

# POISON

KEEP OUT OF REACH OF CHILDREN  
READ SAFETY DIRECTIONS BEFORE OPENING OR USING

# Director<sup>®</sup> 480EC

## Herbicide

ACTIVE CONSTITUENT: 480g/L CLOMAZONE  
SOLVENT: 400-450g/L HYDROCARBON LIQUID



For the control of certain annual grasses in rice and certain annual broadleaf weeds in cucurbits, green beans, navy beans, poppies, potatoes and tobacco as per the Directions for Use Table.

## CONTENTS: 1- 20, 100 & 110 Litres

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## DIRECTIONS FOR USE

### RICE

#### DRILL AND PASTURE SOD SOWN RICE – APPLICATION PRIOR TO PERMANENT WATER

##### Restrictions:

DO NOT apply from the air by helicopter or fixed wing aircraft.

DO NOT apply Stam\* within 14 days of applying insecticides to avoid serious damage to rice.

DO NOT apply to the variety Illabong.

DO NOT apply high label rates (above 500mL/ha) on light-textured soils and/or soils with low organic carbon content as severe crop injury may result.

CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
<b>Rice</b> Application prior to PERMANENT WATER to drill or sod sown crops.			<b>Application prior to Permanent Water:</b> Rice seed should be sown shallow to encourage rapid emergence which will allow permanent water to be applied earlier. In a sod sown situation the pasture must be properly controlled before the DIRECTOR 480EC tank mixes are applied. Apply the tank mixes by boom spray to give uniform and thorough coverage of the soil and weeds – refer to directions in Application section.
	Barnyard grass <i>Echinochloa</i> spp.  Silver top grass <i>Leptochloa fusca</i>	500 to 600mL/ha plus Shirquat® (paraquat 250g/L) 800mL/ha	Apply to dry soil after the first flush but prior to crop emergence when grass weeds are up to 1 leaf in size. Use of the higher rate will provide slightly longer residual control of grass weeds but may increase early crop effect. A second flush irrigation or rainfall is required within 5 days to activate the DIRECTOR 480EC. Permanent water needs to be applied within 2 weeks of application to minimise likelihood of late germinations of barnyard grass. Carefully inspect bays prior to permanent flooding for late germinations of barnyard grass and re-treat with an alternate product if required. Refer to the Shirquat® or other paraquat product label before applying this mixture.
	Barnyard grass <i>Echinochloa</i> spp.  Silver top grass <i>Leptochloa fusca</i> (suppression only)	500 to 600mL/ha plus Stam* 7.5L/ha	Apply prior to permanent water to emerged rice and barnyard grass up to 4 leaf in size. Allow 1 to 5 days between application and flooding by permanent water. To assist weed control fully submerge grass weeds with permanent water for as long as the rice will tolerate before allowing flood levels to abate. Warm day temperatures after application eg 25-26° C are required for effective results. Refer to the Stam label before applying this mixture.  Transient bleaching, yellowing or leaf burn of rice seedlings can occur following application of this mix. In most cases seedlings usually recover rapidly.

## DRILL, SOD SOWN, DRY BROADCAST AND AERIAL SOWN RICE – APPLICATION AT INUNDATION

### Restrictions:

DO NOT apply by air by helicopter or fixed wing aircraft.

DO NOT apply with a boom spray.

DO NOT apply to the variety Illabong established by the following methods - drill, sod or dry sown prior to permanent flood water.

DO NOT apply high label rates (above 500mL/ha) on light-textured soils and/or soils with low organic carbon content as severe crop injury may result.

CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
<b>Rice</b> Application AT INUNDATION to permanent flood water in drill or sod sown, dry sown and aerial sown crops.			<b>Application at Inundation:</b> Optimum control is achieved by ensuring seedbed is free of germinated grasses prior to flooding. Dilute DIRECTOR 480EC in water and apply as a drip at inundation to permanent flood water using a constant head siphon up to the 4 leaf rice stage. Refer to general instructions for application and water management details.
	Barnyard grass <i>Echinochloa</i> spp.	600mL/ha	Apply to weeds up to 2 leaf in size (or up to the 4 leaf stage in dry sown and aerial sown crops).
	Silver top grass <i>Leptochloa fusca</i> (Suppression only)	600mL/ha	Apply to weeds up to 2 leaf in size.

