

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

**TITAN**

# FLUMIOXAZIN 500 WG

## HERBICIDE

ACTIVE CONSTITUENT: 500g/kg FLUMIOXAZIN

GROUP **14** HERBICIDE

For knockdown and residual control of broadleaf weeds and grasses in a range of broadacre crops and in non-crop situations as specified in the Directions For Use table.

APVMA Approval No.: 87182/142547

Pack Size: Water soluble bags either in Aluminium foil bag or PE bag

500g (10 x 50g); 1kg (10 x 100g); 2kg (10 x 200g); 2.5kg (10 x 250g); 3kg (10 x 300g); 5kg (10 x 500g); 10kg (20 x 500g); 20kg (40 x 500g)



**C R O P P R O T E C T I O N**

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IN A TRANSPORT EMERGENCY

**DIAL 000**

POLICE OR FIRE BRIGADE

TRANSPORT AND HANDLING  
NOT A DANGEROUS GOOD  
ACCORDING TO THE AUSTRALIAN  
DANGEROUS GOODS (ADG) CODE  
FOR TRANSPORT BY ROAD AND RAIL

**Restraints (apply to all use patterns):**

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 run-off for at least 3 days after application.

**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)

Spray shields should always be used when using handheld spray equipment.

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 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.
- Mandatory no-spray zones between the application site and downwind sensitive areas are observed.

**MANDATORY NO-SPRAY ZONES**

DO NOT apply if there are aquatic and wetland areas including aquacultural ponds, surface streams and rivers downwind from the application area and within the mandatory no-spray zones shown in the table below.

No-spray zones for protection of the aquatic environment	
Use situation	Downwind mandatory no-spray zone
Fencelines, non-crop boundary areas or prior to sowing (pre-plant knockdown) uses	Not required
All other use patterns	5 metres

DO NOT apply if there are sensitive crops, gardens, landscaping vegetation, protected native vegetation or protected animal habitat downwind from the application area and within the mandatory no-spray zones shown in the table below.

No-spray zones for protection of the terrestrial environment	
Use situation	Downwind mandatory no-spray zone
Fencelines, non-crop boundary areas or prior to sowing (pre-plant knockdown) uses	Not required
Cereal Grains, Pulses, Oilseeds, Cotton, established Lucerne that is at least 12 months old (since planting)	50 metres
Irrigation channel banks or drainage ditches	120 metres

**Restraints (additional):****Table B. TITAN Flumioxazin 500 WG Herbicide applied for control and suppression of weeds in established Lucerne.**

DO NOT apply to Lucerne with more than 15cm of growth as application may result in unacceptable crop injury.

DO NOT apply to Lucerne with any adjuvant or tank mix with any products formulated as an emulsifiable concentrate (EC).

DO NOT use on mixed Lucerne-grass or other Lucerne-pasture stands.

DO NOT use TITAN Flumioxazin 500 WG Herbicide when oversowing Lucerne stands.

DO NOT use on crops intended for human consumption. Use only on Lucerne intended for grazing, hay or Lucerne seed production.

**Table E. TITAN Flumioxazin 500 WG Herbicide applied pre-sowing or post-sowing pre-emergent to provide enhanced knockdown and residual weed control in summer crops.**

DO NOT disturb treated soil surface after application as this may remove TITAN Flumioxazin 500 WG Herbicide.

DO NOT use flood irrigation as a means of incorporation on planting mounds/beds.

**Table G. TITAN Flumioxazin 500 WG Herbicide applied for enhanced knockdown and residual weed control in irrigation channel banks and drainage ditches.**

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

DO NOT disturb treated soil surface after application as this may remove TITAN Flumioxazin 500 WG Herbicide.

DO NOT make more than one application per year.

**Table H. TITAN Flumioxazin 500 WG Herbicide applied for enhanced knockdown and residual weed control in Sugarcane.**

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 run-off are forecast within 3 days.

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.



