

Palouse™ M

BROMOXYNIL	GROUP	6	HERBICIDE
MCPA	GROUP	4	HERBICIDE



ADAMA

- FOR CONTROL OF CERTAIN BROADLEAF WEEDS IN SMALL GRAINS (WHEAT*, BARLEY*, OATS* AND RYE*), CONSERVATION RESERVE PROGRAM (CRP) AREAS, GRASSES GROWN FOR SEED OR SOD PRODUCTION AND FLAX

*Not registered for use by California.

- ACTIVE INGREDIENTS:

Bromoxynil octanoate: Octanoic acid ester of bromoxynil (3,5-dibromo-4-Hydroxybenzonitrile)† 31.7%

MCPA, 2-ethylhexyl ester: 2-Ethylhexyl ester of 2-methyl-chlorophenoxyacetic acid†† 34.0%

OTHER INGREDIENTS††† 34.3%

Total: 100.00%

† Bromoxynil octanoate equivalent to 22.4% of bromoxynil phenol (acid) or 2.0 pounds of bromoxynil per gallon.

†† Equivalent to 21.8% MCPA acid or 2.0 pounds MCPA acid per gallon.

††† Contains petroleum distillates

- EPA Reg. No. 66222-299 EPA Est. No. 37429-GA-001^{BT};
37429-GA-002^{BO}; 37429-GA-003^{BV}
Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

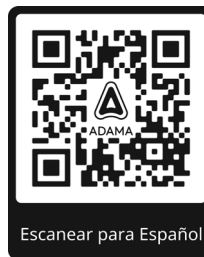
- KEEP OUT OF REACH OF CHILDREN
CAUTION - PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.

(If you do not understand the label, find someone to explain it to you in detail.)

See inside label booklet for First Aid, additional Precautionary Statements, Directions for Use and Storage and Disposal Instructions.

- How can we help?
1-866-406-6262



FIRST AID

If swallowed:

- Immediately call a poison control center or doctor for treatment advice.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give **any** liquid to the person
- Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center, doctor, or going for treatment. For emergency medical treatment information, call 24-hours a day to 1-877-250-9291.

For non-emergency information on this product, contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at <http://npic.orst.edu>.

NOTE TO PHYSICIAN: Contains petroleum distillate, vomiting may cause aspiration pneumonia.

In case of spills, fires, leaks, or accidents call INFOTRAC at 1-800-535-5053.

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Mixers, loaders, applicators, flaggers, and other handlers must wear:

- Coveralls over long-sleeved shirt and long pants,
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, or Viton ≥14 mils,
- Chemical-resistant apron when cleaning equipment, mixing, and loading,
- Protective eyewear,
- Chemical-resistant headgear for overhead exposure,
- Chemical-resistant footwear plus socks.

See **Engineering Controls** for additional requirements.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS

Handlers must use closed mixing loading systems during mixing/loading liquids for aerial applications.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40CFR 170.607(d-f)], the handler PPE requirements may be reduced or modified as specified in the WPS. **IMPORTANT:** When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.607(f)].

If you will handle a total of 60 gallons or more of this product per day, you must use a mechanical transfer system for all mixing and loading operations. If this product is packaged in a 30-gallon drum, you must use a mechanical transfer system which terminates in a drip-free hard coupling which may be used only with a spray or mix tank which has been fitted with a compatible coupling. If you do not presently own or have access to a mechanical transfer system with this type of coupling, contact your dealer for information on how to obtain such a system or to modify your present system.

When using a mechanical transfer system, do not remove or disconnect the pump or probe from the container until the container has been emptied and rinsed. The pump or probe system must be used to rinse the empty container and to transfer the rinsate directly to the mixing or spray tank.

Application from a tractor with a completely enclosed cab or aerial application is required whenever this product is applied to 360 or more acres in a day. The closed systems and enclosed cabs must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.607(d-f)]. The handler PPE requirements may be reduced or modified as specified in the WPS.

To reduce exposure to residues, wash the spray rig, tractor, and all other equipment used to handle or apply this product with water daily or before using the equipment for any other purpose.

APPLICATION BY CHEMIGATION must be done by fixed pipe, overhead sprinkler systems or hand-moved pipe. If hand-moved pipe is used for chemigation, the pipe must not be handled in any way until 24 hours after chemigation has been completed and residues have been flushed from the system. When applying by chemigation, no person may enter the application site unless in an enclosed vehicle.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic invertebrates, and aquatic plants. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Ground Water Advisory: MCPA is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory: This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of MCPA from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

NON-TARGET ORGANISM ADVISORY STATEMENT: This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

Reporting Ecological Incidents:

To report ecological incidents, including mortality, injury, or harm to plants and animals, call 1-866-406-6262.