## DRY BROADCAST AND AERIAL SOWN RICE – FLOODED BAY – PRIMER TREATMENT IN A SPLIT APPLICATION

### Restrictions:

DO NOT apply DIRECTOR 480EC tank mixes into permanent flood water by helicopter or fixed-winged aircraft fitted with a conventional multi nozzle boom.

DO NOT apply with a boom spray.

DO NOT use this application sequence with Saturn\* on long grain rice varieties.

DO NOT apply to the variety Illabong established by dry broadcast sowing prior to permanent flood water.

CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
<b>Rice</b> Application to PERMANENT WATER to crops established by aerial sowing or broadcasted onto soil surface prior to permanent flood.			<b>Application to Permanent Water:</b> To achieve optimum control ensure seedbed is free of germinated grasses prior to flooding. Apply by SCWIIRT method direct to the floodwater of permanently flooded bays by tractor, 4WD motorbike, helicopter or fixed wing aircraft fitted with a Bickley boom. Apply to flood water from pre sowing up to the 2-leaf rice stage. Lock up bays prior to application to cease water movement. Refer to General Instructions for application and water management details. When applying with the Bickley boom always add 41-A drift retardant at a rate of 60g per 100L of spray solution.
	Barnyard grass <i>Echinochloa</i> spp.  Silver top grass <i>Leptochloa fusca</i> (suppression only)	250-300mL/ha + Taipan* 2L/ha	<b>1<sup>st</sup> Application – Pre-sowing</b> Apply to newly flooded bays prior to weed germination. Use the low rate only under situations of low anticipated weed pressure. The higher rate will provide more reliable control where some weeds may have commenced germination or where weed levels are expected to be high. If silver top grass is expected to be a major problem use the full rate (600mL/ha) of DIRECTOR 480EC – refer to the “Application into permanent water - single application” section in the general instructions. Refer to the Taipan label for full directions before applying this mixture.
		Saturn* 2.75-3.75L/ha  or  Ordram® 2.5-3.75L/ha	<b>2<sup>nd</sup> Application – Post-sowing</b> If following with Saturn refer to the Saturn label for full directions before applying. If using Saturn barnyard grass must be at the 0 to 3 leaf stage at application. Use of the higher rate may give slightly more reliable control of barnyard grass but may also increase crop effect. Use the lower rate of Ordram® when barnyard grass is at the 0 to 2 leaf stage. Use the higher rate if barnyard grass is at the 1 to 4 leaf stage and silver top grass is up to 2 leaf stage. Refer to the Ordram® label for full directions before applying this mixture.

## DRY BROADCAST AND AERIAL SOWN RICE – FLOODED BAY - SINGLE APPLICATION

### Restrictions:

DO NOT apply into permanent flood water by helicopter or fixed-winged aircraft fitted with a conventional multi nozzle boom.

DO NOT apply with a boom spray.

DO NOT apply to the variety Illabong established by dry broadcast sowing prior to permanent flood water.

DO NOT apply high label rates (above 500mL/ha) on light-textured soils and/or soils with low organic carbon content as severe crop injury may result.

CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
<b>Rice</b> Application to PERMANENT WATER to crops established by aerial sowing or broadcasted onto soil surface prior to permanent flood.			<b>Application to Permanent Water:</b> To achieve optimum control ensure seedbed is free of germinated grasses prior to flooding. Apply by SCWIIRT method direct to the floodwater of permanently flooded bays by tractor, 4WD motorbike, helicopter or fixed wing aircraft fitted with a Bickley boom. Apply to flood water from pre sowing up to the 2-leaf rice stage. Lock up bays prior to application to cease water movement. Refer to General Instructions for application and water management details. When applying with the Bickley boom always add 41-A drift retardant at a rate of 60g per 100L of spray solution.
	Barnyard grass <i>Echinochloa</i> spp.	400mL/ha	Apply to weeds up to 4 leaf in size which have germinated since flooding.
		500mL/ha	Apply to small weeds up to 2 leaf in size.
		600mL/ha	Apply when high barnyard grass populations are expected or weeds up to 3 leaf in size.
Silver top grass <i>Leptochloa fusca</i> (suppression only)	500mL/ha	Use the highest rate when a range of weed sizes occur up to 4 leaf in size.	
	600mL/ha	Apply to small weeds up to 2 leaf in size which have germinated since flooding.	
		500mL/ha	Apply to small weeds up to 1 leaf in size.
		600mL/ha	Use the higher rate when high silver top populations are expected or weeds are at the 2 leaf stage.

