

Product Name: Villain Herbicide  
APVMA Approval No: 93765/140407



Label Name:	Villain Herbicide
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Signal Headings:	POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	ACTIVE CONSTITUENTS: 583 g/L Terbutylazine 67 g/L Pyroxasulfone
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Mode of Action:	GROUP 5   15 HERBICIDE
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Statement of Claims:	For the control of various weeds in wheat (not durum wheat), chickpeas, field peas, lentils and lupins as per the directions for use table.
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Net Contents:	20 L - 1000 L
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Restraints:	This section contains a file attachment.
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Directions for Use:	This section contains a file attachment.
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Other Limitations:	
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Withholding Periods:	Harvest: NOT REQUIRED WHEN USED AS DIRECTED Grazing: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 8 WEEKS AFTER APPLICATION.
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Trade Advice:	
General Instructions:	This section contains a file attachment.
Resistance Warning:	<p><b>RESISTANT WEEDS WARNING</b>  <b>GROUP 5 15 HERBICIDE</b>  Villain Herbicide is a Group 5 and 15 herbicide belonging to both the triazines group which is an inhibitor of photosynthesis at photosystem II and the isoxazoline group of herbicides which has the inhibitor of very long chain fatty acids (VLCFA inhibitors) mode of action. For weed resistance management Villain Herbicide is a Group 5 and 15 Herbicide. Some naturally occurring weed biotypes resistant to Villain Herbicide and other Group 5 and 15 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 Villain Herbicide or any other Group 5 or 15 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Sipcam Pacific Australia Pty Limited accepts no liability for any losses that may result from the failure of Villain Herbicide to control resistant weeds.</p>
Precautions:	
Protections:	<p><b>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</b>  Very toxic to aquatic life. DO NOT contaminate wetlands or watercourses with the product or used containers.</p> <p><b>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS</b>  DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift onto non-target plants, cropping lands or pastures.  DO NOT apply or drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend or in locations where the chemical may be washed or moved into contact with their roots. DO NOT apply on sites where surface water from heavy rain can be expected to run off to areas containing, or to be planted with susceptible crops or plants.  Undersown Pasture Species:  DO NOT undersow with pasture species (legumes or grasses) following the application of Villain.</p>
Storage and Disposal:	<p>Store in the closed, original container in a cool, well ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple rinse containers before disposal. Ensure containers are clean and dry with no visible chemical residue. 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 deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.</p> <p><b>Refillable Containers</b>  Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>

Safety Directions:	May irritate the eyes. May irritate the skin. Avoid contact with eyes and skin. When opening the container and preparing spray, wear cotton overalls, over normal clothing, buttoned to the neck and wrist and a washable hat and elbow length chemical-resistant gloves and a half facepiece respirator with organic vapour cartridge or canister. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing). Wash hands after use. After each day's use wash gloves, and contaminated clothing, respirator and if rubber, wash with detergent and warm water.
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First Aid Instructions:	If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.
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First Aid Warnings:	
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## RESTRAINTS

DO NOT apply by aircraft.

DO NOT apply to waterlogged soil.

DO NOT apply to fields where the slope exceeds 3%.

DO NOT apply if heavy rains or storms are forecast within 3 days.

DO NOT irrigate to the point of water runoff from the treatment area for at least 3 days after application.

DO NOT apply unless incorporation by sowing (IBS) can be performed within 3 days of application.

DO NOT allow first irrigation tailwater from treated fields to enter aquatic and wetland areas including aquacultural ponds, surface streams and rivers

## SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at [apvma.gov.au/spraydrift](http://apvma.gov.au/spraydrift).

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone table/s below provide guidance but may not be sufficient in all situations. Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between three and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. Surface temperature inversion conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

DO NOT apply by a boom sprayer unless the following requirements are met:

- Spray droplets are not smaller than a COARSE spray droplet size category.
- Minimum distances between the application site and downwind sensitive areas are observed (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers').