PHYSICAL AND CHEMICAL HAZARDS

Do not mix or allow contact with oxidizing agents as a hazardous chemical reaction may occur.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Read entire label before using this product.

Endangered Species Protection Requirements:

It is a Federal offense to use any pesticide in a manner that results in an unauthorized "take" (e.g., kill or otherwise harm) of an endangered species and certain threatened species, under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email ESPP@epa.gov. You must use the Bulletin valid for the month in which you will apply the product.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part

170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours for grasses grown for seed and 24 hours for sod and all other uses on this label.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, or Viton ≥ 14 mils, coveralls, protective eyewear, and chemical-resistant footwear plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to the use of this product on non-residential turfgrass areas that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170).

The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried.

USE INFORMATION

Palouse™ M is formulated as an emulsifiable concentrate containing the equivalent of 2 lbs. per gallon of bromoxynil phenol (acid) and 2 pounds per gallon of MCPA acid.

Palouse M is a selective postemergence herbicide for control of important broadleaf weeds infesting small grains (wheat*, barley*, oats*, rye*), flax, conservation reserve program areas, and grass grown for seed or sod production. Optimum weed control is obtained when Palouse M is applied to actively growing weed seedlings. Palouse M is primarily a contact herbicide, therefore thorough coverage of the weed seedlings is essential for optimum control.

Palouse M has little residual activity. Therefore, subsequent flushes of weeds will not be controlled by the initial treatment. Generally, crops that form a good canopy will help shade subsequent weed flushes. However, certain crops or short-straw varieties, for example Yecora Rojo wheat*, may not develop the crop canopy fast enough to shade the subsequent flushes of weeds.

Occasional transitory leaf burn may occur. The temporary leaf burn is similar to that seen with liquid fertilizer. Because the activity of Palouse M is mainly contact, recovery of the crop is generally rapid with no lasting effect. Frequency and amount of leaf burn may be greater when crops are stressed by abrasive winds, cool to cold evening temperatures or mechanical injury, such as that caused by hail, sleet or insect feeding. To reduce the potential for temporary leaf burn, applications should be made to dry foliage in the recommended spray volumes per acre when weather conditions are not extreme.

IMPORTANT: Palouse M contains low volatile 2-ethylhexyl ester of MCPA. At high air or ground surface temperatures, vapors from Palouse M may cause injury to susceptible plants. This fact should be considered when applying Palouse M.

MIXING, LOADING AND HANDLING INSTRUCTIONS

2.5 Gallon Containers

Special care must be taken in mixing and loading Palouse M. Hands should be placed on the container in such a way as to avoid possible drip or splash.

30 Gallon and Bulk Containers

If you will handle a total of 60 gallons or more of Palouse M per day, you must use a mechanical transfer system for all mixing and loading operations. If Palouse M is packaged in a 30-gallon drum, you must use a mechanical transfer system which terminates in a drip-free hard coupling which may be used only with a spray or mix tank which has been fitted with a compatible coupling. If you do not presently own or have access to a mechanical transfer system with this type of coupling, contact your dealer for information on how to obtain such a system or to modify your present system.

When using a closed system for ariel applications to high acreage crops, do not remove or disconnect the pump or probe from the container until the container has been emptied and rinsed. The pump or probe system must be used to rinse the empty container and to transfer the rinsate directly to the mixing or spray tank.

Palouse M ALONE: Fill the spray tank 1/2 to 3/4 full with clean water. Begin agitation and add the recommended amount of Palouse M. Add water to the spray tank to the desired level.

Maintain sufficient agitation to ensure a uniform spray mixture during application.

TANK MIXTURES: Palouse M can be applied in tank mixture with many other herbicides and insecticides registered for use on approved crops. It is the pesticide user's responsibility to ensure that all products tank-mixed with Palouse M, are registered for the intended use. Users must follow the most restrictive directions and precautionary language of the products in the mixture. Refer to the specific crop section for rate recommendations and other restrictions.

To apply Palouse M in mixture with another product, fill the spray tank 1/2 to 3/4 full with clean water and begin agitation. If tank mixing with wettable powder, soluble powder, flowable or dry flowable products, add the powder or flowable product first. After the other herbicide is thoroughly mixed with water, add the specified amount of Palouse M and add water to the spray tank to the desired level. If tank mixing with other product types, add Palouse M first before adding the other product.

