda Cropchem
pyrimethanil - 375 g/L SC (F) <i>Reynoutria sachalinensis</i> - 20% SC sodium/potassium/ammonium phosphites - 53.6% SL sulphur - 80% WG	fluopyram - 125 g/L SC (F)			Luna Tranquility Regalia Maxx Phostrol	Bayer Marrone Bio Innovations Belchim Crop Protection
tebuconazole - 100 g/L SC tebuconazole - 125 g/L EC	prothioconazole - 200 g/L SC prothioconazole - 125 g/L EC	fluopyram - 100 g/L SC		Cosavet DF Edge Prosaro PRO Advantage Prothio + Teb 250 EC	Belchim Crop Protection Bayer Advantage Crop Protection Inc.
tebuconazole - 125 g/L EC (F) tebuconazole - 125 g/L EC (F) tebuconazole - 125 g/L EC (F) tebuconazole - 125 g/L EC	prothioconazole - 125 g/L EC (F) prothioconazole - 125 g/L EC (F) prothioconazole - 125 g/L EC (F) prothioconazole - 125 g/L EC			Shalimar StarPro Prosaro XTR VIKING Tromso	Sharda Cropchem Albaugh Bayer Viking Crop Production Partners Inc.
tebuconazole - 160 g/L EC tebuconazole - 200 g/L SC tebuconazole - 250 g/L EW	prothioconazole - 80 g/L EC azoxystrobin - 120 g/L SC			Tilmore 240 EC Custodia FBN Tebuconazole 250	Bayer ADAMA Farmers Business Networks Canada, Inc.
tebuconazole - 250 g/L EC				Advantage Tebuconazole 250 Toledo 250 EW	Advantage Crop Protection Rotam North America, Inc.
tebuconazole - 250 g/L EC				Tebbie	Sharda Cropchem



(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
tebuconazole - 250 g/L EW tebuconazole - 250 g/L (EW) tebuconazole - 250 g/L EC	pyraclostrobin - 250 g/L (EC)			Tornado Tornado Pro VIKING Tebuconazole	AgraCity AgraCity Viking Crop Production Partners Inc. ADAMA ADAMA
tebuconazole - 430 g/L SC tebuconazole - 430 g/L SC tebuconazole - 432 g/L SC tebuconazole - 432 g/L SC tebuconazole - 432 g/L SC	prothioconazole - 250 g/L EC			Orius 430 SC Soraduo Hornet 432 F Palliser Roxar	Nufarm Agriculture Inc. Bayer UPL AgroSolutions UPL AgroSolutions
tetraconazole - 200 g/L (ME) tetraconazole - 200 g/L (ME) trifloxystrobin - 150 g/L SC (F) trifloxystrobin - 154 g/L SC	fluoxastrobin - 200 g/L (ME) prothioconazole - 175 g/L SC (F) fluopyram - 128 g/L SC	Prothioconazole - 176.2 g/L SC		Zolera FX Delaro 325 SC Delaro Complete  Gavel 75 DF	Bayer Bayer Bayer Gowan
zoxamide - 8.43% WG (F)	mancozeb - 66.7% WG (F)				

## Seed Treatments

(Component 1) Active Ingredient** - Formulation	(Component 2) Active Ingredient** - Formulation	(Component 3) Active Ingredient** - Formulation	(Component 4) Active Ingredient** - Formulation	Product	Company
azoxystrobin - 143 g/L SC azoxystrobin - 390 g/L SC azoxystrobin - 1.33% FS azoxystrobin - 1.33% FS	fludioxonil - 143 g/L SC  fludioxonil - 3.32% FS fludioxonil - 3.32% FS	difenoconazole - 112 g/L SC  metalaxyl-m+s - 2.65% FS metalaxyl-m+s - 2.65% FS		Stadium AZteroid FC Maxim Quattro Cruiser Maxx Corn	Syngenta UAP Syngenta Syngenta
broflanilide - 100 g/L SC broflanilide - 16.7 g/L SC	triticonazole - 16.7 g/L SC	metalaxyl - 10.0 g/L SC		Cimegra Teraxxa F4	BASF BASF
captan - 30% FS carbathiin - 87.5 g/L FS carbathiin - 133.33 g/L FS carbathiin - 15.59% FS carbathiin - 15.59% FS carbathiin - 15.59% FS clothianidin - 600 g/L FS	ipconazole - 9.38 g/L FS metalaxyl - 13.33 g/L FS thiram - 13.25% FS thiram - 13.25% FS thiram - 13.25% FS	ipconazole - 5.0 g/L FS		Agrox FL Rancona VRS Rancona Trio Vitalfo 280 Vitalfo SP Fungicide Vitalfo Fungicide Nipsit INSIDE 600	Norac Concepts UPL AgroSolutions UPL AgroSolutions UPL AgroSolutions IPCO IPCO Valent
clothianidin - 600 g/L FS clothianidin - 600 g/L FS clothianidin - 600 g/L FS clothianidin - 30.7 g/L FS	metalaxyl - 9.24 g/L FS	metconazole - 4.92 g/L FS		Insecticide Poncho 600FS Titan Poncho® 600 FS Nipsit SUITE Cereals OF Seed Protectant	BASF BASF BASF BASF Valent
clothianidin - 290 g/L FS cyantraniliprole - 600 g/L FS cyantraniliprole - 625 g/L FS difenoconazole - 112 g/L SC difenoconazole - 123 g/L FS	metalaxyl - 7.15 g/L FS  fludioxonil - 143 g/L SC fludioxonil - 62.5 g/L FS	trifloxystrobin - 7.15 g/L FS	penflufen - 10.7 g/L FS	Forzenza Lumiderm Stadium Cruiser Maxx Potato Extreme Helix Vibrance Maxim D	Bayer Syngenta Corteva Agriscience Syngenta Syngenta Syngenta
difenoconazole - 16 g/L FS	fludioxonil - 1.7 g/L FS	thiamethoxam - 269 g/L FS	metalaxyl- m+s:sedaxane-5:3:4 g/L FS		Syngenta
difenoconazole - 19.4 g/L FS	fludioxonil - 19.4 g/L FS				Syngenta

