

Product Name: Smart Knockdown 500 Herbicide
APVMA Approval No: 95432/145676



Label Name:	Smart Knockdown 500 Herbicide
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Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	ACTIVE CONSTITUENT: 500 g/kg FLUMIOXAZIN
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Mode of Action:	GROUP 14 HERBICIDE
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Statement of Claims:	For rapid knockdown and control of various grass and broadleaved weeds when mixed with certain glyphosate herbicides as per the Directions for Use table.
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Net Contents:	NET CONTENTS: 500 g - 10 kg
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Restraints:	This section contains file attachment.
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Directions for Use:	This section contains file attachment.
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Other Limitations:	
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Withholding Periods:	WITHHOLDING PERIODS
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	<p>Cereal Grains (Wheat, Barley, Oats, Maize and Sorghum), Pulses (Lupins, Chickpeas, Faba Beans, Field Peas, Lentils and Mungbeans), Oilseeds (Soybeans and Sunflowers) and Cotton:</p> <p>GRAZING: DO NOT ALLOW LIVESTOCK TO GRAZE VEGETATION PRESENT AT THE TIME OF TREATMENT FOR 2 WEEKS AFTER APPLICATION. DO NOT GRAZE OR CUT CROPS PLANTED FOLLOWING TREATMENT FOR STOCK FOOD FOR 6 WEEKS AFTER APPLICATION.</p> <p>HARVEST: NOT REQUIRED WHEN USED AS DIRECTED</p> <p>Sugarcane: DO NOT HARVEST FOR 22 WEEKS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 22 WEEKS AFTER APPLICATION.</p>
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Trade Advice:	
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General Instructions:	This section contains file attachment.
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Resistance Warning:	<p>RESISTANT WEEDS WARNING</p> <p>Smart Knockdown 500 Herbicide is a member of the N-phenylphthalimides group of herbicides. The mode of action of Smart Knockdown 500 Herbicide is to inhibit protoporphyrinogen oxidase. For weed resistance management, Smart Knockdown 500 Herbicide is a Group 14 herbicide.</p> <p>Some naturally occurring weed biotypes resistant to Smart Knockdown 500 Herbicide and other Group 14 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 Smart Knockdown 500 Herbicide or other Group 14 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Crop Smart Pty Ltd accepts no liability for any losses that may result from the failure of Smart Knockdown 500 Herbicide to control resistant weeds. Strategies to minimize the risk of herbicide resistance are available. Contact your farm chemical supplier, consultant or local Department of Agriculture.</p>
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Precautions:	<p>RE-ENTRY PERIOD</p> <p>DO NOT enter treated areas until the spray has dried unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.</p> <p>WARNING THIS PRODUCT CONTAINS FLUMIOXAZIN, WHICH CAUSES BIRTH DEFECTS IN CERTAIN LABORATORY ANIMALS. WOMEN OF CHILD BEARING AGE ARE ADVISED NOT TO MIX, LOAD OR SPRAY THIS PRODUCT. THEY SHOULD KEEP OUT OF CROPS BEING SPRAYED.</p>
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Protections:	<p>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS DO NOT apply Smart Knockdown 500 Herbicide under weather conditions (e.g. wind) or from spray equipment that may cause spray to drift onto nearby susceptible crops/plants, cropping lands or pastures. Care should be taken to avoid damage to adjoining native</p>
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	<p>grasses or grass crops. Smart Knockdown 500 Herbicide should not be applied through misting equipment or any other method likely to cause excessive drift.</p> <p>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT</p> <p>DO NOT contaminate streams, rivers or watercourses with the product or used containers. DO NOT apply Smart Knockdown 500 Herbicide if wind is likely to cause drift onto natural and impounded lakes, watercourses, streams or rivers.</p>
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Storage and Disposal:	<p>STORAGE AND DISPOSAL</p> <p>Store in the closed, original container in a dry, cool well-ventilated area out of direct sunlight. DO NOT store in or expose product to wet conditions. Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers.</p> <p>DO NOT dispose of undiluted chemicals on-site. Single-rinse or shake remainder into spray tank/water/dip/drench, etc. Do not dispose of undiluted chemicals on site. 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>SMALL SPILL MANAGEMENT</p> <p>Sweep up material and contain in a refuse vessel for disposal in the same manner as for containers (see Storage and Disposal).</p>
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Safety Directions:	<p>SAFETY DIRECTIONS</p> <p>Poisonous if absorbed by skin contact or swallowed. May irritate the skin, nose and throat. Will irritate the eyes. Avoid contact with eyes and skin. When using together with other products, consult their label safety directions. When opening the container, preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length chemical resistant gloves and goggles. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, goggles, and contaminated clothing.</p>
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First Aid Instructions:	<p>FIRST AID</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26.</p>
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First Aid Warnings:	
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RESTRAINTS

1. CEREAL GRAINS (WHEAT, BARLEY, OATS, MAIZE AND SORGHUM), PULSES (LUPINS, CHICKPEAS, FABA BEANS, FIELD PEAS, LENTILS AND MUNGBEANS), OILSEEDS (SOYBEANS AND SUNFLOWERS) AND COTTON.