Always mix one product in water thoroughly before adding another product or compatibility problems may occur. Never mix two products together without first mixing in water.

Maintain sufficient agitation while mixing and during application to ensure a uniform spray mixture. If spray mixture is allowed to remain without agitation for short periods of time, be sure to agitate until uniformly mixed before application.

A compatibility test is recommended to ensure satisfactory spray preparation. To test for compatibility, use a small container and mix a small amount (0.5 to 1 quart) of spray, combining all ingredients in the same ratio as the anticipated use. If any indications of physical incompatibility develop, do not use this mixture for spraying. Indications of incompatibility usually will appear within 5 to 15 minutes after mixing. To ensure maximum crop safety and weed control, follow the most restrictive of the labeling limitations and precautions of all the products used in the tank mixture with Palouse M.

SPRAYABLE LIQUID FERTILIZERS AND SPRAY ADDITIVES

Palouse M can be applied in combination with sprayable liquid fertilizer or spray additives such as surfactants or crop oil concentrate. When tank mixing with liquid fertilizer always add the fertilizer to the spray tank first and agitate thoroughly before adding Palouse M. Always predetermine the compatibility with liquid fertilizer by mixing small proportional quantities in advance. Agitation must be maintained during filling and application operations to ensure that Palouse M is evenly mixed with the fertilizer. Leaf burn may occur when Palouse M is applied with liquid fertilizer, but new leaves are not adversely affected.

IMPORTANT: Fertilizers and spray additives can increase foliage leaf burn when applied with Palouse M. Do not apply fertilizers or spray additives with Palouse M if leaf burn is a major concern due to environmental conditions, crop, or variety sensitivity to Palouse M.

APPLICATION PROCEDURES

Palouse M can be applied to registered use areas by ground, aerial and sprinkler irrigation equipment.

GROUND APPLICATION

Use a standard herbicide boom sprayer that provides uniform and accurate application. Sprayer must be equipped with screens no finer than 50 mesh in the nozzle tips and in-line strainers.

Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572).

A spray volume of 10 to 20 gallons per acre (GPA) is recommended for optimum spray coverage. When using higher speed equipment, a maximum ground speed of 10 mph is suggested if field conditions cause excessive boom movement during application which results in poor spray coverage. Ground applications made when dry, dusty field conditions exist may provide reduced weed control in wheel track areas. Applications using less than 10 gallons per acre may result in reduced weed control.

When weed infestations are heavy, use of higher spray volumes and spray pressure will be helpful in obtaining uniform weed coverage. If you are unsure of the infestation level or size of crop, consult your local extension service.

AERIAL APPLICATION

Applicators are required to use a medium or coarser droplet size (ASABE S641).

Use orifice discs, cores and nozzle types and arrangements that will provide for optimum spray distribution and maximum coverage. A minimum spray volume of 5 GPA is recommended. A minimum spray volume of 3 gallons per acre may be used if crop canopy and weed density allow adequate spray coverage. Aerial applications using less than 5 gallons of spray volume per acre may result in reduced weed control.

SPRINKLER IRRIGATION APPLICATION*

Palouse M can be applied through sprinkler irrigation systems to small grains and grasses grown for seed or sod production.

Apply Palouse M through sprinkler systems including center pivot, lateral move, side (wheel) roll, solid set, or hand move irrigation systems only. If hand moved pipe is used for chemigation, the pipe must not be handled in any way until 24 hours after chemigation has been completed and residues have been flushed from the system. When applying by chemigation, no person may enter the application site unless in an enclosed vehicle. Do not apply Palouse M through any other type of irrigation system.

*Not registered for use by California.

SPECIFIC REQUIREMENTS FOR APPLICATION THROUGH AUTOMATED SPRINKLER IRRIGATION SYSTEM

1. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.
8. Agitation is recommended in the pesticide supply tank when applying Palouse M.
9. Palouse M should be applied continuously for the duration of the water application with center pivot and continuous lateral move systems. Application of Palouse M should be made during the last 30-45 minutes of the irrigation set with other overhead sprinkler systems.
10. For best performance, set the sprinkler system to deliver approximately 0.5 inch or less of water per acre.
11. Remove scale, pesticide residues and other foreign matter from the supply tank and entire injector system. Flush with clean water.
12. If Palouse M is diluted in the supply tank, fill the tank with half of the water amount desired, add Palouse M and then add remaining water amount with agitation. Always dilute with at least 4 parts water to 1 part Palouse M.
13. Start the sprinklers and then inject Palouse M into the irrigation line.
14. Palouse M should be injected with a positive displacement pump into the main line at least 8 feet ahead of a right angle turn to insure adequate mixing. Refer to Palouse M label for detailed information on application rates and timings.