## DIRECTIONS FOR USE

ALL STATES (except for Cotton – QLD and NSW only)

**Table A. TITAN Flumioxazin 500 WG Herbicide applied as a pre-plant burndown “spike” with glyphosate OR with either paraquat or a diquat/paraquat mixture.**

CROP/SITUATION	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
PRIOR TO SOWING Barley, Chickpeas, Cotton, Faba Beans, Field Peas, Lentils, Lupins, Maize, Mungbeans, Oats, Peanuts, Pigeon Peas, Sorghum, Soybeans, Sunflowers and Wheat	Follow the Directions For Use of the glyphosate or paraquat/diquat knockdown herbicides and the addition of TITAN Flumioxazin 500 WG Herbicide will increase the speed of brownout and may improve final control of the following weeds: Annual Polymeria ( <i>Polymeria pusilla</i> ), Bellvine ( <i>Ipomoea plebeia</i> ), Black Bindweed ( <i>Fallopia convolvulus</i> ), Black Pigweed ( <i>Trianthema portulacastrum</i> ), Bladder Ketmia ( <i>Hibiscus trionum</i> ), Caltrop ( <i>Tribulus terrestris</i> ), Capeweed ( <i>Arctotheca calendula</i> ), Cow Vine ( <i>Ipomoea lonchophylla</i> ), Dead Nettle ( <i>Lamium amplexicaule</i> ), Doublegee ( <i>Emex australis</i> ), <i>Erodium</i> spp., False Castor Oil ( <i>Datura stromonium</i> ), Liverseed Grass ( <i>Urochloa panicoides</i> ), Marshmallow ( <i>Malva parviflora</i> ), <i>Medicago</i> spp., Noogoora Burr ( <i>Xanthium occidentale</i> ), Paterson’s Curse ( <i>Echium plantagineum</i> ), Red Pigweed ( <i>Portulaca oleracea</i> ), Redroot Amaranth ( <i>Amaranthus retroflexus</i> ), Seedling Lucerne ( <i>Medicago sativa</i> ), Shepherd’s Purse ( <i>Capsella bursa-pastoris</i> ), Sowthistle ( <i>Sonchus oleraceus</i> ), Spurred Vetch ( <i>Vicia monantha</i> ), Sunflower ( <i>Helianthus annuus</i> ), Subterranean Clover* ( <i>Trifolium subterraneum</i> ), Tarvine ( <i>Boerhavia dominii</i> ), Turnip Weed ( <i>Rapistrum rugosum</i> ), Volunteer Canola ( <i>Brassica napus</i> ), Wild Radish ( <i>Raphanus raphanistrum</i> ), Wireweed ( <i>Polygonum aviculare</i> )  If one of the above weeds is the dominant weed and there is no specific rate for it on the glyphosate 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	30g/ha TITAN Flumioxazin 500 WG Herbicide plus the label rate of tank mix partner plus an adjuvant#	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 TITAN Flumioxazin 500 WG 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 uptake of TITAN Flumioxazin 500 WG 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.  # Always apply with Hasten Spray Adjuvant or TITAN Duelling Spray Adjuvant at 0.5-1L/100L (use the lower rate on smaller, actively growing weeds) or Uptake Spraying Oil.

**Note:** The addition of TITAN Flumioxazin 500 WG Herbicide to glyphosate, paraquat or diquat 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 TITAN Flumioxazin 500 WG Herbicide. See application section for recommendations to get the best results.