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
difenoconazole - 3.37 % FS difenoconazole - 36.3 g/L FS difenoconazole - 36.8 g/L FS difenoconazole - 36.9 g/L FS	metalaxyl-m+s - 0.27% FS metalaxyl - 12.6 g/L FS fludioxonil - 7.6 g/L FS fludioxonil - 7.7 g/L FS	tebuconazole - 4.6 g/L FS metalaxyl-m+s - 9.2 g/L FS thiamethoxam - 61.5 g/L FS	sedaxane - 15.4 g/L FS metalaxyl-m+s: sedaxane-9.2: 15.4 g/L FS	Interest Forte Straxan Vibrance Quattro Cruiser Vibrance Quattro	Sharda Cropchem Corteva Syngenta Syngenta
difenoconazole - 77.2 g/L FS difenoconazole - 7.73 % FS	mandipropamid - 154.3 g/L FS metalaxyl-m+s - 1.93% FS	sedaxane - 77.2 g/L FS		Vibrance Ultra Potato Dividend Extreme	Syngenta Syngenta
dimethyl benzyl ammonium chloride - 10% Liquid ethaboxam - 24.9 g/L FS ethaboxam - 383 g/L FS ethaboxam - 383 g/L FS	mandestrobin - 33.2 g/L FS fludioxonil - 25 g/L FS	metalaxyl - 13.3 g/L FS metalaxyl-m+s - 37.5 g/L	sedaxane - 50 g/L FS	Fungicide General Storage Disinfectant Intego Pulse INTEGO Solo Fungicide Vibrance Maxx with INTEGO Seed Treatment	Ag-Services Valent Valent Syngenta
ethaboxam - 23.9 g/L FS fenamidone - 500g/L SC fludioxonil - 0.5% DS fludioxonil - 0.5% DS fludioxonil - 0.73% FS fludioxonil - 0.73% FS fludioxonil - 1.12% FS fludioxonil - 1.7 g/L FS	mandestrobin - 31.7 g/L FS mancozeb - 5.7% DS metalaxyl-m+s - 1.10% FS metalaxyl-m+s - 1.10% FS metalaxyl-m+s - 1.7% FS metalaxyl-m+s - 5 g/L FS	metalaxyl - 12.7 g/L FS	inpyrfluxam - 15.9 g/L FS	Zeltera Pulse Reason 500 SC Maxim PSP Maxim MZ PSP Apron Maxx RTA Vibrance Maxx RTA Cruiser Maxx Beans Helix Vibrance	Nufarm Gowan Syngenta Syngenta Syngenta Syngenta Syngenta Syngenta
fludioxonil - 143 g/L SC fludioxonil - 19.4 g/L FS fludioxonil - 24.8 g/L FS fludioxonil - 25 g/L FS fludioxonil - 25 g/L FS fludioxonil - 25 g/L FS	difenoconazole - 112 g/L SC difenoconazole - 19.4 g/L FS metalaxyl-m+s - 149.3 g/L FS metalaxyl-m+s - 20 g/L FS metalaxyl-m+s - 37.5 g/L FS metalaxyl-m+s - 37.5 g/L FS	azoxystrobin - 143 g/L SC picarbutrazox - 400 g/L FS thiabendazole - 150 g/L FS sedaxane - 50 g/L FS sedaxane - 50 g/L FS	sedaxane - 24.8 g/L FS ethaboxam - 383 g/L FS	Stadium Maxim D Vayantis IV Apron Advance Vibrance Maxx RFC Vibrance Maxx RFC with INTEGO Seed Treatment Maxim Quattro Cruiser Maxx Corn	Syngenta Syngenta Syngenta Syngenta Syngenta Syngenta Syngenta Syngenta
fludioxonil - 3.32% FS fludioxonil - 3.32% FS	metalaxyl-m+s - 2.65% FS metalaxyl-m+s - 2.65% FS	thiabendazole - 26.5% FS thiamethoxam - 47.6% FS	azoxystrobin - 1.33% FS azoxystrobin; thiabendazole- 1.33%; 26.5% FS		Syngenta Syngenta
fludioxonil - 62.5 g/L FS	difenoconazole - 123 g/L FS	thiamethoxam - 250 g/L FS		Cruiser Maxx Potato Extreme	Syngenta
fludioxonil - 7.6 g/L FS fludioxonil - 7.7 g/L FS	metalaxyl-m+s - 9.2 g/L FS picarbutrazox - 7.7 g/L FS	sedaxane - 15.4 g/L FS thiabendazole - 46.2 g/L FS	difenoconazole - 36.8 g/L FS metalaxyl-m+s - 11.4 g/L FS sedaxane - 15.4 g/L FS	Vibrance Quattro Vibrance Total	Syngenta Syngenta
fludioxonil - 7.7 g/L FS	metalaxyl-m+s - 9.2 g/L FS	thiamethoxam - 61.5 g/L FS	sedaxane: difenoconazole- 15.4:36.9 g/L FS	Cruiser Vibrance Quattro	Syngenta
flupyradifurone - 480 g/L FS fluxapyroxad - 16.7 g/L FS fluxapyroxad - 8.35 g/L FS fluxapyroxad: pyraclostrobin - 8.35 g/L: 16.7 g/L SC hydrogen peroxide - 27% LS imidacloprid - 240 g/L FS imidacloprid - 600 g/L FS imidacloprid - 600 g/L FS imidacloprid - 600 g/L FS imidacloprid - 600 g/L FS	metalaxyl - 13.3 g/L FS pyraclostrobin - 16.7 g/L FS brotianilide - 16.7 g/L SC	pyraclostrobin - 16.7 g/L FS triticonazole - 16.7 g/L FS triticonazole - 16.7 g/L SC	BUTE0 start 480 FS Insure Pulse Insure Cereal FX4 Teraxxa F4		Bayer BASF BASF BASF
imidacloprid - 600 g/L FS imidacloprid - 600 g/L FS imidacloprid - 600 g/L FS imidacloprid - 600 g/L FS	metalaxyl - 6.2 g/L FS metalaxyl - 317 g/L FS	tebuconazole - 3.0 g/L FS penflufen - 154 g/L FS	prothioconazole-15.4 g/L FS trifloxystrobin - 154 g/L FS	StorOx Alias 240SC Sombro 600FS Stress Shield 600 Raxil PRO SHIELD Trilex EverGol SHIELD	Biosafe Systems ADAMA ADAMA Bayer Bayer Bayer



