

DIRECTIONS FOR USE

RESTRAINTS:

DO NOT apply to weeds which may be stressed (not actively growing) due to prolonged periods of extreme cold, moisture stress (waterlogged or drought affected), poor nutrition or previous herbicide treatment as reduced levels of control may result.

DO NOT spray if rain is likely to occur within one hour.

Table 1a. Winter crops – Canola, Chickpeas, Faba beans, Field peas, Lentils, Linola, Linseed, Lupins, Lucerne, Vetch, Medic and Clover pastures or seed crops

| WEEDS CONTROLLED | WEED | RATE (mL/ha) | | CRITICAL COMMENTS |
|--|-----------------|---|--------------------------------------|---|
| | GROWTH STAGE | with Uptake* ^① Spraying Oil | with a non-ionic wetter ^② | <p>① ② See GENERAL INSTRUCTIONS, Spraying oils/wetters section.</p> <p>FIELD PEAS AND CANOLA: The only oil recommended for use with Halomac 520 is Uptake* Spraying Oil. Halomac 520 + Lontrel 750 SG + Uptake* Spraying Oil are compatible and selective to canola. This tank-mix is also compatible with atrazine and selective to triazine tolerant canola.</p> <p>LUPINS AND FIELD PEAS: Mixtures with Brodal® or simazine may cause crop yellowing and separate applications are recommended.</p> <p>CHICKPEAS, FABA BEANS, LENTILS AND VETCH, LINOLA, LINSEED: Broadleaf herbicides should not be added to Halomac 520. Apply Halomac 520 and broadleaf herbicides at least a week apart.</p> <p>LUCERNE, CLOVER OR MEDIC PASTURES: If grazed or cut for hay immediately prior to treatment delay application until all grasses have fully expanded leaves. Use 75 mL + spraying oil or 100 mL + wetter/ha. (See GENERAL INSTRUCTIONS, Spraying Oils/wetters section). If silver grass (<i>Vulpia</i> spp.) is present in pasture, simazine should be tank mixed with the higher rate of Halomac 520 plus a non-ionic wetter.</p> |
| Annual ryegrass | 2 to 4 leaf | 75 | 100 | |
| | early tillering | 100 | 100 | |
| Barley grass Brome grass Paradoxa grass Volunteer cereals | 2 to 4 leaf | 50 | 75 | |
| | early tillering | 75 | 100 | |
| Wild oats WA, SA, Vic, Tas, Southern & Central NSW | 2 to 4 leaf | 37.5 | 50 | |
| | early tillering | 50 | 75 | |
| Wild oats Northern NSW & Qld | 2 to 4 leaf | 50 | 75 | |
| | early tillering | 75 | 100 | |

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Table 1b. Winter crop growth stage application windows

| Crop | Crop Growth Stage |
|---|--|
| Lucerne, Medic and Clover pastures or seed crops | Apply from 2nd trifoliate leaf onwards. For <i>Erodium</i> spp. spraying, apply from cotyledon crop stage onwards. |
| Canola, | Apply from 2nd leaf to prior to bud formation and stem elongation |
| Linola, Linseed | Apply from 5cm to flowering |
| Chickpeas, Faba beans, Field peas, Lentils, Lupins, Vetch | Apply from 2nd leaf, 2nd node or 2nd branch to prior to flowering |

Table 2a. Lucerne, Medic and Clover seed crops and pastures. See table 1b for crop stages

| WEEDS CONTROLLED | WEED GROWTH STAGE | RATE (mL/ha) with Uptake [®] Spraying Oil | CRITICAL COMMENTS |
|---|-------------------------------|--|--|
| Prairie grass (<i>Bromus catharticus</i>) | Up to early tillering | 100 | <p>① See GENERAL INSTRUCTIONS, Spraying oils/wetters section.</p> <p>③ Use lower rate when growing conditions and crop or pasture competition are good and when weed populations are below 100 plants/m². Use the higher rate when weed populations are above 100 plants/m² or when crop or pasture competition is poor.</p> <p>NOTE: Storksbill may not be controlled if simazine or Broadstrike* are tank-mixed with Halomac 520.</p> <p><u>LUCERNE, CLOVER OR MEDIC PASTURES:</u> If grazed or cut for hay immediately prior to treatment delay application until all grasses have fully expanded leaves. Use 75 mL + spraying oil or 100 mL + wetter/ha. (See GENERAL INSTRUCTIONS, Spraying Oils/wetters section). If silver grass (<i>Vulpia</i> spp.) is present in pasture, simazine should be tank mixed with the higher rate of Halomac 520 plus a non-ionic wetter.</p> |
| Musky or ferny leaf Storksbill: (<i>Erodium moschatum</i>) Common Crowsfoot or Common Storksbill (<i>Erodium cicutarium</i>) | Up to 6 leaf or 5 cm diameter | 50 - 75 ③ | |
| Long or shiny leaf storksbill (<i>E. botrys</i>) | Up to 8 leaf or 5 cm diameter | 75-100 | |