RESTRAINTS

DO NOT apply by aircraft.

DO NOT apply by a vertical sprayer.

DO NOT apply by misting machines.

DO NOT treat weeds under poor growing or dormant conditions (such as occur in drought, waterlogging, disease, insect damage or following frosts) as reduced control may result. Weeds should be actively growing at time of treatment.

DO NOT apply in high pH water (pH >7).

DO NOT allow the spray mix to stand overnight.

DO NOT irrigate up to the point of runoff for at least 3 days after application.

2. SUGARCANE

RESTRAINTS

DO NOT apply by aircraft.

DO NOT apply in areas where slope exceeds 4%.

DO NOT apply for enhanced knockdown if weeds are stressed from drought, frost or waterlogging.

DO NOT apply for residual weed control until the start of summer rains when significant soil wetting rain has occurred (> 15mm) or the soil has been irrigated.

DO NOT apply if heavy rains or storms that are likely to cause runoff are forecast within 3 days.

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

DO NOT apply in high pH water (pH >7) or allow the spray mix to stand overnight.

DO NOT disturb treated soil surface after application.

DO NOT make more than one application per year.

DO NOT plant crops other than sugarcane for 12 months after application.

SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at 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 3 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 not smaller than a COARSE spray droplet size category.
- Minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers') are observed.

Buffer Zone for boom spray

Use situation	Mandatory downwind buffer zone	
	Natural aquatic environment	Vegetation areas
Prior to sowing Cereal grains, Pulses, oil seeds and cotton	15 metres	15 metres
Sugarcane	5 metres	120 metres

DIRECTIONS FOR USE

1. CEREAL GRAINS (WHEAT, BARLEY, OATS, MAIZE AND SORGHUM), PULSES (LUPINS, CHICKPEAS, FABA BEANS, FIELD PEAS, LENTILS AND MUNGBEANS), OILSEEDS (SOYBEANS AND SUNFLOWERS) AND COTTON.

CROP SITUATION	WEEDS CONTROLLED	RATE (g/ha)	CRITICAL COMMENTS
PRIOR TO SOWING Barley, chick peas, cotton, faba beans, field peas, lentils, lupins, maize, mungbeans, oats, sorghum, soybeans, sunflowers and wheat	Follow the Directions for Use of the glyphosate knockdown herbicides, and the addition of the Smart Knockdown 500 Herbicide will increase the speed of brownout and may improve final control of the following weeds: Bellvine (<i>Ipomoea plebeia</i>) Bladder Ketmia (<i>Hibiscus trionum</i>) Caltrop/Peach vine (<i>Tribulus terrestris</i>) Capeweed (<i>Arctotheca calendula</i>) Cow vine (<i>Ipomoea lonchophylla</i>) Doublegee (<i>Emex australis</i>) Erodium False castor oil (<i>Datura stromonium</i>) Liverseed grass (<i>Urochloa panicoides</i>) Marshmallow (<i>Malva parviflora</i>) Medicago spp. Noogoora burr (<i>Xanthium occidentale</i>)	30 g/ha of Smart Knockdown 500 Herbicide plus the label rate of tank mix partner plus an adjuvant ¹	Observe the restraints, rates, mixing and general instructions on the knockdown herbicide product labels. Best results are obtained when applied to young weeds between the 2- and 6- leaf stage. Addition of Smart Knockdown 500 Herbicide to knockdown products will increase the speed at which treated weeds develop visible symptoms of phytotoxicity (compared to the results achieved with tank mix partner products alone) and may improve the final control of certain broadleaved weeds. To ensure the uptake of Smart Knockdown 500 Herbicide. DO NOT sow crops for at least one hour after application. Always refer to the tank-mix partner product label in case a longer sowing interval is required. ¹ Always apply with spray adjuvant containing methyl esters of canola oil fatty acids such as Banjo, Hasten or Kwickin Spray Adjuvant at 0.5 – 1L/100L (use the lower rate on smaller, actively growing weeds), or non-ionic/paraffinic oil adjuvant such as Uptake Spraying Oil at 500mL/100L.