(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
Inpyrflaxam - 15.9 g/L ipconazole - 4.61 g/L FS ipconazole - 9.38 g/L FS ipconazole - 5.0 g/L FS ipconazole - 4.61 g/L FS mancozeb - 16% DS mancozeb - 16% DS mancozeb - 16% DS mancozeb - 5.7% DS mandestrobin - 31.7 g/L FS mandestrobin - 33.2 g/L FS mandipropamid - 250 g/L FS mandipropamid - 154.3 g/L FS metalaxyl - 10 g/L FS metalaxyl - 10 g/L FS metalaxyl - 10.8 g/L FS metalaxyl - 10.8 g/L FS	ethaboxam - 23.9 g/L FS metalaxyl - 6.15 g/L FS carbathiin - 87.5 g/L FS carbathiin - 133.33 g/L FS metalaxyl - 6.15 g/L FS  fludioxonil - 0.5% DS ethaboxam - 23.9 g/L FS ethaboxam - 24.9 g/L FS  difenoconazole - 77.2 g/L FS pyraclostrobin - 17 g/L FS pyraclostrobin - 16.7 g/L FS trifloxystrobin - 13.5 g/L FS trifloxystrobin - 13.5 g/L FS  fluxapyroxad; pyraclostrobin - 8.35 g/L; 16.7 g/L SC tebuconazole - 4.6 g/L FS ethaboxam - 23.9 g/L FS pyraclostrobin - 16.7 g/L FS ipconazole - 5.0 g/L FS mandestrobin - 33.2 g/L FS  trifloxystrobin - 15.4 g/L FS trifloxystrobin - 15.4 g/L FS ipconazole - 4.61 g/L FS prothioconazole - 76.8 g/L FS tebuconazole - 3.0 g/L FS tebuconazole - 3.0 g/L FS  tebuconazole - 3.0 g/L FS tebuconazole - 5.0 g/L FS trifloxystrobin - 7.15 g/L FS metconazole - 4.92 g/L FS  sedaxane - 15.4 g/L FS	mandestrobin - 31.7 g/L FS  metalaxyl - 13.33 g/L FS  Inpyrflaxam - 15.9 g/L metalaxyl - 13.3 g/L FS  sedaxane - 77.2 g/L FS triticonazole - 17 g/L FS triticonazole - 16.7 g/L FS  broflanilide - 16.7 g/L SC  difenoconazole - 36.3 g/L FS Inpyrflaxam - 15.9 g/L fluxapyroxad - 16.7 g/L FS carbathiin - 133.33 g/L FS ethaboxam - 24.9 g/L FS  penflufen - 15.4 g/L FS penflufen - 15.4 g/L FS  penflufen - 38.4 g/L FS imidacloprid - 600 g/L FS prothioconazole - 15.4 g/L FS  prothioconazole - 15.4 g/L FS clothianidin - 290 g/L FS clothianidin - 30.7 g/L FS  fludioxonil - 7.7 g/L FS	metalaxyl - 12.7 g/L FS   metalaxyl - 12.7 g/L FS  fluxapyroxad - 8.35 g/L FS  triticonazole - 16.7 g/L SC  mandestrobin - 31.7 g/L FS  imidacloprid - 600 g/L FS  prothioconazole - 15.4 g/L FS Lixar PRO  penflufen - 10.7 g/L FS  picarbutrazox - 7.7 g/L FS thiabendazole - 46.2 g/L FS	Zeltera Pulse Rancona Pinnacle Rancona VRS Rancona Trio Cover 2 Solan MZ Tuberseal Potato ST16 Maxim MZ PSP Zeltera Pulse Intego Pulse Revus Vibrance Ultra Potato Insure Cereal Insure Cereal FX4 Obex VIKING Grimstad Teraxxa F4  Straxan Zeltera Pulse Insure Pulse Rancona Trio Intego Pulse Allegiance FL Belmont 2.7FS Trilex Component B Telex  Trilex EverGol Trilex EverGol SHIELD Cover 2 EverGol Energy Raxil PRO SHIELD Lixar PRO  Raxil PRO Sharda METEB 11ST Prosper EverGol Nipsit SUITE Cereals OF Seed Protectant Vibrance Total  Dividend Extreme Fungicide Interest Forte Apron Maxx RTA Vibrance Maxx RTA Cruiser Maxx Beans Dividend Extreme Fungicide	Valent UPL AgroSolutions UPL AgroSolutions UPL AgroSolutions Loveland Products Norac Concepts Norac Concepts Loveland Products Syngenta Valent Valent Syngenta Syngenta BASF BASF AgraCity Crop & Nutrition Viking Crop Production Partners Inc. BASF  Corteva Valent BASF UPL AgroSolutions Valent Bayer UPL AgroSolutions Bayer Bayer Sharda Cropchem Limited Bayer Bayer Loveland Products Bayer Bayer Sharda Cropchem Limited Bayer Sharda Cropchem Bayer Valent Syngenta Syngenta Sharda Cropchem Syngenta Syngenta Syngenta Syngenta