Table 2b. Lucerne, Medic and Clover seed crops only - not to be used for stockfeed. See table 1b for crop stages

| WEEDS CONTROLLED | WEED GROWTH STAGE | RATE (mL/ha) with Uptake [®] Spraying Oil | CRITICAL COMMENTS |
|--|---------------------|--|--|
| Couch grass (suppression), Rhodes grass (control) | Tillering seedlings | 150 + 150 ④ | ④ For best suppression of couch or control of Rhodes grass, make 2 applications of Halomac 520 2-4 weeks apart. Time second application to coincide with tillering stage of weeds and just after irrigation or significant rain. |
| Couch grass (control) Rhodes grass (control) | Established stands | 400 - 800 | Only treat actively growing weeds which are not moisture stressed. Use these rates for control of couch and Rhodes grass |

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Table 3a. Summer crops – Cotton, Cowpea, Lucerne, Mung bean, Navy beans, Peanuts, Soybeans, Sunflowers.

| WEEDS CONTROLLED | WEED GROWTH STAGE | RATE (mL/ha) with Uptake [®] Spraying Oil | CRITICAL COMMENTS |
|---|---------------------------------|--|--|
| Australian millet | 2 leaf to tillering up to 15 cm | 150 | <p>① See GENERAL INSTRUCTIONS, Spraying oils/wetters section.</p> <p>NAVY BEANS, PEANUTS, SOYBEANS: For broadleaf weed control, Halomac 520 at 150mL/ha plus wetter may be tank mixed with Blazer[®] (except on navy beans) or Basagran[®]</p> <p>Tank mixtures may cause transient leaf spotting on the crop but do not normally affect yield.</p> <p>DO NOT tank mix broadleaf herbicides with Halomac 520 if grasses have begun tillering or if the grasses are under moisture stress.</p> <p>DO NOT add Uptake Spraying Oil when mixing with Blazer[®] or Basagran[®].</p> <p>DO NOT use Blazer[®] or Basagran[®] tank-mixes on cowpea.</p> |
| Barnyard grass | 2 to 5 leaf | 100 | |
| | tillering up to 15 cm | 150 | |
| Crowsfoot grass Green panic Johnson grass (rhizome) | 2 leaf to tillering up to 15 cm | 150 | |
| Johnson grass (seedling) Liverseed grass (seedling) Mossman river grass | 2 to 5 leaf | 100 | |
| | tillering and up to 15 cm | 150 | |
| Summer grass | 2 leaf to tillering up to 15 cm | 150 | |
| Volunteer cereals | 2 to 4 leaf | 100 | |
| | tillering up to 15 cm | 150 | |

Table 3b. Summer crop growth stage application windows

| Crop | Crop Growth Stage |
|--|--|
| Lucerne | Apply from 2nd trifoliate leaf onwards |
| Cowpea, Mung beans, Navy beans, Soybeans | Apply from 2nd leaf to flowering |
| Peanuts | Apply from 2nd leaf to pegging |
| Cotton | Apply from 2nd leaf to before the onset of flowering |
| Sunflowers | Apply from 2nd leaf to head initiation |

Table 4. Annual and Perennial grasses and *Erodium* spp. in Orchard, Vine and Plantation crops, forestry, and pyrethrum.