### IMPORTANT – Refer to CROP ROTATION RECOMMENDATIONS prior to use

**Table B. TITAN Flumioxazin 500 WG Herbicide applied for control and suppression of weeds in established Lucerne.**

CROP/SITUATION	WEEDS CONTROLLED	WEED STAGE	RATE	CRITICAL COMMENTS
Established Lucerne that is at least 12 months old (since planting)	For the control of: Annual Ryegrass ( <i>Lolium rigidum</i> ), Carrot Weed ( <i>Cotula australis</i> ), Common Sowthistle ( <i>Sonchus oleraceus</i> ), Dead Nettle ( <i>Lamium aplexicaule</i> ), Flaxleaf Fleabane ( <i>Conyza bonariensis</i> ), Shepherd’s Purse ( <i>Capsella bursa-pastoris</i> ), Silver Grass ( <i>Vulpia</i> spp.), Winter Grass ( <i>Poa annua</i> )  For the suppression of: Awnless Barnyard Grass ( <i>Echinochloa colona</i> ), Capeweed ( <i>Arctotheca calendula</i> ), Clammy Goosefoot ( <i>Chenopodium pumilio</i> ), Fat Hen ( <i>Chenopodium album</i> ), Feathertop Rhodes Grass ( <i>Chloris virgata</i> ), Heliotrope ( <i>Heliotropium europaeum</i> ), Small Flowered Mallow ( <i>Malva parviflora</i> ), Stinging Nettle ( <i>Urtica urens</i> ), Subterranean Clover ( <i>Trifolium subterraneum</i> )	Pre-emergence	280g/ha	DO NOT use on mixed Lucerne-grass or other Lucerne-pasture stands. Only use on pure Lucerne stands. DO NOT use on crops intended for human consumption. Use only on Lucerne intended for grazing, hay or Lucerne seed production. DO NOT use TITAN Flumioxazin 500 WG Herbicide when over-sowing Lucerne stands. DO NOT apply with any adjuvant or tank mix with any products formulated as an emulsifiable concentrate (EC).  <b>TIMING:</b> USE AFTER HEAVY GRAZING, CUTTING OR FOLLOWING KNOCKDOWN WITH PARAQUAT OR PARAQUAT + DIQUAT HERBICIDE TO REDUCE GROUND SHADING IN AUTUMN OR LATE WINTER/SPRING AND CONTROL EMERGED WEEDS.  DO NOT apply to Lucerne with more than 15cm of growth as application will result in burning of treated leaves and stems and may result in unacceptable crop damage. DO NOT apply for residual weed control until the start of the main rain season when significant soil wetting rain has occurred and more rain (at least 15mm) is likely within 3 weeks, or the soil can be irrigated with sprinklers.  Dry weather following application may reduce effectiveness. The period of residual weed control will depend on soil type, rainfall and weed species/density.  Lighter soil types (sand) may experience shorter periods of residual weed control.



IMPORTANT – Refer to CROP ROTATION RECOMMENDATIONS prior to use					
Table C. TITAN Flumioxazin 500 WG Herbicide applied as a burndown for control of volunteer Cotton.					
CROP/SITUATION	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE	STATE	CRITICAL COMMENTS
PRIOR TO SOWING Cotton, Maize, Mungbeans, Sorghum, Soybeans and Sunflowers	Volunteer Cotton including volunteer Roundup Ready Cotton	Up to 4 leaf	45g/ha of TITAN Flumioxazin 500 WG Herbicide plus an adjuvant <sup>#</sup>	QLD, NSW only	DO NOT apply post-sowing pre-emergent. DO NOT sow crops for at least 1 hour after application.  TITAN Flumioxazin 500 WG Herbicide can be tank mixed with glyphosate to control other weeds that are present. Refer to the glyphosate label for the appropriate label rate according to the weeds present.  Heavy, intense rainfall following application and sowing may cause some crop damage. If other residual herbicides are also applied prior to, or after planting, or the seed bed is not well drained this can make the damage worse.  <sup>#</sup> Always apply with Hasten Spray Adjuvant or TITAN Duelling Spray Adjuvant at 0.5-1L/100L (use the lower rate on smaller, actively growing weeds) or Uptake Spraying Oil at 500mL/100L.
Cotton Pre- or Post-sowing, pre-emergence					Apply not later than 1 hour prior to sowing or post-sowing up to 2 days before first crop emergence.  TITAN Flumioxazin 500 WG Herbicide can be tank mixed with glyphosate to control other weeds that are present. Refer to the glyphosate label for the appropriate label rate according to the weeds present.  Heavy, intense rainfall following application and sowing may cause some crop damage. If other residual herbicides are also applied prior to, or after planting, or the seed bed is not well drained this can make the damage worse.  <sup>#</sup> Always apply with Hasten Spray Adjuvant or TITAN Duelling Spray Adjuvant at 0.5-1L/100L (use the lower rate on smaller, actively growing weeds) or Uptake Spraying Oil.