CROP SITUATION	WEEDS CONTROLLED	RATE (g/ha)	CRITICAL COMMENTS
	Paterson's curse (<i>Echium plantagineum</i>) Seedling Lucerne (<i>Medicago sativa</i>) Shepherd's Purse (<i>Capsella bursapastoris</i>) Sowthistle (<i>Sonchus oleraceus</i>) Sunflower(<i>Helianthus annuus</i>) Redroot amaranth (<i>Amaranthus retroflexus</i>) Subterranean clover* (<i>Trifolium subterraneum</i>) Volunteer canola (<i>Brassica napus</i>) Wild radish (<i>Raphanus raphanistrum</i>) Wireweed (<i>Polygonum aviculare</i>) Spurred vetch (<i>Vicia monantha</i>) Turnip weed (<i>Rapistrum rugosum</i>) Annual polymeria (<i>Polymeria pusilla</i>) Dead nettle (<i>Lamium amplexicaule</i>) Black bindweed (<i>Fallopia convolvulus</i>) Red pigweed (<i>Portulaca oleracea</i>) Black pigweed (<i>Trianthema portulacastrum</i>) Tarvine (<i>Boerhavia dominii</i>). If one of the above weeds is the dominant weed, and there is no specific rate for it on the glyphosate		

CROP SITUATION	WEEDS CONTROLLED	RATE (g/ha)	CRITICAL COMMENTS
	product label, consult the label's generic annual-weed rate range. Select from within this range to suit the weed-stage, weed density, conditions etc of your situation. *Suppression only		

Note:

The addition of Smart Knockdown 500 Herbicide to glyphosate will not help to control large weeds or weeds that have hardened up from stress or established big tap roots. Glyphosate resistant weeds may not be controlled by addition of Smart Knockdown 500 Herbicide.

See application section for recommendations to get the best results.

2. SUGARCANE

Smart Knockdown 500 Herbicide applied to enhance knockdown in mixtures with non-selective herbicides, eg. paraquat, glufosinate and also atrazine			
CROP SITUATION	WEEDS CONTROLLED	RATE (g/ha)	CRITICAL COMMENTS
Sugarcane <u>Plant – after filling in or Ratoons</u> To enhance knockdown of vines and broadleaf	Broadleaf and vines < 9 leaf stage. Including: Calopo, Wild rose Square weed/Borreria Billygoat weed/Bluetop Pig weed, Sicklepod Common sida, Spider flower Amaranthus <i>Ipomoea spp</i> , Including	90 – 120 g/ha Smart Knockdown 500 Herbicide plus the label rate of tank mix partner plus an adjuvant	Apply Smart Knockdown 500 Herbicide as a directed spray to the base of the cane plants. Non ionic surfactants may be used but addition of a crop oil concentrate such as Hasten may give a better result. If Calopo or Sicklepod are present then the addition of atrazine may improve knockdown. To ensure knockdown in vines the growing tip needs to be sprayed. Smart Knockdown 500 Herbicide also enhances the knockdown of glyphosate on broadleaved weeds and vines, but great care must be taken not

	Pink convulvlus, Red convulvlus. Bell vine, Morning glory, Star of Bethlehem		to allow glyphosate to drift on to cane.
Smart Knockdown 500 Herbicide applied to provide enhanced knockdown and long term residual weed control			
CROP SITUATION	WEEDS CONTROLLED	RATE (g/ha)	CRITICAL COMMENTS
Sugarcane <u>Plant – after filling in or Ratoon - no trash blanket.</u> Bare soil situations in higher rainfall areas such as wet tropics or with supplementary irrigation Enhanced knockdown of vines and broadleaf and residual control of vines, broadleaf and grasses	Broadleaf and vines < 9 leaf stage Including: Calopo Fleabane Blackberry nightshade Wild rose Square weed/Borreria Billygoat weed/Bluetop Balsam pear Pig weed Giant pigweed Milkweed Sicklepod Common sida Spider flower Amaranthus <i>Ipomoea spp.</i> Pink convulvlus Red convulvlus Morning glory	350 – 560 g/ha	Apply Smart Knockdown 500 Herbicide as a directed spray to the base of the cane plants. If existing weeds are present at the 2 – 8 leaf stage then non-selective herbicides eg. Paraquat should be added to ensure adequate knockdown. If grasses greater than 3 leaf are present the addition of a low rate of diuron to paraquat will improve knockdown. If Calopo or Sicklepod are present then the addition of atrazine may improve knockdown. Non ionic surfactants may be used but addition of a crop oil concentrate such as Hasten will generally give a better knockdown result.
Sugarcane <u>Ratoon with trash blanket, or Plant and ratoon with bare soil with low rainfall and flood irrigation eg. Burdekin area</u> Enhanced knockdown of vines and broadleaf and residual control of vines,	Star of Bethlehem Grasses Summer grass Green summer grass Feathertop - Rhodes grass Barnyard grass Crowsfoot	560 – 700 g/ha	Smart Knockdown 500 Herbicide also enhances the knockdown of glyphosate on broadleaved weeds and vines and then provides on going residual control, but great care must be taken not to allow glyphosate to drift on to cane. A minimum of 200 L/ha of spray mixture is recommended. Smart Knockdown 500 Herbicide should be applied to moist soil and needs follow up rain or irrigation of at least 15mm within 3 weeks to ensure continued good control