CHEMIGATION USER PRECAUTIONS

Application of more than 0.5 inch/acre of irrigation water may result in decreased product performance on certain soils.

Do not apply when conditions favor drift, when system connections or fittings leak, or when nozzles do not provide uniform distribution.

Allow sufficient time for pesticide to be flushed through all the lines and nozzles before turning off irrigation water.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

Do not connect an irrigation system used for pesticide application to a public water system.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

A person knowledgeable of the chemigation system and responsible for its operations, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

MANDATORY SPRAY DRIFT MANAGEMENT

Aerial Applications:

- Do not release spray at a height greater than 10 ft above the ground or vegetative canopy, unless a greater application height is necessary for pilot safety.
- Applicators are required to use a medium or coarser droplet size (ASABE S641).
- If the windspeed is 10 miles per hour or less, applicators must use $\frac{1}{2}$ swath displacement upwind at the downwind edge of the field.
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- The distance of the outermost nozzles must not exceed 75% of the length of the wingspan for fixed-wing aircraft or 90% of the rotor diameter for helicopters.
- Do not apply during temperature inversions.

Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572)
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.

Boomless Ground Applications:

- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572) for all applications.
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

SPRAY DRIFT ADVISORIES

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

IMPORTANCE OF DROPLET SIZE

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

Controlling Droplet Size – Ground Boom

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Controlling Droplet Size – Aircraft

- Adjust Nozzles – Follow nozzle manufacturers' recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight.

BOOM HEIGHT – Ground Boom

For ground equipment, the boom should remain level with the crop and have minimal bounce.

RELEASE HEIGHT – Aircraft

Higher release heights increase the potential for spray drift.

SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target areas.

TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

TEMPERATURE INVERSIONS

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

WIND

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Boomless Ground Applications:

Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications:

Take precautions to minimize spray drift.

CROP ROTATIONAL INTERVAL

Do not rotate the crops listed on this label until 30 days following application. Do not rotate to all other crops until 60 days following application.

WEED RESISTANCE MANAGEMENT

For resistance management, Palouse M is both a **Group 6 and Group 4** herbicide. While weed resistance to **Group 6 and/or Group 4** herbicides is common in a number of weed species, these herbicides remain an important component of successful weed control programs. Resistance management should be part of a diversified weed control strategy that integrates multiple options including chemical, cultural, mechanical, and biological control tactics. Cultural control tactics include agronomic practices that improve the competitive ability of the crop via rotation, variety/cultivar selection, precision fertilizer placement and optimum crop plant density. Agronomic practices should also limit the development and spread of weeds by using clean crop seed (e.g. certified seed), prevent crop trait-out crossing, control weed influx from field borders, and manage weed seed at harvest/post-harvest to minimize the carryover seed-bank into the following crop. Mechanical control tactics include timely tillage where practical, equipment cleaning to avoid weed spread, and minimization of harvest crop seed losses in the field through close attention to timeliness of harvesting, correct setup of harvest equipment, and covering crop seed loads during harvest and transport to avoid dispersing seed. An example of a biological control tactic is field grazing during or after cropping to manage weeds and reduce weed seed production. Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.

Chemical Control

- Start clean with tillage or an effective burndown herbicide program.
- Apply preemergence herbicides that provide soil residual control of broadleaf and grass weeds to reduce early season weed competition and allow for timely in-crop postemergence herbicide applications.
- Use tank mixes and sequential applications with other herbicides possessing different modes of action (MOAs) that are also effective on the target weeds.
- Follow labeled application rate and weed growth stage specifications.
- DO NOT rely on a single herbicide mode of action for weed control during the growing season.
- Avoid application of herbicides with the same mode of action more than twice per growing season.
- Use recommended adjuvant, adequate spray volume, proper nozzle and pressure (see label) to ensure effective weed coverage for applications.
- Control weeds in field borders to prevent weeds from influx into field.

Scouting and Containment

- Scout fields before application to ensure optimum herbicide selection, rates and timing for effective control of target weeds.
- Scout fields after herbicide application to identify areas where weed control was ineffective. Consider application and environmental factors that may have led to incomplete control.
- Control weed escapes with herbicides possessing a different mode of action or use a mechanical control measure. Weed escapes should not be allowed to reproduce by seed or to proliferate vegetatively.
- Clean equipment before moving to a different field to avoid spread of resistant weeds (especially harvest and tillage equipment).
- Contact your state cooperative extension service, land grant university weed scientist, professional consultants, your herbicide supplier and/or your local sales representative if resistance is suspected.
- Prevent crop trait out-crossing to weeds and weed influx from border to field.