## OTHER CROPS – CUCURBITS, BEANS, POPPIES, POTATOES, TOBACCO

### Restrains:

DO NOT apply by aircraft or through irrigation equipment.

DO NOT apply more than a combined total of 2L/ha on any one paddock in any 12 month period.

DO NOT apply in fog or conditions conducive to fog.

DO NOT apply to soil intended for seedling transplants, with the exception of tobacco.

DO NOT mechanically incorporate DIRECTOR 480EC into soil.

DO NOT apply to soils with both organic carbon content less than 2% and clay content less than 15%, excluding poppy and tobacco crops which have a higher crop tolerance to clomazone at label rates.

### How to use tables:

1. Select rate, or rate range, for use in your crop from **Table 1**.
2. Check crop tolerance using crop tolerance soil type (**Table 2**) of the soil that your crop is to be grown in, to determine maximum crop tolerance range. Crop damage may occur if using rates higher than shown in **Table 2**.

Note: Use lower rate (500mL/ha) in combination with other post plant pre emergent herbicides to broaden weed spectrum.

**TABLE 1**

CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Cucumber Pumpkins Kabocho squash Rockmelons Watermelon Zucchini	Apple of Peru ( <i>Nicandra physalodes</i> ) Blackberry nightshade ( <i>Solanum nigrum</i> ) Fat hen ( <i>Chenopodium album</i> ) Pig weed ( <i>Portulaca oleracea</i> ) Potato weed ( <i>Galinsoga parviflora</i> ) Amaranth ( <i>Amaranthus powellii</i> ) (Suppression only)	0.5 – 1L/ha	DO NOT apply to soil intended for cucurbit seedling transplants. Watermelons are sensitive to DIRECTOR 480EC. Only the minimum suggested rates should be used. Apply post plant pre-emergence before weeds emerge. Some cucurbit varieties may show differing levels of tolerance to DIRECTOR 480EC. See section on SYMPTOMS. Use lower rates in combination with other post plant pre-emergent herbicides to broaden weed spectrum.
Green beans (French beans) Navy beans		0.5 – 1L/ha	Apply post plant pre-emergent before weeds emerge. DIRECTOR 480EC can be used in tank mix with other post plant pre-emergent herbicides. Use lower rates in combination with other post plant pre-emergent herbicides to broaden weeds spectrum.

CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Poppies (Tas only)			Apply post emergence to actively growing weeds as early as the 2 leaf stage of the crop through to the 8 leaf stage. DIRECTOR 480EC is compatible with other poppy herbicides. To broaden weed spectrum, DIRECTOR 480EC can be used in tank mixes or in a multiple spray strategy with other poppy herbicides. Use higher rates on heavier soil types and lower rates on sandy, low organic matter soils. Use in accordance with advice from contracting Company's Advisory Officers.
	Amaranth (Suppression only)	0.5 – 1L/ha	Use the lower rate for small weeds cotyledon to 2 leaf in size. Use the higher rate for high weed pressure or weeds 4-6 leaf in size.
	Fat hen	0.5 – 1L/ha	Use the lower rate for small weeds cotyledon to 2 leaf in size. Use the higher rate for high weed pressure or weeds 2-4 leaf in size.
	Hogweed ( <i>Polygonum aviculare</i> )	0.25 – 0.5L/ha	
	Stagger weed ( <i>Stachys arvensis</i> )	0.5L/ha	Apply at the cotyledon to 4 leaf stage.
Wild radish ( <i>Raphanus raphanistrum</i> ) (Suppression only)	1L/ha	Apply at the cotyledon to 4 leaf stage. Useful suppression only may be achieved. If weed population is high or weeds are greater than 4 leaf in size, use a dedicated wild radish herbicide.	
Potatoes (Tas only)	Apple of Peru Blackberry nightshade Fat hen Pig weed	0.5L/ha	Apply DIRECTOR 480EC in tank mixes with other post plant pre-emergence herbicides to broaden weed spectrum. Apply post plant pre-emergence before weeds emerge. Do not apply to emerged potatoes as crop injury may occur.
Tobacco (Transplanted tobacco only. Do not use on seedling beds)	Potato weed Amaranth (Suppression only)	1 – 2L/ha	Apply pre transplant or up to 7 days post transplant before weeds emerge. If weeds have emerged before application can be made, cultivate shortly before or at the time of treatment, or if prior to planting use in a tank mix with a knockdown herbicide. Use higher rates when weeds pressure is expected or in heavier soil types. Use lower rates on sandy, low organic matter soils.