Buffer zones for boom sprayers

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones		
		Natural aquatic areas	Pollinator areas	Vegetation areas
Up to 1.5 L/ha	0.5 m or lower	50 metres	Not required	20 metres
	1.0 m or lower	140 metres	Not required	55 metres

## Directions for Use

Crop	Situation	Weeds	Rate L/ha	Critical Comments
Wheat (not durum wheat) – (not irrigated)  Chickpeas, field peas, lentils, lupins (not irrigated)	Pre - Sowing	Annual ryegrass, Annual phalaris or paradoxa grass ( <i>Phalaris paradoxa</i> only), Barley grass, Burr medic, Corn gromwell (White iron weed, Sheep weed), Dead nettle, Indian hedge mustard, Long haired poppy, Mint weed, Ox tongue, Prickly lettuce, Shepherd's purse, Silver grass, Sow thistle, Toadrush, Turnip weed, Wild gooseberry, Wild turnip, Wireweed.  <b>Suppression</b> Capeweed Doublegee/ Spiny emex, Great brome ( <i>Bromus diandrus</i> ), Wild oats, Wild radish	1.5	Apply pre-sowing and Incorporate By Sowing (IBS) using knife points and press- wheels only.  Apply 0 to 3 days prior to sowing.  Avoid throwing treated soil into adjacent crop rows.  <i>Cultivation:</i> To optimise weed control apply directly to uncultivated soil. Weed control may be greatly reduced where weed seeds have been buried by cultivation prior to sowing.  Ensure the seed is covered with at least 3cm and preferably 5cm of soil. Refer to the APPLICATION section of the label. The soil should be free of excessive clods, trash and deep furrows. Sufficient rainfall (20 to 30 mm) to wet the soil through the weed root zone is necessary within 2 to 3 weeks of application.  DO NOT use on soils with pH 8.0 and above as unacceptable crop damage may occur. NOTE: Some early crop phytotoxicity may be observed particularly on light soils. Heavy, intense rainfall following application may cause crop damage.  Avoid overlapping sprays and spraying out corners.  To reduce the risks of crop effects refer to the Crop Safety section

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

## GENERAL INSTRUCTIONS

- Villain Herbicide can be used to selectively control weeds in wheat (not durum wheat).
- Ensure complete and even spray coverage of the soil is achieved.
- Weeds buried by cultivation may not be effectively controlled. Heavy rainfall on light soils may cause movement of the herbicide out of the weed seed zone, resulting in reduced weed control.
- Do not apply to recently burnt stubble/trash. After burning, rainfall or cultivation is required to allow Villain Herbicide to reach the soil and not be irreversibly bound by ash. Incomplete burn of stubble results in a mass of material which can act as a physical barrier between the herbicide and germinating weeds – this can be exacerbated in header trials where there may be greater weed seed numbers and higher levels of plant residue.
- Weed control can be particularly affected where Villain is applied to a barrier of stubble, plant residue or other ground cover and there is insufficient following rainfall to transfer Villain to the soil surface and germinating weed seeds.
- Sufficient rainfall (20 to 30 mm rainfall) to wet the soil through the weed root zone is necessary within 2 to 3 weeks of application to make the product effective. Weeds may germinate and emerge before being controlled by Villain Herbicide. A delay in rainfall beyond 3 weeks may result in weeds germinating from depth and surviving.
- Where soil has a high potential for leaching, heavy rainfall between application and crop emergence may result crop damage from movement of herbicide into the crop seed zone.
- Villain will not reliably control emerged weeds. A knockdown herbicide should be used to control emerged weeds at sowing.
- Weeds germinating from depth, weeds just about to emerge, or weeds that have emerged which are not controlled by a knockdown herbicide at sowing may not be controlled by Villain.
- Dense weed populations and multiple germinations (especially Wild radish) may require both a pre-emergent and post emergent herbicide treatment (only one being Villain) to give acceptable control.
- Competition provided by the crop can assist with the final weed control achieved by Villain. Chickpea, field pea, lentil and lupin crops may provide less competition than cereal crops, hence weeds that survive the application of Villain may grow taller (relative to the height of the crop), tiller more and generally give the appearance that weed control is poorer compared to weed control in wheat.