| CROPS | CROP GROWTH STAGE | WEEDS CONTROLLED | WEED GROWTH STAGE | RATE (mL/ha) with Uptake [®] Spraying Oil | CRITICAL COMMENTS |
|---|-------------------|--|-------------------------------|--|--|
| Orchard, vine and plantation Crops including: Apples Avocado Banana Blueberry Citrus Custard apple Feijoa Grapevines Guava Kiwifruit Litchi (Lychee) Longan Mango Nashi Nut trees Passionfruit Paw paw Pear Persimmon Pineapple Rambutan Stone fruit | All growth stages | <u>Perennial grasses:</u> Couch Rhodes grass Slender rats tail grass | Established stands | 400 – 800 | <p>① See GENERAL INSTRUCTIONS, Spraying oils/wetters section.</p> <p>Spray should be directed to the base of the tree or vine avoiding contact with fruit and foliage.</p> <p>Spot spray: Use 25 mL to 50 mL/100 L of water. Use higher rate on late tillering mature grasses.</p> <p>Annual Grasses: Where treated in association with perennial grasses, these annual grasses will be controlled.</p> |
| | | Buffel grass Green panic Johnson grass Kikuyu <i>Paspalum</i> spp <i>Setaria</i> spp | Vegetative to early tillering | 200 | |
| | | | Late tillering | 400 | |
| | | <u>Annual grasses:</u> Annual ryegrass Barley grass Barnyard grass Brome grass Crowsfoot grass Lesser canary grass Liverseed grass Mossman river grass Paradoxa grass Summer grass Volunteer cereals Wild oats | 2 leaf to tillering | 200 | |
| Forestry: <i>Pinus radiata</i> <i>Eucalyptus</i> spp. | | | | | |
| Forestry: <i>Pinus pineaster</i> | | Annual grasses as above | Vegetative to tillering | 125 - 250 | Forestry: For annual grasses apply lowest rate to newly emerged grasses, increasing the rate as they develop. |
| Pyrethrum | | Barley grass Brome grass Rope twitch Barnyard grass <i>Erodium</i> spp. Volunteer cereals | Vegetative to tillering | 100 - 250 | Pyrethrum Tasmania only: For <i>Erodium</i> spp apply 75-100mL/ha if the main weed is <i>E. botrys</i> . Use 50 - 75 mL/ha if either <i>E. cicutarium</i> or <i>E. moschatum</i> are the main weeds. |

Table 5. Halomac 520 and Select® Herbicide tank-mixes – Canola, Chickpeas, Faba beans, Field peas, Lupins, Lentils

| WEEDS CONTROLLED | WEED GROWTH STAGE | RATE (mL/ha) | | CRITICAL COMMENTS |
|---|-------------------|--------------|------------------|---|
| | | Halomac 520 | Select Herbicide | |
| FOP/DIM susceptible Annual ryegrass + Volunteer barley Volunteer wheat Brome grass Wild oats Barley grass Phalaris | 2 to 4 leaf | 25 | 150 | See GENERAL INSTRUCTIONS, Spraying oils/wetters section. Use Uptake Spraying Oil at 500mL/100L or Hasten at 1L/100L. Apply at the same crop growth stages as those in Table 1b Winter Crops. |
| | Early tillering | 38 | 150 | |
| FOP resistant Annual ryegrass + Volunteer barley Volunteer wheat Brome grass Wild oats Barley grass Phalaris | 2 to 4 leaf | 25 | 200 | Lentils: Apply up to 7 node-early branching crop growth stage only. Lupins: Not for Qld. |
| | Early tillering | 38 | 250 | |

NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION

HARVESTING WITHHOLDING PERIODS

NOT REQUIRED WHEN USED AS DIRECTED FOR: Canola, chickpeas, cotton, cowpea, faba beans, field peas, lentils, linola, linseed, lupins, mung beans, navy beans, peanuts, soybeans, sunflowers or vetch.

DO NOT HARVEST FOR:

Medic and clover seed crops: **7 DAYS AFTER APPLICATION**

STOCK FOOD WITHHOLDING PERIODS:

DO NOT GRAZE OR CUT FOR STOCK FOOD FOR:

Canola, chickpeas, cotton, cowpea, faba beans, field peas, lentils, linola, linseed, lupins, navy beans, peanuts, soybeans, sunflowers and vetch:

28 DAYS AFTER APPLICATION

Lucerne: **21 DAYS AFTER APPLICATION**

Medic and clover pasture: **7 DAYS AFTER APPLICATION**

COTTON GIN TRASH MUST NOT BE FED TO ANIMALS.