TABLE 2 is a crop tolerance calculator for use with all crops with the exception of Poppies and Tobacco which have a higher crop tolerance to clomazone at label rates.

**TABLE 2**

Soil Texture	Clay Content	Organic Carbon Content			
		<1%	1 - <2%	2 – 3%	>3%
Sand, Loamy sand, Silt	<15%	Only use in poppies and tobacco		500mL	500mL
Loam, Sandy loam, Silt loam, Sandy clay loam	15 – 30%	Only use in poppies and tobacco	500mL	500mL	1L
Sandy clay, Clay loam, Silt clay loam, Silty clay, Clay	>30%	500mL	500mL	1L	1L

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

**WITHHOLDING PERIOD**

**HARVEST: Not required when used as directed.**

**GRAZING:**

**Rice: Do not graze or cut for stock food for 3 months after application.**

**Other crops: Do not graze or cut for stock food until after harvest.**



## GENERAL INSTRUCTIONS

DIRECTOR 480EC Herbicide is primarily a short residual herbicide for the control of certain annual weeds. Plant uptake of DIRECTOR 480EC occurs through both the roots and the foliage. The movement of the active constituent clomazone within the plant occurs upward and outwards to the leaf. Clomazone is not downward systemic, nor translocated from leaf to leaf.

## SYMPTOMS

Clomazone, the active constituent in DIRECTOR 480EC, inhibits the biosynthesis of photosynthetic pigments of both chlorophyll and carotenoids. Accordingly the foliage of susceptible plants show signs of chlorosis (whitening or bleaching), followed by necrosis (browning).

**Rice Safety:** Transient bleaching of rice seedlings can occur in some circumstances particularly at the higher rates, in situations where rice seedlings protrude above the water level at time of application, and leaves are directly contacted by the concentrated emulsion or if the rice plant is under stress eg slime, salty soils or cold, deep water. In most cases seedlings usually recover rapidly. The variety Illabong is especially susceptible to bleaching. DO NOT apply to the variety Illabong established by the following methods - drill, sod or dry broadcast sown prior to permanent flood water.

In cold conditions, the life of DIRECTOR 480EC in water can be extended which may increase the likelihood of bleaching in sensitive varieties. Under these conditions use the minimum rate specified for the crop growth stage.

DO NOT apply high label rates (above 500mL/ha) on light-textured soils and/or soils with low organic carbon content as severe crop injury may result.

**Cucurbits, Beans, Poppies, Potatoes & Tobacco:** In some situations, one or more of the following conditions such as; higher use rates, sandy soils, soils of low organic matter, or soils of low pH, may cause an increase in the activity of DIRECTOR 480EC and crop damage may occur. Do not apply DIRECTOR 480EC on to soils with both organic carbon content less than 2% and clay content less than 15%, excluding poppy and tobacco crops. Some crop varieties may show differing levels of tolerance to DIRECTOR 480EC. It is recommended to test on a small area to ensure tolerance is acceptable before adoption on a wider scale. For more specific information consult with your local dealer.

## COMPATIBILITY

DIRECTOR 480EC may be tank mixed with other post plant pre-emergence herbicides to broaden the weed control spectrum compared to products applied alone.

**Rice:** DIRECTOR 480EC is compatible with the herbicides Ordram®, Shirquat®, Stam\*, Saturn\*, Londax\*, Taipan\* and the insecticides Astound Duo® and chlorpyrifos.