USE RESTRICTIONS

- Do not apply this product to golf course turf.
- Aerial application to fallow land is restricted within 25 feet of residential areas (e.g., homes, schools, playgrounds, shopping areas, hospitals, etc.)
- Handlers must use closed mixing loading systems during mixing and loading liquids for aerial application.

WEEDS CONTROLLED

Postemergence application of Palouse M will control the following weeds when sprayed in the seedling stage. Maximum weed stage of growth is listed under the Palouse M Directions tables.

MOST SUSCEPTIBLE BROADLEAF WEED SPECIES

Annual sowthistle	<i>(Sonchus oleraceus)</i>
Black mustard	<i>(Brassica nigra)</i>
Black nightshade	<i>(Solanum nigrum)</i>
Common cocklebur	<i>(Xanthium strumarium)</i>
Common lambsquarters	<i>(Chenopodium album)</i>
Common tarweed	<i>(Hernizonia congesta)</i>
Cow cockle	<i>(Saponaria vaccaria)</i>
Cutleaf nightshade	<i>(Solanum triflorum)</i>
Eastern black nightshade	<i>(Solanum ptycanthum)</i>
Coast fiddleneck	<i>(Amsinckia intermedia)</i>
Field pennycress	<i>(Thlaspi arvense)</i>
Green smartweed	<i>(Polygonum scabrum)</i>
Hairy nightshade	<i>(Solanum sarachoides)</i>
Horned Poppy*	<i>(Glaucium corniculatum)</i>
Jimsonweed	<i>(Datura stramonium)</i>
Ladysthumb	<i>(Polygonum persicaria)</i>
Lanceleaf sage	<i>(Salvia reflexa)</i>
London rocket	<i>(Sisymbrium irio)</i>
Marshelder	<i>(Iva xanthifolia)</i>
Pennsylvania smartweed	<i>(Polygonum strumarium)</i>
Pepperweed spp.	<i>(Lepidium app.)</i>
Redroot pigweed	<i>(Amaranthus retroflexus)</i>
Russian thistle	<i>(Salsola kali)</i>
Shepherdspurse	<i>(Capsella bursa-pastoris)</i>
Silverleaf nightshade	<i>(Solanum elaeagnifolium)</i>
Smooth pigweed	<i>(Amaranthus hybridus)</i>
Spiny pigweed	<i>(Amaranthus spinosus)</i>
Sunflower ¹	<i>(Helianthus annuus)</i>
Tall Waterhemp*	<i>(Amaranthus tuberculatus)</i>
Tartary buckwheat	<i>(Fagopyrum tataricum)</i>
Tumble mustard	<i>(Sisymbrium altissimum)</i>
Wild buckwheat	<i>(Polygonum convolvulus)</i>
Wild mustard	<i>(Sinapis arvensis)</i>
Yellow rocket	<i>(Barbarea vulgaris)</i>

¹ For control of sunflower, delay application until first sunflower seedlings emerging are 4 inches in height.

*Not registered for use by California.

SUSCEPTIBLE BROADLEAF WEED SPECIES

Blue (purple) mustard
Common groundsel
Common ragweed
Corn chamomile
Corn gromwel
Fumitory*
Giant ragweed
Hemp sesbania
Henbit
Ivyleaf morningglory
Knapel
Kochia
Mayweed
Prostrate knotweed
Puncture vine
Tall morningglory
Tansy mustard*
Tarweed
Velvetleaf
Wild radish

(*Chlorispora tenella*)
(*Senecio vulgaris*)
(*Ambrosia artemisiifolia*)
(*Anthemis arvensis*)
(*Lithospermum arvense*)
(*Fumaria officinalis*)
(*Ambrosia trifida*)
(*Sesbania exaltata*)
(*Lamium amplexicaule*)
(*Ipomoea hederacea*)
(*Scleranthus annuus*)
(*Kochia scoparia*)
(*Anthemis cotula*)
(*Polygonum aviculare*)
(*Tribulus terrestris*)
(*Ipomoea purpurea*)
(*Descurainia pinnata*)
(*Hernizonia spp.*)
(*Abutilon theophrasti*)
(*Raphanus raphanistrum*)

Weeds germinating after spraying will not be controlled.

*Not registered for use by California.