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
metalaxyl-m+s - 2.65% FS metalaxyl-m+s - 2.65% FS	fludioxonil - 3.32% FS fludioxonil - 3.32% FS	thiabendazole - 26.5% FS thiamethoxam - 47.6% FS	azoxystrobin - 1.33% FS - 1.33%; 26.5% FS	Maxim Quattro Cruiser Maxx Corn	Syngenta Syngenta
metalaxyl-m+s - 20 g/L FS metalaxyl-m+s - 37.5 g/L FS metalaxyl-m+s - 37.5 g/L FS	fludioxonil - 25 g/L FS fludioxonil - 25 g/L FS fludioxonil - 25 g/L FS	thiabendazole - 150 g/L FS sedaxane - 50 g/L FS sedaxane - 50 g/L FS	ethaboxam - 383 g/L FS	Apron Advance Vibrance Maxx RFC Vibrance Maxx RFC with INTEGO Seed Treatment	Syngenta Syngenta Syngenta Valent Syngenta
metalaxyl-m+s - 5 g/L FS	fludioxonil - 1.7 g/L FS	thiamethoxam - 269 g/L FS	sedaxane: difenoconazole- 3.4:16 g/L FS	Helix Vibrance	Syngenta
metalaxyl-m+s - 9.2 g/L FS metalaxyl-m+s - 9.2 g/L FS	fludioxonil - 7.6 g/L FS fludioxonil - 7.7 g/L FS	sedaxane - 15.4 g/L FS thiamethoxam - 61.5 g/L FS	sedaxane: difenoconazole- 15.4:36.9 g/L FS	Vibrance Quattro Cruiser Vibrance Quattro	Syngenta Syngenta
metalaxyl-m+s - 149.3 g/L FS metconazole - 4.92 g/L FS	fludioxonil - 24.8 g/L FS metalaxyl - 9.24 g/L FS	picarbutrazox - 400 g/L FS clothianidin - 30.7 g/L FS	sedaxane - 24.8 g/L FS	Vayantis IV Nipsit SUITE Cereals OF Seed Protectant Confine Extra	Syngenta Valent
mono/di-potassium salts of phosphorous acid - 53% SC mono/di-potassium salts of phosphorous acid - 53% SC oxathiapiprolin - 200g/L FS				Rampart	Winfield Solutions
penflufen - 10.7 g/L FS penflufen - 154 g/L FS penflufen - 154 g/L FS penflufen - 100 g/L FS penflufen - 38.4 g/L FS penflufen - 154 g/L FS	metalaxyl - 7.15 g/L FS metalaxyl - 317 g/L FS metalaxyl - 317 g/L FS prothioconazole - 18 g/L FS prothioconazole - 76.8 g/L FS trifloxystrobin - 154 g/L FS fludioxonil - 24.8 g/L FS thiabendazole - 46.2 g/L FS	trifloxystrobin - 7.15 g/L FS trifloxystrobin - 154 g/L FS trifloxystrobin - 154 g/L FS metalaxyl - 61.4 g/L FS	clothianidin - 290 g/L FS imidacloprid - 600 g/L FS	Prosper EverGol Trilex EverGol Trilex EverGol SHIELD Emesto Silver EverGol Energy Trilex Component A Vayantis IV Vibrance Total	Corteva Agriscience Bayer Bayer Bayer Bayer Bayer Syngenta Syngenta
picarbutrazox - 400 g/L FS picarbutrazox - 7.7 g/L FS	fludioxonil - 24.8 g/L FS metalaxyl - 61.4 g/L FS metalaxyl - 6.2 g/L FS	penflufen - 38.4 g/L FS tebuconazole - 3.0 g/L FS	sedaxane - 24.8 g/L FS sedaxane - 15.4 g/L FS fludioxonil - 7.7 g/L FS	EverGol Energy Lixar PRO	Bayer Sharda Cropchem Limited
prothioconazole - 76.8 g/L FS prothioconazole - 15.4 g/L FS prothioconazole - 15.4 g/L FS prothioconazole - 18 g/L FS pydiflumetofen 500 g/L FS pyraclostrobin - 17 g/L FS pyraclostrobin - 16.7 g/L FS pyraclostrobin - 16.7 g/L FS pyraclostrobin: fluxapyroxad - 16.7 g/L SC: 8.35 g/L saponins of <i>Chenopodium quinoa</i> - 63.02% WS	metalaxyl - 6.2 g/L FS metalaxyl - 6.2 g/L FS penflufen - 100 g/L FS metalaxyl - 10 g/L FS metalaxyl - 13.3 g/L FS fluxapyroxad 8.35g/L FS bromilanilide - 16.7 g/L SC	tebuconazole - 3.0 g/L FS tebuconazole - 3.0 g/L FS triticonazole - 17 g/L FS fluxapyroxad - 16.7 g/L FS metalaxyl - 10 g/L FS triticonazole - 16.7 g/L SC	imidaclorid - 600 g/L FS	Raxil PRO Raxil PRO SHIELD Emesto Silver Insure Cereal Insure Pulse Insure Cereal FX4 Teraxxa F4	Bayer Bayer Bayer Syngenta BASF BASF BASF BASF
sedaxane - 15.4 g/L FS	metalaxyl-m+s - 9.2 g/L FS metalaxyl-m+s - 9.2 g/L FS	difenoconazole - 36.8 g/L FS difenoconazole - 36.9 g/L FS	fludioxonil - 7.6 g/L FS fludioxonil: thiamethoxam - 7.7:61.5 g/L FS	Vibrance Quattro Cruiser Vibrance Quattro	Syngenta
sedaxane - 24.8 g/L FS sedaxane - 3.4 g/L FS	fludioxonil - 24.8 g/L FS metalaxyl-m+s - 5 g/L FS	metalaxyl-m+s - 149.3 g/L FS difenoconazole - 16 g/L FS	picarbutrazox - 400 g/L FS fludioxonil: thiamethoxam- 1.7:269 g/L FS	Vayantis IV Helix Vibrance	Syngenta Syngenta
sedaxane - 50 g/L FS sedaxane - 50 g/L FS	metalaxyl-m+s - 37.5 g/L FS metalaxyl-m+s - 37.5 g/L FS	fludioxonil - 25 g/L FS fludioxonil - 25 g/L FS	ethaboxam - 383 g/L FS	Vibrance Maxx RFC Vibrance Maxx RFC with INTEGO Seed Treatment	Syngenta Syngenta