**Poppies:** DIRECTOR 480EC is compatible with Asulox\*, Brodal\* and Frontier\*. DIRECTOR 480EC is not compatible with Trammat\* and efficacy can be reduced in tank mixes using Starane\* or Comet®. Other herbicide combinations should be used with caution and in accordance to advice from contracting Company's Advisory Officers.

**Other Crops:** When tank mixing with other herbicides (eg. Frontier\*) refer to both product labels to ensure use patterns are compatible ie. post plant pre-emergence and observe all application precautions, rotational guidelines and replanting instructions of each product label.

## RESISTANT WEEDS WARNING

GROUP	<b>Q</b>	HERBICIDE
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DIRECTOR 480EC Herbicide is a member of the Isoxazolidinones group of herbicides. The product has the inhibitors of carotenoid biosynthesis mode of action. For weed resistance management, the product is a Group Q Herbicide.

Some naturally occurring weed biotypes resistant to the product and other Group Q 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 this product or other Group Q herbicides.

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

### **MIXING**

Add half the required volume of water in spray tank and start agitation. If tank mixing, the correct order of addition is Wettable Powders or Water Dispersible Granules first, Liquid Suspensions (i.e. Flowables) next, followed by Soluble Concentrates and DIRECTOR 480EC and other Emulsifiable Concentrates last. Add remainder of water to tank and maintain good agitation at all times until spraying is completed.

### **APPLICATION - Rice**

Inappropriate application techniques can result in highly visible symptoms of spray drift.

DIRECTOR 480EC can be applied:

- prior to permanent water by ground boom spray only, and
- to permanent water by drip applicator at inundation of the permanent flood water, or by SCWIIRT application direct to the water surface of permanently flooded bays, via a properly equipped and calibrated ground sprayer, helicopter or fixed wing aircraft fitted with a Bickley boom.

Refer to the following relevant sections for more detailed information for application on rice.

**Application prior to permanent water:** Always apply DIRECTOR 480EC with either Shirquat\* or with Stam\* as per the Critical Comments. Apply as a broadcast spray with boom height no greater than 60cm above the target. USE ONLY nozzles that the nozzles' manufacturer has rated to deliver a MEDIUM or larger droplet size category as referenced to ASAE S572 or BCPC.

To minimise off-target movement use the lowest pressure and boom height that provides uniform coverage using 100 – 150 litres per hectare. Do not apply to wet soils or wet plants. Do not spray within 100 metres of residential or industrial properties or homes on neighbouring properties.

**Application at inundation:** For drip treatment, dilute DIRECTOR 480EC at the ratio of 3 litres to 17 litres of clean tap water and apply this solution at a rate of 4L/ha. A constant head siphon with a single CP4916 TeeJet flow regulator fitted with a disk orifice plate is recommended to apply the drip treatment into the floodwater at inundation. Refer to a DIRECTOR 480EC calibration chart to guide selection of the appropriate orifice plate.

The preferred method of inundation is to drip into individual bays or by a back fill system utilising a side channel, rather than top filling or flooding through the upper bays.

**Application into permanent water – primer treatment in a split application:** It is essential that both the 1<sup>st</sup> and 2<sup>nd</sup> applications are applied. The 1<sup>st</sup> (pre-sowing) application suppresses weed germinations allowing the rice to develop to the secondary root stage at which time the 2<sup>nd</sup> (post-sowing) application is required for the control of emerging weeds, completing the herbicide program. If one application is applied without the other the technique will result in unsatisfactory weed control. For the 1<sup>st</sup> application follow the application directions in the section **Application into permanent water – single application.**

**Application into permanent water – single application:** Apply by the SCWIIRT method using a tractor, 4 wheel agricultural motorbike, helicopter or fixed wing aircraft fitted with a Bickley boom. Apply to flood water from pre-sowing, up to the 2 leaf rice stage. Because of the

solubility of clomazone and redistribution in water, DIRECTOR 480EC does not need to be applied right to the edges of the bay.

Ground / helicopter application: Dilute the required amount of DIRECTOR 480EC in water (5 to 10 litres/ha) and apply to flooded bay at a distance of 20 to 30 metres between runs. Position dripper nozzles no more than 50cm from the water surface and maintain pressure at or below 200kPa (30 PSI or 2 bar).