## Suppression of great brome and wild oat

Villain is most effective when grass weed seeds are present on or very close to the soil surface at the time of application. For this reason, it is recommended that Villain is applied to uncultivated soil. As the depth of weed seeds increases, control from Villain tends to decrease. It is rare that all great brome and wild oat weed seeds will be on the soil surface at the time of Villain application, especially considering that these seeds may remain viable in the soil for several seasons. Plants may germinate from seeds buried by the sowing operation in previous seasons, by livestock or by weed seed self-burial mechanisms particularly in some soil types (e.g. cracking clays and sand). Therefore only partial control or suppression of the great brome or wild oat population should generally be expected. In these situations, a follow up application with a suitable post-emergent herbicide may be required to control remaining plants.

## MIXING

Do not mix or load within 20m of any well, dam, intermittent or perennial stream. Shake contents well before use. Ensure sprayer and nozzle filters are clean before preparing the spray mixture. Half fill the spray tank with water and, with the agitators in motion, add the correct amount of Villain directly to the spray tank. Complete filling the tank with agitators in motion. Agitation must continue before and during spraying. If spray is allowed to stand, agitate thoroughly before resuming spraying.

## COMPATIBILITY

Crop damage seen in adverse conditions, particularly wet or waterlogged conditions (refer Crop Safety above) may be exacerbated when Villain is used in conjunction with other herbicides that may also cause crop damage in such conditions. Read and follow all label directions, restraints, plant-back periods, withholding periods, regional use restrictions and safety directions for the tank mix products.

When tank mixing with knock-down herbicides, some reduction in control may be observed compared to the application of the knock-down herbicides alone, particularly on large weeds. Mixtures with products containing paraquat (e.g. Gramoxone and Spray.Seed) require particular attention to these instructions, including ongoing agitation to ensure Villain remains in suspension in the spray tank.

## **APPLICATION**

Villain Herbicide can be applied to either cultivated or un-worked soil 0 to 3 days prior to sowing. If cultivated, the soil should be relatively level before spraying and after sowing.

Ensure complete and even spray coverage of the soil is achieved. Poor spray coverage may result from application to ridged or excessively cloddy soil or in situations of high stubble, plant residue or other ground cover. A significant reduction in weed control may result where stubble, plant residue or other ground cover exceeds 50%, and in situations where a 'cold' or incomplete burn of stubble results in a mass of material which can act as a physical barrier between the herbicide and germinating weeds - this can be exacerbated in header trails where there may be greater weed seed numbers and higher levels of plant residue. Weed control can be particularly affected where Villain is applied to a barrier of stubble, plant residue or other ground cover and there is insufficient following rainfall to transfer Villain to the soil surface and the germinating weed seeds.

Standard boom sprayers only are recommended and must be fitted with by-pass or mechanical agitation. It is recommended that 50 to 100 L water/ha is applied with spray droplets of a COARSE droplet size category. In some situations (e.g. high stubble loads) high water volumes may give higher levels of weed control.

## **Sprayer clean-up**

Following the use of Villain, the spraying equipment should be thoroughly cleaned before it is used for application of other products. Cleaning should occur immediately following the application of Villain. The spray unit should first be completely emptied. The sprayer, including all filters and lines, should be thoroughly rinsed with water, to remove all traces of product. Ensure that the sprayer clean-up is carried out in an area that is clear of waterways, desirable vegetation and tree roots. If using Villain with a tank-mix partner, refer to the sprayer clean-up instructions for the other product, which may be more rigorous than those for Villain.

## **Interval between application and sowing:**

Incorporate by sowing as soon as practicable after application of this product, but no later than 3 days after application.