(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
sedaxane - 500 g/L FS				Vibrance 500FS	Syngenta
sedaxane - 500 g/L FS	metalaxyl-m+s - 1.10% FS	fludioxonil - 0.73% FS	thiamethoxam - 22.6% FS	Vibrance Maxx RTA	Syngenta
sedaxane - 500 g/L FS	metalaxyl-m+s - 1.7% FS	fludioxonil - 1.12% FS		Cruiser Maxx	Syngenta
sulfoxaflor - 500 g/L FS				Vibrance Beans	Syngenta
sedaxane - 15.4 g/L FS	fludioxonil - 7.7 g/L FS	picarbutrazox - 7.7 g/L FS	thiabendazole - 46.2 g/L FS	Rascendo	Syngenta
sedaxane - 77.2 g/L FS			metalaxyl-m+s - 11.4 g/L FS	Vibrance Total	Syngenta
thiabendazole - 150 g/L FS	mandipropamid - 154.3 g/L FS	difenoconazole - 77.2 g/L FS		Vibrance Ultra Potato	Syngenta
thiamethoxam - 22.6% FS	metalaxyl-m+s - 20 g/L FS	fludioxonil - 25 g/L FS		Apron Advance	Syngenta
thiamethoxam - 240 g/L FS	fludioxonil - 1.12% FS	metalaxyl-m+s - 1.7% FS		Cruiser Maxx Beans	Syngenta
thiabendazole - 26.5% FS	metalaxyl-m+s - 2.65% FS	fludioxonil - 3.32% FS	azoxystrobin - 1.33% FS	Actara 240SC	Syngenta
thiabendazole - 26.5% FS	metalaxyl-m+s - 2.65% FS	fludioxonil - 3.32% FS	thiamethoxam - 1.33% FS	Maxim Quattro	Syngenta
tebuconazole - 4.6 g/L FS	difenoconazole - 36.3 g/L FS	metalaxyl - 12.6 g/L FS	prothioconazole - 15.4 g/L FS	Cruiser Maxx Corn	Syngenta
tebuconazole - 3.0 g/L FS	metalaxyl - 6.2 g/L FS	imidacloprid - 600 g/L FS		Straxan	Corteva
tebuconazole - 3.0 g/L FS	metalaxyl - 6.2 g/L FS	prothioconazole - 15.4 g/L FS		Raxil PRO SHIELD	Bayer
tebuconazole - 5.0 g/L FS	metalaxyl - 6.6 g/L FS	sedaxane - 15.4 g/L FS		Raxil PRO	Bayer
thiabendazole - 46.2 g/L FS	metalaxyl-m+s - 11.4 g/L FS			Lixar PRO	Sharda Cropchem
thiabendazole - 500 g/L SC				Sharda METEB 11ST	Limited
thiabendazole - 500 g/L SC				Vibrance Total	Sharda Cropchem
thiamethoxam - 250 g/L FS				Tibet	Syngenta
thiamethoxam - 269 g/L FS	fludioxonil - 62.5 g/L FS	difenoconazole - 123 g/L FS		Mertect SC	Limited
thiamethoxam - 47.6% FS	fludioxonil - 1.7 g/L FS	metalaxyl-m+s - 5 g/L FS		Cruiser Maxx	Syngenta
thiamethoxam - 47.6% FS	fludioxonil - 3.32% FS	metalaxyl-m+s - 2.65% FS		Potato Extreme	Syngenta
thiamethoxam - 61.5 g/L FS	fludioxonil - 7.7 g/L FS	metalaxyl-m+s - 9.2 g/L FS		Helix Vibrance	Syngenta
thiophanate-methyl - 10% DS	carbathiin - 15.59% FS	carbathiin - 15.59% FS		Cruiser 5FS	Syngenta
thiram - 13.25% FS	carbathiin - 15.59% FS	carbathiin - 15.59% FS		Cruiser Maxx Corn	Syngenta
thiram - 13.25% FS	carbathiin - 15.59% FS	carbathiin - 15.59% FS		Cruiser Vibrance Quattro	Syngenta
thiram - 13.25% FS	metalaxyl - 10.8 g/L FS	metalaxyl - 10.8 g/L FS		Senator PSPT	Belchim Crop Protection
trifloxystrobin - 13.5 g/L FS	metalaxyl - 10.8 g/L FS	metalaxyl - 10.8 g/L FS		Vitaflo 280	UPL AgroSolutions
trifloxystrobin - 13.5 g/L FS	metalaxyl - 7.15 g/L FS	metalaxyl - 7.15 g/L FS		Vitaflo SP Fungicide	IPCO
trifloxystrobin - 154 g/L FS	metalaxyl - 317 g/L FS	penflufen - 154 g/L FS		Vitaflo Fungicide	IPCO
trifloxystrobin - 154 g/L FS	penflufen - 154 g/L FS	pyraclostrobin - 17 g/L FS		Obex	AgraCity Crop & Nutrition
triconazole - 17 g/L FS	pyraclostrobin - 17 g/L FS	fluxapyroxad - 8.35g/L FS		VIKING Grimstad	Partners Inc.
triconazole - 16.7 g/L FS	fluxapyroxad - 8.35g/L FS	metalaxyl - 10.0 g/L SC		Prosper EverGol	Bayer
triconazole - 16.7 g/L FS	metalaxyl - 10.0 g/L SC			Trilex EverGol	Bayer
				Trilex Component A	Bayer
				Insure Cereal	BASF
				Insure Cereal FX4	BASF
				Teraxxa F4	BASF