Fixed wing (Bickley boom) application: DIRECTOR 480EC must only be applied from a fixed wing aircraft fitted with a Bickley boom which comprises the following:

Two nozzles mounted on droppers, one either side with droppers positioned just outside the first boom hanger (28 – 35% of wingspan);

Dropper length approximately 40-60cm or lower below the trailing edge of the wing;

Solid stream nozzles with bore sufficient to apply desired volume at a pressure of 240 to 310kPa (35 to 45 PSI);

Nozzles orientated rearwards and parallel to the airstream;

Check valves (Spraying Systems diaphragm type 12328, ¾ inch) located behind nozzle to eliminate “trailing” after shut off;

Spray at a maximum wheel height of 2m above the field surface.

Swath widths of approximately 25m are recommended.

Dilute the required amount of DIRECTOR 480EC in water (10 to 20 litres/ha) add 41-A spray drift retardant at the rate of 60g per 100 litres of spray solution and apply to flooded bay. Before commencing aerial application to contoured bays evaluate the layout of the bays to be treated and select the optimum flight pattern to ensure all bays receive the recommended rate of DIRECTOR 480EC.

#### **APPLICATION - Cucurbits, Beans, Poppies, Potatoes & Tobacco**

When using DIRECTOR 480EC as a post plant pre-emergence herbicide all emerged weeds should be controlled by application of a non-selective, non-persistent herbicide or by tillage. The soil surface should be free of large clods of soil that might protect weed seedlings during emergence. Best weed control is achieved when overhead irrigation is used to grow the crop. DIRECTOR 480EC should not be mechanically incorporated into the soil as unacceptable crop injury and variable weed control may occur. When using DIRECTOR 480EC as a post emergence herbicide, ensure weeds are young and actively growing.

Inappropriate application can result in highly visible symptoms of spray drift. DIRECTOR 480EC can be applied as a broadcast or banded application. Use conventional sprayers with either mechanical or by-pass agitation. USE ONLY nozzles that the nozzles' manufacturer has rated to deliver a MEDIUM or larger droplet size category as referenced to ASAE S572 or BCPC. Spray equipment should be properly calibrated to ensure correct application. To minimise off target movement use the lowest pressure and boom height which provides uniform coverage, using 150 to 400 litres per hectare. Do not apply to very wet soils or soils with a rough surface.

**Band spray rate:** The rate of DIRECTOR 480EC for band spraying per hectare of crop is calculated from the broad area rates as follows:

Band width (cm)

----- X Broadcast rate (L) = Band rate (L) per hectare of crop for band spraying

Row spacing (cm)

#### **WATER MANAGEMENT IN RICE CROPS**

**Application prior to permanent water in drill and sod sown rice:** Refer to the Critical Comments for more detailed information.

**Application to permanent water:** It is essential to prevent water movement for at least 3 days after treatment of DIRECTOR 480EC. Floodwater must cover all ground to a sufficient depth at application to maintain water cover until water can be added after the 3 day period. Water levels should then be restored and a continuous uniform depth maintained to assist in weed control. For best results when applying by SCWIIRT, lock up bays prior to application to cease water movement.

Do not drain rice water into regional drains within the withholding period, after DIRECTOR 480EC or DIRECTOR 480EC tank mix application (minimum 28 days for Taipan\*), as defined by the Local Irrigation Authority and/or the NSW Environment Protection Authority or for 10 days, whichever is the greater.

## CROP ROTATION RECOMMENDATIONS

DIRECTOR 480EC treated area may be replanted to any of the specified crops after the interval indicated in the following table. Refer to tank mix partner labels for their specific intervals.

**Minimum Recropping Intervals for DIRECTOR 480EC**

Minimum Recropping INTERVAL (months after application)						
Rate	0	3	6	9	12	15
600mL/ha or less	Poppies Potatoes Cucurbits Beans Tobacco Rice		Barley Oats Wheat Lucerne Rye grass Onions Canola Sub-clover	All other crops		
1.0L/ha	Potatoes Cucurbits Beans Tobacco Rice	Poppies		Barley Oats Wheat Lucerne Rye grass Onions Canola Sub-clover	All other crops	
2.0L/ha	Cucurbits Beans Tobacco	Potatoes Poppies Rice			Barley Oats Wheat Lucerne Rye grass Onions Canola Sub-clover	All other crops

Tolerance of other crops (grown through to maturity) should be determined on a small scale before sowing into larger areas.