WEEDS SUPPRESSED

Canada Thistle

(*Cirsium arvense*)

Palouse M applied at 1-1/2 pints per acre provides burn down of top growth. Regrowth may occur. Make applications when Canada thistle is 8 inches tall to the bud stage.

WHEAT*, BARLEY*, OATS* AND RYE*		
APPLICATION TIMING	RATE ¹	WEEDS
Apply to Fall seeded wheat, barley, oats and rye throughout the United States and spring seeded wheat, barley, oats and rye in Idaho, Oregon, Washington, Colorado, Wyoming, and Montana. Apply to wheat, barley, oats and rye from the 3-leaf stage but before the crop reaches the boot stage.	1 pint/A	MOST SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds up to the 8-leaf stage or 4 inches in height, whichever comes first. If weed forms rosette, apply before weeds exceed 2 inches in diameter.
	1-1/2 to 2 pints/A	SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds up to the 4-leaf stage or 2 inches in height, whichever comes first. If weed forms rosette, apply before weeds exceed 1 inch in diameter.
	2 pints/A	Apply to henbit, knawel and mayweed up to the 4-leaf stage or 2 inches in height, whichever comes first. Apply to kochia and tansy mustard for improved control when these weeds exceed the recommended stage of growth or are growing under cool, dry conditions.
Spring seeded wheat and barley except Idaho, Oregon, Washington, Colorado, Montana, and Wyoming. Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the crop reaches the boot stage.	1-1/2 pints/A	MOST SUSCEPTIBLE AND SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds that do not exceed the 8-leaf stage or 4 inches in height, whichever comes first. If weed forms rosette, apply before weeds exceed 2 inches in diameter. Apply to kochia up to 2 inches in height.
Spring seeded wheat and barley except Idaho, Oregon, Washington, Colorado, Montana, and Wyoming. Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the crop reaches the boot stage.	1-1/2 to 2 pints/A	Apply to kochia that is 2-4 inches height.
Apply to wheat, barley, oats, and rye from the 3-leaf stage but before the boot stage. Apply through automated sprinkler irrigation systems with mechanical transfer loading system only. See MIXING LOADING AND HANDLING INSTRUCTIONS section for complete details.	Chemigation Only 2 pints/A	Apply to MOST SUSCEPTIBLE and SUSCEPTIBLE broadleaf weeds up to the 4-leaf stage, 2 inches in height or 1 inch in diameter, whichever comes first.
Make applications following harvest of wheat, barley, oats and rye in the states of North Dakota, South Dakota, Minnesota, and Montana. Do not plant any rotational crop until the following use season.	Post-harvest 3/4 to 2 pints/A	Apply 3/4 to 1 pint/A to MOST SUSCEPTIBLE BROADLEAF WEEDS up to the 8-leaf stage or 4 inches in height, whichever comes first. Apply 1-1/2 to 2 pints/A to SUSCEPTIBLE BROADLEAF WEEDS up to the 4-leaf stage or 2 inches in height, whichever comes first.
RESTRICTIONS: WHEAT, BARLEY, OATS AND RYE - Do not graze treated fields within 45 days after application. - Do not apply when crops are under moisture stress. - Do not apply more than 2 applications per year with a minimum retreatment interval of 21 days. - Do not apply when crop canopy covers the weeds as poor control will result. - Do not apply after the Boot stage. - Do not apply more than 2 pints of Palouse M (0.5 lb bromoxynil phenol (acid)/0.5 lb. MCPA acid) per acre per year. - Do not apply more than 2 pints of Palouse M (0.5 lb bromoxynil phenol (acid)/0.5 lb. MCPA acid) per acre per application. - If applying additional MCPA-containing products to the same crop, do not exceed a total of 0.75 lb of MCPA acid equivalent per acre per year from all combined sources.		
PRECAUTIONS: WHEAT, BARLEY, OATS AND RYE Reduced weed control may occur when weeds are stressed from lack of moisture or cold temperatures.		

¹Palouse M contains 0.25 lb bromoxynil phenol/pint and 0.25 lb MCPA acid/pint.

*Not registered for use by California.