## Insecticides

(Component 1) Active Ingredient* - Formulation	(Component 2) Active Ingredient* - Formulation	(Component 3) Active Ingredient* - Formulation	(Component 4) Active Ingredient* - Formulation	Product	Company
abamectin - 28.5 g/L	cyantraniliprole - 135 g/L SC			Minecto Pro	Syngenta
abamectin - 84 g/L SC				Agri-Mek SC	Syngenta
acetamiprid - 70% WP				Aceta 70 WP	Sharda CropChem
acetamiprid - 70% WP				Assail	Belchim Crop Protection
acetamiprid - 80 g/L	novaluron - 100 g/L EC			Cormoran	ADAMA
afidopyropen - 50 g/L				Sefina	BASF
aluminum phosphide - 55% tablets				Fumitoxin	Degesch America
aluminum phosphide - 55% tablets				Phostoxin	Degesch America
bacillus thuringiensis - 12.7 billion CLU/L				Bioprotec CAF	AEF Global
CLU/L				Bioprotec PLUS	AEF Global
CLU/L				Dipel 2X DF	Valent BioSciences
<i>bacillus thuringiensis</i> - 32 billion CLU/kg WG				Bio Titan WP	Tessenderlo Kerley
<i>Beauveria bassiana strain ANT-03</i> - at least 1 X 10 <sup>10</sup> spores (conidia)/g				Cimegra	BASF
broflanilide - 100 g/L SC				Eco Bran	Peacock Industries
carbaryl - 2% spreadable bran bait				Sevin XLR	Univar Solutions
carbaryl - 466 g/L				Coragen	FMC
chlorantraniliprole - 200 g/L SC				Coragen Max	FMC
chlorantraniliprole - 600 g/L SC				Clutch	Valent
clothianidin - 50% WG				Exirel	FMC
cyantraniliprole - 100 g/L				Minecto Pro	Syngenta
cyantraniliprole - 135 g/L SC	abamectin - 28.5 g/L			Minecto Duo	Syngenta
cyantraniliprole - 20% WG	thiamethoxam - 20%			Verimark	FMC
cyantraniliprole - 200 g/L SC				Harvanta 50 SL	Belchim Crop Protection
cyclopyrifos - 50 g/L				Ship 250 EC	Sharda CropChem
cypermethrin - 250 g/L				UP-Cyde	UPL AgroSolutions
cypermethrin - 250 g/L EC				Concept	Bayer
deltamethrin - 10 g/L SC				Decis 100 EC	Bayer
deltamethrin - 100 g/L EC	imidacloprid - 75 g/L SC			Advantage Deltamethrin	Advantage Crop
deltamethrin - 50 g/L EC				5 EC	Protection
delthamethrin - 25 g/L EC				Poleci 2.5 EC Western	Sharda CropChem
diatomaceous earth - 0.9				Protect-It	Hedley Technologies
diatomaceous earth - 90%				Insecto	Natural Insecto Products
dimethoate - 480 g/L EC				Cygon 480-Ag	FMC
dimethoate - 480 g/L EC				Diamante 4	Sharda CropChem
dimethoate - 480 g/L EC				Lagon 480E	Loveland Products
ferric phosphate - 0.76 % granules				Sluggo Professional	Belchim Crop Protection
flonicamid - 50% WP				Beleaf	FMC
flonicamid - 50% WG				Carbine	FMC
flupyradifurone - 200 g/L				Sivanto Prime	Bayer
imidacloprid - 240 g/L SC				Admire 240	Bayer
imidacloprid - 75 g/L SC	deltamethrin - 10 g/L SC			Concept	Bayer
lambda-cyhalothrin - 120 g/L EC				Labamba	Sharda CropChem
lambda-cyhalothrin - 120 g/L EC				Matador	Syngenta
lambda-cyhalothrin - 120 g/L EC				Silencer 120 EC	ADAMA
lambda-cyhalothrin 120 g/L EC				Zivata	ADAMA
lambda-cyhalothrin - 50 g/L	chlorantraniliprole - 100 g/L			Volliam Xpress	Syngenta
malathion - 85%				Malathion 85E	Loveland Products