broadleaf and grasses		<p>particularly on trash.</p> <p>Efficacy may be reduced by:</p> <ul style="list-style-type: none"> - Soil movement - Very thick trash - Flood irrigation or flood water moving top soil or trash - Long dry conditions after rain or irrigation <p>In these situations reliability may be improved by adding a lower rate of Smart Knockdown 500 Herbicide to other more water soluble herbicides that move further down in the soil profile such as: S-metolachlor, metolachlor or atrazine.</p>
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**NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER CONTRARY TO THIS LABEL
UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION**

GENERAL INSTRUCTIONS

MIXING

Smart Knockdown 500 Herbicide is a water dispersible granule formulation. To ensure even mixing, half-fill the spray tank with clean water. Keep the agitation system engaged. Mix thoroughly until fully dissolved. Add the knockdown herbicide and remaining water. Mix thoroughly. Add spray additive near the end of the filling process to minimize foaming. Always maintain adequate agitation during application and use the tank mix promptly.

APPLICATION

1. CEREAL GRAINS (WHEAT, BARLEY, OATS, MAIZE AND SORGHUM), PULSES (LUPINS, CHICKPEAS, FABA BEANS, FIELD PEAS, LENTILS AND MUNGBEANS), OILSEEDS (SOYBEANS AND SUNFLOWERS) AND COTTON:

Apply in a minimum of 80L spray solution per hectare.

Refer to the Directions for Use and General Instructions of the knockdown herbicide label. As Smart Knockdown 500 Herbicide is a contact herbicide, coverage is important. Performance of Smart Knockdown 500 Herbicide as a knockdown or with a partner on weeds or on volunteer cotton may be reduced with large droplets and poor coverage.

Air induction nozzles that deliver coarse droplets at high travelling speeds, low pressure and low water rates may reduce coverage and herbicide performance.

Air induction nozzles can produce variable results when used with oil.

Best results with Smart Knockdown 500 Herbicide are achieved with coarse droplets produced by a wide-angle flat fan or twin jet nozzles.

2. SUGARCANE:

Smart Knockdown 500 Herbicide applied to enhance knockdown in mixtures with non-selective herbicides, eg. paraquat, glufosinate and also atrazine; and applied to provide enhanced knockdown and long term residual weed control.

Apply in a minimum of 250 L spray solution per hectare.

Refer to the Directions for Use and General Instructions of the knockdown herbicide label.

CROP ROTATION RECOMMENDATIONS

The following rotational crops may be planted after applying Smart Knockdown 500 Herbicide at the registered label rates. Planting earlier than the recommended plant back or re-cropping interval may result in crop injury. For crops not specified below, plant back or re-cropping intervals are unknown. Contact Crop Smart Pty Ltd for guidance prior to sowing.

MINIMUM PLANTBACK OR RECROPPING INTERVAL (MONTHS)

25mm of irrigation or rain is necessary, in addition to the plant back period, after application and before planting the following winter crop species (except faba beans) to improve crop safety.

Crop species - Winter crops	rate (g/ha)
	30
Barley, Lupins, Oats, Triticale	0
Canola	5
Chickpeas, Field pea	0
Lentils	0
Lucerne (Seedling), Medic, Sub clover	0
Wheat	0
Durum wheat	0
Vetch	0
Faba beans	0

SPRAYER CLEANUP

When cleaning the spray equipment, wear cotton overalls buttoned to the neck and wrist and elbow-length chemical resistant gloves.

After Smart Knockdown 500 Herbicide is applied the following steps must be taken to clean the spray equipment.

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Add 1 litre of 3% household ammonia or similar alkaline based tank cleaner for every 100 litres of water, circulate through sprayer for five minutes, then flush all hoses, booms, screens and nozzles for a minimum of fifteen minutes.
4. Drain tank completely.
5. Add enough clean water to spray tank to allow all hoses, booms, screens and nozzles to be flushed for two minutes.
6. Remove all nozzles and screens and rinse them in clean water. Equipment with Smart Knockdown 500 Herbicide residue remaining in the system may cause result in crop injury to the subsequently treated crop