Cover crops however may be planted anytime but stand reductions may occur in some areas. Do not graze cover crops, or harvest them for food or feed.

**Replanting:** If initial seedlings fail to produce a stand, the crop may be replanted in fields treated with DIRECTOR 480EC alone. Do not retreat field with a second application of DIRECTOR 480EC. Do not replant treated fields with any crop at intervals, which are

inconsistent with the rotational crop guidelines on this label. When tank mixing observe all application precautions, rotational guidelines and replanting instructions of each product label.

### **PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**

DO NOT apply under meteorological conditions or from spray equipment, which could be expected to cause spray drift onto nearby susceptible plants (including residential and other gardens), adjacent crops, crop lands or pastures.



[spraywisedecisions.com.au](http://spraywisedecisions.com.au) is an online weather forecasting program and is recommended for use when planning your pesticide application.

### **OFF TARGET WHITENING**

DIRECTOR 480EC can cause whitening of sensitive plants (ie. some species of trees, shrubs, ornamentals, agronomic crops, vines and fruits and vegetables) either by spray drift or by volatilisation following product dilution. The effects may last a few weeks and plants usually grow out of it with no long term effect. The application and recommendations for the use of this product should be undertaken only by persons adhering to the following requirements.

#### **Rice:**

This phenomenon is unlikely to occur following application into permanent water in rice. However drift could occur following aerial application through the Bickley boom or by ground application when used prior to permanent water. The following general steps should be taken to minimise the likelihood of this whitening occurring: -refer to the specific use patterns for more detailed recommendations.

#### **General:**

1. Ensure that when the product is being diluted prior to application that it is done away from desirable plants such as roses, ornamentals and vines.
2. DO NOT empty or clean application equipment near homes or sensitive plants.
3. Remove contaminated clothing before entering areas where sensitive plants exist e.g. homes, nurseries or green houses.
4. Apply only with calibrated equipment.
5. DO NOT apply with a boom spray except when applying as per the **Application prior to permanent water:** situation.

#### **Application prior to permanent water:**

1. Do not spray within 100 metres of residential or industrial properties or homes on neighbouring properties.
2. Do not apply by air.
3. Apply only with calibrated equipment.
4. Apply as a broadcast spray with boom height no greater than 60cm above the target. USE ONLY nozzles that the nozzles' manufacturer has rated to deliver a MEDIUM or larger droplet size category as referenced to ASAE S572 or BCPC.
5. Apply to dry soils in 100-150L water per hectare.
6. Do not apply to wet soils and/or wet plants.

#### **Application to permanent water:**

1. Apply only with calibrated equipment.
2. Refer to Application section for specific details. Apply as a drip at inundation using a constant head siphon or

3. Apply to flooded bays using the standard SCWIIRT method by tractor, 4 wheel agricultural motorbike or helicopter using 5-10 litres of water per hectare or
4. Apply as an aerial SCWIIRT method by fixed wing aircraft fitted with a Bickley boom, using 10 to 20 litres of water per hectare. For application by fixed-winged aircraft only use the Bickley boom SCWIIRT method.
5. Bays should always be sprayed downwind from susceptible crops or properties or environmentally sensitive areas.
6. Do not spray within 300m upwind or 50m downwind of susceptible crops or properties or environmentally sensitive areas.
7. Do not spray right to ends and sides of bays to be treated.
8. Ensure nozzles are shut off before leaving last bay to be treated.

### **Cucurbits, Beans, Poppies, Potatoes & Tobacco:**

#### ***Precautions to be taken to minimise potential off-target effects:***

1. DO NOT spray within 100 metres of residential or industrial properties or homes on neighbouring properties.
2. Where it is proposed to spray within 100 metres of a neighbouring property which is used for primary production, the owner of the property must be given written notice of the intention to spray and information which includes the name of the product being sprayed and its effects on susceptible plant species.
3. Ensure that when the product is being diluted prior to application that it is done away from desirable plants such as roses, ornamentals and vines.
4. DO NOT empty or clean application equipment near homes or sensitive plants.
5. DO NOT apply by aircraft, or through irrigation equipment.
6. Remove contaminated clothing before entering areas where sensitive plants exist e.g. homes, nurseries, green houses and other crops.