CONSERVATION RESERVE PROGRAM AREAS (CRP)*		
APPLICATION TIMING	RATE ¹	WEEDS
Apply to grasses from the 3-leaf stage.	1 to 2 pints/A	MOST SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.
Apply to grasses from the 3-leaf stage	1.5 – 2 pints/A	SUSCEPTIBLE BROADLEAF WEEDS: Apply to weeds up to the 8-leaf stage, 4 inches in height or 2 inches in diameter, whichever comes first.
RESTRICTIONS: CRP AREAS - Do not allow livestock to graze in treated areas or feed treated grass to livestock. - Do not apply more than 2 pints/A of Palouse M (0.5 lb bromoxynil phenol (acid)/0.5 lb. MCPA acid) per acre per year to CRP areas that are under seeded with alfalfa. - Do not apply more than 2 pints/A of Palouse M (0.5 lb bromoxynil phenol (acid)/0.5 lb. MCPA acid) per acre per application. - Do not apply more than 2 applications per year with a minimum retreatment interval of 21 days. - If applying additional bromoxynil-containing products to the same crop, do not exceed a total of 0.5 lb of bromoxynil per acre per year from all combined sources. - If applying additional MCPA-containing products to the same crop, do not exceed a total of 0.75 lb of MCPA acid equivalent per acre per year from all combined sources.		
PRECAUTIONS: CRP AREAS Avoid application of Palouse M to CRP areas planted with alfalfa if temperatures are expected to exceed 80° F or severe crop injury may occur. If legumes other than alfalfa have been planted, severe crop injury may occur at any application temperature.		

*Not registered for use by California.

GRASSES GROWN FOR SEED PRODUCTION OR SOD PRODUCTION (Seedling and Established Grasses)		
APPLICATION TIMING	RATE ¹	WEEDS
Apply to established and newly seeded grasses grown for seed or sod production before the boot stage. Established grasses tolerant to Palouse M include bentgrasses, Kentucky Bluegrass, Fescues, Ryegrass, Bermudagrass, St. Augustine grass and Zoysia grass. Palouse M may also be used on seedling grasses such as Merion, Park, Delta, or common Kentucky Bluegrasses, Pennlawn, Chewings, Illahee or Alta Fescues, Orchard grass, Highland, Seaside or Astoria Bentgrasses, perennial Ryegrasses, Bahiagrass and Zoysiagrass.	1–2 pints/A OR 0.375 – 0.73 fl. oz./1000 sq. ft.	Refer to the WEED LIST for a listing of susceptible broadleaf weeds. Optimal control will be attained when weeds are treated in the seedling stage (less than 4-leaf stage, 2 inches in height, or 1 inch in diameter.)
Apply to established and newly seeded grasses grown for seed or sod production before the boot stage. Apply through Automated sprinkler irrigation systems with mechanical transfer loading system only. See MIXING, LOADING AND HANDLING INSTRUCTIONS section for complete details. Refer to the list of established grasses that are tolerant to Palouse M.	Chemigation* only: 2 pints/A OR 0.73 fl. oz. / 1000 sq. ft	
RESTRICTIONS: Grasses grown for seed or sod production - Not for use on residential turf. - Do not apply with backpack or handheld application equipment. - Do not allow livestock to graze in treated areas or feed treated grasses to livestock. - Do not apply more than 2 pints of Palouse M (0.5 lb bromoxynil phenol/0.5 lb. MCPA acid) per acre per year. - Do not apply more than 2 pints/A of Palouse M (0.5 lb bromoxynil phenol (acid)/0.5 lb. MCPA acid) per acre per application. - Do not apply more than 2 applications per year with a minimum retreatment interval of 21 days. - Do not apply this product to golf course turf. - If applying additional bromoxynil-containing products to the same crop, do not exceed a total of 0.5 lb of bromoxynil per acre per year from all combined sources. - If applying additional MCPA-containing products to the same crop, do not exceed a total of 0.75 lb of MCPA acid equivalent per acre per year from all combined sources.		

¹Palouse M contains 0.25 lb bromoxynil phenol/pint and 0.25 lb MCPA acid/pint.

*Not registered for use by California.

FLAX (<i>Linum usitatissimum</i> only)		
APPLICATION TIMING	RATE ¹	WEEDS
Apply to flax that is 2 to 8 inches in height. Do not apply Palouse M to flax during or after the bud stage.	0.5 to 0.9 pints/A	Apply to MOST SUSCEPTIBLE weeds that do not exceed the 4-leaf stage, 2 inches in height or 1 inch in diameter, whichever comes first.
RESTRICTIONS: FLAX (<i>Linum usitatissimum</i> only) - Do not use on ornamental flax. - Do not apply more than 0.9 pints of Palouse M (0.225 lb bromoxynil phenol/0.225 lb MCPA acid) per acre per year. - Unless otherwise instructed, do not apply Palouse M with crop oil concentrate, surfactants or nitrogen solutions. - If applying additional MCPA-containing products to the same crop, do not exceed a total of 0.25 lb of MCPA acid equivalent per acre per year from all combined sources.		
PRECAUTIONS: FLAX (<i>Linum usitatissimum</i> only) - Avoid application if temperatures are expected to exceed 85° F at application or 3 days following application or crop injury may occur. - Unacceptable crop injury may occur following Palouse M application to flax grown on high organic, peat type soils. - Application under high humidity conditions can injure flax.		