## **Incorporation By Sowing (IBS)**

Villain should be applied prior to sowing, and incorporated by sowing using knife points and press wheels, or narrow points and harrows. When incorporation is by knife points and press wheels, weeds germinating in the seed row may not be controlled. Weeds germinating from depth, weeds just about to emerge, or weeds that have emerged which are not controlled by a knockdown herbicide at sowing may not be controlled by Villain. Do not use a combination of press wheels plus harrows or chains when sowing. A high level of trash (greater than 50% ground cover) may reduce weed control and hamper the sowing operation. For crop safety, maintain slow to moderate speed to avoid leaving deep furrows and avoid throwing soil into adjacent furrows. Deep furrows may also lead to reduced weed control in the crop row.

## **CROP ROTATION RECOMMENDATIONS**

The active ingredients in Villain break down by microbial degradation, which is favoured by warm, moist aerobic soil. Minimum recropping intervals (months after Villain application) have been established for Villain to minimise the risk of damage to following crops (see table below). However, environmental and agronomic factors make it impossible to eliminate all risk and therefore the potential for damage to following crops exists. Rainfall of less than the minimum interim rainfall required (see table below) may result in extended recropping intervals. Interim rainfall is the total rainfall between the application of Villain and planting of the particular following crop. For recropping with winter crops, where a minimum of 250 mm of interim rainfall is required, if rain from application to the end of spring is less than 125 mm and isolated heavy summer and autumn falls and break rains are required to achieve the 250 mm interim rainfall, then extended recropping intervals may apply.

Observe the following plant-back intervals between the date of application of Villain and the planting date of following crops thus-

Crop to be planted after application of Villain Herbicide	Recropping recommendation	
	Minimum re-cropping interval	Minimum interim rainfall
wheat (not durum wheat) and triticale	0 months	0 mm
Cotton, maize, mung beans, sorghum, soybeans	5 months	150 mm
Barley, canola*, chickpeas**, faba beans, field peas**, lentils**, lupins**, vetch and subterranean clover	9 months	250mm
Durum wheat, oats, lucerne, medic	21 months	550 mm

These plant-backs are based on normal seasonal rainfall and need both the months and rainfall minimums. If there is a prolonged dry period and there are isolated heavy falls, the plant-back interval may need to be longer than indicated by the rainfall totals and further advice should be sought from Sipcam Pacific Australia Pty Ltd.

\*For canola sown the year after application there may occasionally be some crop stunting but no yield reductions have been measured.

\*\*Chickpeas, field peas, lentils and lupins can be sown immediately after the application of Villain where Villain has not already been incorporated. However, where Villain has been incorporated into the soil, for example, by a previous sowing operation for a subsequently failed crop, these legume crops should not be sown for at least 9 months after the application of Villain.

For advice on crops and situations not listed above, contact Sipcam Pacific Australia Pty Ltd.

## CROP SAFETY

The safety of Villain Herbicide is due to both physically placing seed below the treated soil and to biological tolerance. A crop which is slow to germinate, emerge and grow due to frost, waterlogging, insects or disease will be less tolerant of any herbicide uptake. The following factors are most important for crop safety-

- DO not plant durum wheat after the application of this product as it may be severely damaged.
- Ensure the seed is covered with at least 3cm and preferably 5cm of soil.
- Heavy rain after application onto ridged soil in particular may cause crop damage from Villain Herbicide washed into the seed furrow.
- Avoid soils which are prone to water logging or where the furrows are likely to collapse after sowing.
- Avoid using fungicide seed treatments known to reduce seedling vigour.
- Villain may occasionally delay emergence or flowering of winter legume crops.
- The Luxor variety of albus lupin has been identified as potentially more sensitive to Villain than other lupin varieties, particularly in situations of late sowing and/or wet conditions around the time of sowing.
- Sowing with disc seeders may lead to unacceptable crop damage.