#### ***Application equipment / calibration:***

Use coarse nozzles with pressure not exceeding 35PSI/250kPa (2.5 bar) with boom height no higher than 60cm above the target.

Apply only with calibrated equipment.

#### ***Minimisation of product volatilisation:***

Apply to dry soils in 150-400L water per hectare.

DO NOT apply to wet soils or wet plants.

DO NOT spray poppy crops beyond the 8 leaf stage.

DO NOT apply in wind gusts over 12km/hr or when weather conditions favour the formation of inversion layers.

Weather resulting in warm, high moisture soils increases the volatility potential of DIRECTOR 480EC. Sunlight may also heat the soil surface, evaporating soil moisture and causing an inversion effect. This inversion effect causes the product to move to the soil surface where it is more subject to volatilisation.

DO NOT apply in fog or conditions conducive to fog.

### **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

DO NOT contaminate streams, rivers or waterways with DIRECTOR 480EC or used containers.

**DO NOT DRAIN RICE WATER INTO REGIONAL DRAINS WITHIN THE WITHHOLDING PERIOD, AFTER DIRECTOR 480EC OR DIRECTOR 480EC TANK MIX APPLICATION (MINIMUM 28 DAYS FOR TAIPAN\*), AS DEFINED BY THE LOCAL IRRIGATION AUTHORITY AND/OR THE NSW ENVIRONMENT PROTECTION AUTHORITY OR FOR 10 DAYS, WHICHEVER IS THE GREATER.**

### **STORAGE AND DISPOSAL**

Do NOT store near (or allow to contact) fertilisers, fungicides or pesticides. Store in the closed, original container in a well ventilated area, as cool as possible. Do not store for prolonged

periods in direct sunlight. Store in a locked room or place away from children, animals, food, feed stuffs, seed and fertilisers.

**Spillage** – In case of spillage, confine and absorb spilled product with absorbent material such as sand, clay or cat litter. Dispose of waste as indicated below or according to Australian Standard 2507 – Storage and Handling of Pesticides. Do NOT allow spilled product to enter sewers, drains, creeks or any other waterways.

#### **1 – 20L Containers:**

Triple or preferably pressure rinse empty 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 deliver empty packaging for appropriate disposal 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.

#### **100 and 110L Containers:**

Empty containers fully into application equipment. Close all valves and return to point of supply for refill or storage.

### **SAFETY DIRECTIONS**

Harmful if inhaled or swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. Do not inhale vapour. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length nitrile gloves and face shield or goggles. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow length nitrile gloves. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

### **FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26. If swallowed, do NOT induce vomiting. Give a glass of water.

### **ADDITIONAL STATEMENTS (WHS REGULATIONS 2011)**

**Suspected of causing cancer. Causes serious eye damage. May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking. Combustible liquid.**

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid breathing spray. Use only outdoors or in a well-ventilated area. Wear protective gloves, clothing, eye and face protection. IF SWALLOWED: Rinse mouth. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

### **SAFETY DATA SHEET**

For further information refer to the Safety Data Sheet (SDS), which can be obtained from your supplier or from the Nufarm website – [nufarm.com.au](http://nufarm.com.au)

**In case of emergency: Phone 1800 033 498** Ask for shift supervisor. Toll free 24 hours.

### **CONDITIONS OF SALE**

“Any provisions or rights under the Competition and Consumer Act 2010 or relevant state legislation which cannot be excluded by those statutes or by law are not intended to be excluded by these conditions of sale. Subject to the foregoing, all warranties, conditions, rights

and remedies, expressed or implied under common law, statute or otherwise, in relation to the sale, supply, use or application of this product, are excluded. Nufarm Australia Limited and/or its affiliates ("Nufarm") shall not accept any liability whatsoever (including consequential loss), or howsoever arising (including negligence) for any damage, injury or death connected with the sale, supply, use or application of this product except for liability which cannot be excluded by statute."

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APVMA Approval No.: 67712/56686