¹Palouse M contains 0.25 lb bromoxynil phenol/pint and 0.25 lb MCPA acid/pint.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

PESTICIDE STORAGE: Store at temperatures above 32° F. If allowed to freeze, remix before using.

Always store pesticides in the original closed container in a secure storage area. Store pesticides away from food, pet food, feed, seed, fertilizers, and veterinary supplies. Protect pesticide containers from extreme heat and cold.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

Non-refillable containers (2.5, 30 & 55 gallons): Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration or by other procedures allowed by state and local authorities.

Non-refillable <5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Non-refillable >5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use for disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES, and LIMITATIONS OF LIABILITY.**

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of ADAMA. To the extent consistent with applicable law, all such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, ADAMA makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of ADAMA is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, ADAMA disclaims any liability whatsoever for special, incidental, or consequential damages resulting from the use or handling of this product.

LIMITATIONS OF LIABILITY: To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at ADAMA's election, the replacement of product.

Palouse is a trademark of ADAMA group company.

All other registered trademarks are the responsibility of their respective owners.

Manufactured by:

Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615

021326.v1

Palouse™ M

FOR CONTROL OF CERTAIN BROADLEAF WEEDS IN SMALL GRAINS (WHEAT*, BARLEY*, OATS* AND RYE*), CONSERVATION RESERVE PROGRAM (CRP) AREAS, GRASSES GROWN FOR SEED OR SOD PRODUCTION AND FLAX

*Not registered for use by California.

ACTIVE INGREDIENTS:

Bromoxynil octanoate: Octanoic acid ester of bromoxynil (3,5-dibromo-4-Hydroxybenzonitrile)† 31.7%
MCPA, 2-ethylhexyl ester: 2-Ethylhexyl ester of 2-methyl-chlorophenoxyacetic acid‡ 34.0%
OTHER INGREDIENTS‡ 34.3%

Total: 100.00%

† Bromoxynil octanoate equivalent to 22.4% of bromoxynil phenol (acid) or 2.0 pounds of bromoxynil per gallon.

‡ Equivalent to 21.8% MCPA acid or 2.0 pounds MCPA acid per gallon.

‡‡‡ Contains petroleum distillates

EPA Reg. No. 66222-299

EPA Est. No. 37429-GA-001^{BT};
37429-GA-002^{BO}; 37429-GA-003^{BV}

Letter(s) in lot number correspond(s) to superscript in EPA Est. No.

KEEP OUT OF REACH OF CHILDREN CAUTION - PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION: Harmful if swallowed.

How can we help?
1-866-406-6262

Manufactured by:

Makhteshim Agan of North America, Inc.
(d/b/a ADAMA)
8601 Six Forks Road, Suite 300
Raleigh, NC 27615



ADAMA



Net Contents
2.5 gallons

BROMOXYNIL	GROUP	6	HERBICIDE
MCPA	GROUP	4	HERBICIDE

FIRST AID

If swallowed:	- Immediately call a poison control center or doctor for treatment advice. - Do not induce vomiting unless told to do so by the poison control center or doctor. - Do not give any liquid to the person - Do not give anything to an unconscious person.
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Have the product container or label with you when calling a poison control center, doctor, or going for treatment. For emergency medical treatment information, call 24-hours a day to 1-877-250-9291. For non-emergency information on this product, contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at <http://npic.orst.edu>.

NOTE TO PHYSICIAN: Contains petroleum distillate, vomiting may cause aspiration pneumonia.

In case of spills, fires, leaks or accidents call 1-800-535-5053.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

PESTICIDE STORAGE: Store at temperatures above 32° F. If allowed to freeze, remix before using. Always store pesticides in the original closed container in a secure storage area. Store pesticides away from food, pet food, feed, seed, fertilizers, and veterinary supplies. Protect pesticide containers from extreme heat and cold.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

CONTAINER HANDLING:

Non-refillable containers (2.5, 30 & 55 gallons): Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration or by other procedures allowed by state and local authorities.

Non-refillable <5 gallons: Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use for disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

See inside label booklet for First Aid, additional Precautionary Statements, Directions for Use and Storage and Disposal Instructions.

PEEL BACK BOOK HERE

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