GENERAL INSTRUCTIONS

Mixing

- Add water to the spray tank to 10 cm above the level of agitation and ensure the agitation device is working vigorously. (There must be a minimum of 100 L of water in the tank before any pesticide is added.)
- If tank mixing, firstly, add any soluble liquid formulations (e.g. LONTREL* Herbicide) and allow agitation for approximately one minute.
- Then add Halomac 520 at the point where agitation is strongest. (**Do not add Halomac 520 through a strainer or sieve**). Allow further agitation for one minute.
- Half fill the spray tank.
- If using wettable powder or water dispersible granules, or other emulsifiable concentration formulations (e.g. LORSBAN* 750WG or LE-MAT®, these should be **added after Halomac 520** to the half full spray tank ensuring vigorous agitation.

- Finally add Uptake* Spraying Oil or approved alternate spraying oil/wetter. (See section on spraying oils/wetters) and continue filling the tank to the required volume maintaining agitation at all times.
- Only mix sufficient solution for immediate use. Halomac 520 and any other tank mixes should be applied immediately for best results.

Spraying Oils/wetters

❶ **Spraying Oils:** It is essential to add an adjuvant to Halomac 520. Best results will be achieved with Uptake* Spraying Oil at 0.5 L/100 L of spray solution. Alternatively, other oils plus a non-ionic wetter may also be used. When other crop spraying oils are used, mix at 1.0 L/100 L and add a non-ionic wetter (surfactant) at 200 mL/100 L of spray solution. **Use of an oil is not always recommended.** See Critical Comments for specific situation recommendations.

❷ **Non-ionic Wetters:** When Uptake or other oils are not used, a 100% concentrate non-ionic wetting agent such as BS-1000® at 200 mL/100 L must be used along with the higher rate of Halomac 520 as specified in the Directions For Use.

Where water volumes of less than 50 L/ha are used, **DO NOT** use less than 250 mL/ha of Uptake or 500 mL/ha for oils other than Uptake or less than 100 mL/ha of wetter.

CANOLA, LUCERNE, MEDIC AND CLOVER PASTURES AND SEED CROPS:

When tank mixing Halomac 520 with Lontrel herbicides (canola only) or Broadstrike (lucerne, clover and medics), use Uptake Spraying Oil with the lower rates of Halomac 520 or a wetting agent with the higher rates of Halomac 520 unless otherwise specified. When mixing Halomac 520 with other broadleaf herbicides on these crops, DO NOT use an oil use a wetter instead.

FIELD PEAS AND CANOLA:

The oil recommended is Uptake Spraying Oil. Hasten is also recommended for use with tank-mixtures of Halomac 520 and Select Herbicide.

For canola, Halomac 520 + Lontrel 750SG + Uptake Spraying Oil are compatible and selective to canola. This tank-mixture is also compatible with atrazine or simazine and selective to triazine tolerant canola.

NAVY BEANS, PEANUTS, SOYBEANS:

When mixing with Blazer or Basagran **DO NOT** add spraying oil to these mixtures. **DO NOT** use these tank-mixes on cowpea.

Compatibility:

Ground use only:

Halomac 520 Herbicide can be tank mixed with:

| Insecticides: | Herbicides: |
|-----------------------------|-------------|
| dimethoate | atrazine |
| endosulfan | Basagran® |
| Lorsban* 500 EC Insecticide | Blazer® |

| Insecticides: | Herbicides: |
|--------------------------------------|--|
| Lorsban* 750WG Insecticide omethoate | Broadstrike* Herbicide Lontrel* Herbicide Lontrel* 750SG MCPA ester (LVE) - DO NOT exceed 700 mL/ha of MCPA LVE Oryzalin Select® Herbicide simazine Starane* 200 Herbicide |
| Fungicides: | Trace elements: |
| Dithane DF* Dithane Rainshield | magnesium sulphate zinc sulphate |

Halomac 520 Herbicide is NOT COMPATIBLE with 2,4-D or MCPA as sodium or amine salts.

Aerial use: No product other than a recommended crop oil or wetter should be mixed with Halomac 520 Herbicide when applied by air except for addition of Lontrel Forestry Herbicide for use in forestry and Lontrel 750SG for use in canola only.

Application

Apply Halomac 520 Herbicide in sufficient water to obtain good coverage. It should be applied by an accurately calibrated ground rig or aircraft delivering droplets with a VMD of 200-300 microns.

The following spray volumes are recommended.

Ground application 50-150 L/ha
Aerial application 30 L/ha minimum

Use higher water volumes in orchards and in dense crops where the weeds may be shielded by the crop canopy.