## Key to Product Pages

### Pesticide Product Name

This field lists the pesticide product name. Where there is only one product the commercial “trade” name is given. Where more than one company sells pesticides with the same combination of active ingredients the “generic” (active ingredient) name is given.

If the active ingredients are all in a common formulation (liquid, granule, etc.) the generic name will appear as ‘Ingredient A/ Ingredient B’ and if the active ingredients are in separate containers to be mixed in the sprayer the names are given as ‘Ingredient A + Ingredient B’.

### Pesticide Resistance Group #

*This area will the pesticide active ingredient(s) to the mode of action that ingredient uses.*

### Company:

This section identifies the company (or companies) that manufacture or market this crop protection product (or generic equivalents) in Canada as well as the PCP# for that (those) product(s). See page 8 for more information on PCP numbers. PCP#s are given as ‘(PCP#XXXXX)’ where XXXXX is a four or five digit number unique to that product. In some cases, where there are multiple components with separate PCP numbers, the PCP number will be provided below under ‘Formulation:’

### Formulation:

This section gives information on the active ingredient and its concentration in the product as well as information on formulation type and packaging types and configurations. Formulation strength (or concentrations) are given in % by weight for dry formulations and g/L for liquid formulations. PCP numbers may also be give for some products (see above).

### Crops and Staging:\*

This section indicates on which crops the product may be used and what stage of crop development it should be applied at. Rates may also be included in this section if they vary between crop types or crop stage.

*\*\*This section will also indicate which crops are registered under the User Requested Minor Use Label Expansion (URMULE) program. Some companies, as a condition of placing these minor crops on their labels request, that users of their product on these crops do so at their own risk because the registration was approved with information the company did not produce.*

*These crops will be flagged separately from the main crops.*

### Pest (Diseases, Insects, Weeds) and Staging:

This section indicates the pests (Diseases, Insects, or Weeds) that are indicated on the product label as controlled or suppressed, as well as any specifics on the timing of application relative to the pest stage if required. Rates may also be included in this section if they differ for different pests or stage of pest.

### Rates:

The rates provided in this section are given in the amount of product required per acre and the number of acres treated per package unit where possible. This section will also indicate any adjuvants that are to be used in conjunction with the product and the rate of that adjuvant.

This section will not be present if rates have been integrated into either of the previous **Crops** or **Pest** sections.

### Application Information:

- **Water Volume:** This section indicates the minimum carrier water volume to be used to apply the product. Using less than the recommended minimum carrier application volume can negatively affect pesticide performance, particularly with contact pesticides and when using low drift nozzles.
- **Nozzles and Pressure:** This section indicates if there are any particular nozzles that should or should not be used to apply the product. Pressures indicated reflect those for conventional nozzles. Low drift nozzles may require higher pressures for proper performance. A general statement of “Use nozzles and pressures designed to deliver proper coverage with **ASABE** \_\_\_ droplets” indicating the ideal droplet sizes to allow for the combination of lowest drift potential and best performance from the pesticide. ASABE refers to the American Society of Agricultural Engineers who have set standards a series of droplet measurements (in microns or micrometres) that classify droplet sizes from ‘fine’ to ‘very coarse’.

## How it Works:

This section typically refers to the page where a general description of the various modes of action of either herbicide, fungicides or insecticides.