CLEANING SPRAY EQUIPMENT

If broadleaf herbicides, particularly sulfonylureas, have been used in the spray equipment at any time prior to Halomac 520, particular care should be taken to follow the directions on the relevant broadleaf herbicide label for equipment cleaning, or damage to susceptible crops may occur.

After using Halomac 520, empty the tank completely and drain the whole system. Thoroughly wash inside the tank using a pressure hose, drain the tank and clean any filters in the tank, pump, line and nozzles.

To rinse. After cleaning the tank as above, quarter fill the tank with clean water and circulate through the pump, lines, hoses and nozzles. Drain and repeat the rinsing procedure twice.

To decontaminate. Before spraying cereals, maize, sorghum or other sensitive crops, wash the tank and rinse the system as above. Then quarter fill the tank and add an alkali detergent (e.g. SURF®, Cold Water SURF Concentrate®,

DynamoMatic Concentrate®, OMO® or DRIVE®) at 500 mL/100 L of water or the powder equivalent at 500 g/100 L of water, and circulate throughout the system for at least fifteen minutes. Drain the whole system. Remove filters and nozzles and clean them separately. Finally flush the system with clean water and allow to drain. Chlorine based cleaners are not recommended.

Rinse water should be discharged onto a designated disposal area, or if this is unavailable, onto unused land away from desirable plants and water sources.

RESISTANT WEEDS WARNING

GROUP A HERBICIDE

Halomac 520 Herbicide is a member of the aryloxyphenoxy propionate group of herbicides. The product has the acetyl CoA carboxylase inhibitor mode of action. For weed resistance management Halomac 520 Herbicide is a Group A herbicide.

Some naturally occurring weed biotypes resistant to the product and other inhibitors of acetyl CoA carboxylase herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by the product or other inhibitors of acetyl CoA carboxylase.

Since the occurrence of resistant weeds is difficult to detect prior to use, Macspred accepts no liability for any losses that may result from the failure of the product to control resistant weeds.

Strategies to minimise the risk of herbicide resistance are available. Contact your farm chemical supplier, consultant, local Department of Agriculture, or local Macspred representative.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

- Halomac 520 Herbicide damages cereals and grasses.
- **DO NOT** apply under weather conditions, or from spraying equipment, that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures.
- Cereal crops or grasses planted within twelve weeks of application may be damaged by the residual effects of Halomac 520 Herbicide, particularly on light and red soils.

PROTECTION OF LIVESTOCK

- **DO NOT** graze or cut treated crops for stock food except as specified under withholding periods.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

- Halomac 520 Herbicide is toxic to fish.
- **DO NOT** contaminate streams, rivers or waterways with the chemical or used container.

STORAGE AND DISPOSAL

- Store in the closed original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.
- **DO NOT** store near feedstuffs, fertilisers or seeds.
- Triple rinse or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point.
- If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

SMALL SPILL MANAGEMENT

Wear protective equipment (see SAFETY DIRECTIONS). Apply absorbent material such as earth, sand, cat litter or clay granules to the spill. When absorption is complete, sweep up material and contain in a refuse vessel for disposal (see STORAGE AND DISPOSAL section). If necessary wash the spill area with an alkali detergent and water and absorb this wash liquid for disposal as described above.

SAFETY DIRECTIONS

- Harmful if swallowed.
- Will irritate the eyes and skin.
- Avoid contact with the eyes and skin.
- When preparing spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield or goggles.
- After each day's use, wash gloves, face shield or goggles and contaminated clothing.
- Wash hands after use

FIRST AID

- If poisoning occurs, contact a doctor or Poisons Information Centre (Phone: 13 11 26).
- If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

MATERIAL SAFETY DATA SHEET

Additional information is listed on the Material Safety Data Sheet for Halomac 520 Herbicide which is available from Macspred Pty Ltd on request.

NOTICE TO BUYER

To the extent permitted by law, all conditions and warranties and statutory or other rights or action which buyer or any other user may have against Macspred or Seller are hereby excluded. Macspred hereby gives Notice to Buyer and other users that it will not accept responsibility for any indirect or consequential loss arising from reliance on product information or advice provided by Macspred or on its behalf unless it is established that such information or advice was provided negligently and that the product has been used strictly as directed. Macspred's liability shall, in all circumstances, be limited to replacement of the product or a refund of the purchase price paid therefor.

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