## Effects of Growing Conditions:

This section summarizes any adverse conditions that will affect the biological function of the crop or the target pest and therefore possibly impact the product's performance. In most cases both crop and target pest must be growing or functioning normally for pesticides to provide expected performance and/or crop tolerance. Adverse weather conditions such as extreme heat, cold, drought or flooding can slow or stop the biological processes in the crop or pest. These biological processes in the crop allow the pesticide to be degraded quickly. If biological processes that are attacked by the pesticide, and under normal conditions would kill the pest, are not functioning normally the pest may be able to rid itself of the pesticide before dying and recover from the application.

## Tank Mixes:

This section indicates which other pesticides the pesticide label indicates are registered for use as tank mix combinations with this pesticide.

Common mixes may include:

### Herbicides:

- (Subtitles may indicate specific crops or condition restrictions:)

### Insecticides:

### Fungicides:

### Fertilizers:

There may be additional pesticides that are registered but not listed on this product's label. Other pesticides may have this product listed as a mix option on their labels. The note below (**in bold**) directs users to a chart inside the back cover that show all available mixes for this pesticide. The product listed on the left column of the chart is the product that supports the mix. Mixes supported by both products are marked with an 'X'. Mixes supported by only one of the products is indicated by an arrow pointing to the left column.

*Included in the tank mix section in non-bolded italics may be any precautions against the mixing of pesticides which will have adverse reactions such as crop injury, reduced pest control or unusual increased danger in the use of the product.*

**Note: The above mixes are those listed on the pesticide label only. To check for other possible mixes see the blue fold out chart inside the back cover.**

## Restrictions:

Since most pesticides have a capacity to injure neighboring plants, wildlife or people, they will come with restrictions on their use in order to prevent this unintentional damage. Misuse of pesticides may result in as little as temporary or superficial damage to plants or a slight irritation to the eyes or nose, or could also result in poor performance of the pesticide, severe injury and/or yield loss to very sensitive plants and/or unacceptable residues in agricultural commodities, and/or serious illness or death of non-target organism or people. It is important to comply with product restrictions in order to minimize the impact of the pesticide used on non-target organisms and people. A selection of common restrictions and precautions found on product labels are provided in this section, **but it is important to read the label carefully in order to understand how to use the product properly.**

- **Rainfall:** This section indicates the required delay between application and rainfall to avoid reductions in the performance of the product or the unintentional movement of the product.
- **Restricted Entry Interval:** This section indicates when it is safe for a person to re-enter treated field following an application of a particular pesticide without the same personal protection used to apply the product.
- **Resistance Management:** This section highlights products where an increased risk of the target pests developing resistance to the group of products (typically fungicides) has been identified. If no specific risk has been identified the reader is referred to a general resistance section. All pesticides have some risk of the target pest developing resistance. Rotating pesticide groups using as many different resistance groups as possible in the rotation is one way to avoid or delay resistance development.
- **Grazing:** This section indicates whether and how soon treated crops may be grazed by livestock or otherwise fed to livestock. This restriction is in place to avoid residues of the pesticide from being detected in milk or meat from animals consuming forage, greenfeed or straw from treated crops or forage.
- **Pre-harvest interval:** Is the time that must be left between application of a pesticide and the harvest of a crop in order to prevent greater than allowable residues of the pesticide in the harvested material. Harvest is the cutting of the crop (i.e. combining or hay cut) or removal of the harvestable material from the plant (i.e. picking fruit or stripper header). Maximum Residue Limits (MRLs) are set for commodities based on registered rates and staging of pesticides used in the production of those commodities. Disregarding these intervals can result in residues over the MRLs, which can lead to market disruptions.
- **Re-cropping:** This section indicates how soon specific crops may be seeded into treated fields. Failure to adhere to these delays could result in injury to the following crop.

- **Aerial Application:** This section indicates whether the product may be applied by aircraft and any special conditions that may be necessary.
- **Labelling:** In addition to other precautions and warnings, seed treatment products will also have statements about how seed treated with the product should be labeled.
- **Storage:** This section indicates how the product must be stored. As a general rule, unused pesticides should always be stored in their original containers in a secure, dry area, away from other pesticides, food or feed.
- **Buffer Zones:** This section will indicate any setback distances that are required from sensitive aquatic or upland habitats. Newer labels may indicate that these distances are from the downwind edge of the boom but older labels may not. Examples of aquatic habitats are lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands. Examples of terrestrial habitats are grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands.

In addition to the set back or 'buffer' distances indicated on product labels, provincial environment departments may also have additional restrictions or requirements for permits to apply pesticides to or near water. Check with the provincial environment department/ministry for more information.

### Tank Cleaning:

This section describes the measures that are required to properly clean out spray tanks. A general overview of sprayer cleaning is given on page 13, but products where there is a high risk of crop damage as a result of very low level contamination of the spray solution, will have specific measures indicated.

### Hazard Rating:

This section indicates the relative toxicity of the pesticide, formulations or components. For an explanation of the symbols used here see pages 9 and 10. An additional symbol that is used that is not a standard symbol is the (!) exclamation mark which indicates an otherwise undefined risk factor (i.e. irritation).

Example:



Caution – Eye Irritant

Some older products have not had hazard ratings developed, while other products have very low toxicity and do not have hazard warnings. Even in the absence of a hazard rating users should wear a minimum of nitrile gloves and an apron as well as long sleeved apparel during mixing and avoid unnecessary exposure.