IMPORTANT – Refer to CROP ROTATION RECOMMENDATIONS prior to use					
Table D. TITAN Flumioxazin 500 WG Herbicide applied as a layby application for weed control in Cotton.					
CROP/ SITUATION	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE	CRITICAL COMMENTS	
Cotton Lay-by application	Caltrop ( <i>Tribulus terrestris</i> ) Noogoora Burr ( <i>Xanthium strumarium</i> ) Yellowvine ( <i>Tribulus terrestris</i> & <i>T. micrococcus</i> )	<10cm diameter <4 leaf <10cm diameter	60g/ha plus an adjuvant <sup>#</sup>	Apply as a shielded spray underneath Cotton foliage and to inter rows at 60-90g/ha to control late germinating weeds, or weeds that have escaped previous herbicide operations. Best results are obtained when applied to young weeds between the 2- and 6-leaf stage. Vines that have commenced climbing may not be controlled. <b>Caution:</b> TITAN Flumioxazin 500 WG Herbicide will defoliate any Cotton foliage that is contacted by the spray. Shielded sprayers must be carefully operated to ensure that spray does not make contact with Cotton foliage. DO NOT apply in conditions conducive to drift. DO NOT apply until Cotton plants are at least 40cm tall. DO NOT allow contact with leaves or green bark on stems or trunks.  <sup>#</sup> Always apply with Hasten Spray Adjuvant or TITAN Duelling Spray Adjuvant at 0.5-1L/100L (use the lower rate on smaller, actively growing weeds) or Uptake Spraying Oil.	
	Annual Polymeria ( <i>Polymeria pusilla</i> ) Bellvine ( <i>Ipomea plebeian</i> ) Black Pigweed ( <i>Trianthema portulacastrum</i> ) Bladder Ketmia ( <i>Hibiscus trionum</i> ) Cow/Peach Vine ( <i>Ipomoea lonchophylla</i> ) Dwarf Amaranth ( <i>Amaranthus macrocarpus</i> ) Red Pigweed ( <i>Portulaca oleracea</i> )  Sow Thistle ( <i>Sonchus oleraceus</i> ) Spiked Malvastrum ( <i>Malvastrum americanum</i> )	<6 leaf <12 leaf <12 leaf <6 leaf <12 leaf <4 branch <15cm diameter <4 leaf <10cm diameter	90g/ha plus an adjuvant <sup>#</sup>		

**IMPORTANT – Refer to CROP ROTATION RECOMMENDATIONS prior to use**

**Table E. TITAN Flumioxazin 500 WG Herbicide applied pre-sowing or post-sowing pre-emergent to provide enhanced knockdown and residual weed control in summer crops.**

CROP/ SITUATION	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
<p>PRE- or POST-SOWING pre-emergence Peanuts, Soybean  Enhanced knockdown of vines and broadleaf weeds and residual control of vines, broadleaf and grasses</p>	<p><i>Amaranthus</i> spp., Barnyard Grass (<i>Echinochloa colona</i>), Bladder Ketmia (<i>Hibiscus trionum</i>), Bluetop/Billygoat Weed (<i>Ageratum houstonianum</i>), Calopo (<i>Calopogonium mucunoides</i>), Caltrop/Yellow Vine (<i>Tribulus terrestris</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Feathertop Rhodes Grass (<i>Chloris virgata</i>), Fleabane (<i>Conyza bonariensis</i>), <i>Ipomoea</i> spp. (Bell Vine, Morning Glory, Pink Convolvulus, Star of Bethlehem), Milk/Sow Thistle (<i>Sonchus oleraceus</i>), Milkweed (<i>Euphorbia heterophylla</i>),</p>	<p>Pre-sowing 210-280g/ha  Post-sowing pre-emergent 210g/ha</p>	<p>TITAN Flumioxazin 500 WG Herbicide needs at least 15mm of overhead irrigation or rain to incorporate/activate and therefore should preferably be applied during the main rainfall period when at least 15mm of rain or irrigation is expected within 3 weeks. This 15mm is also necessary after application and before planting Pigeon Pea, Maize, Sorghum, Navy Bean, Cotton, Sunflowers or Mungbeans to improve crop safety.</p> <p>If existing weeds are present at &gt;2 leaf stage then non-selective knockdown herbicides such as paraquat and glyphosate should be used at sufficient rates to control these in mixtures with TITAN Flumioxazin 500 WG Herbicide.</p>
<p>Post fallow PRE-SOWING  Burndown with residual weed control  Maize, Sorghum, Navy Bean  At least 1 month prior to sowing  Cotton, Sunflower, Mungbeans  At least 2 months prior to sowing</p>	<p><i>Phyllanthus</i> spp., Red Pigweed (<i>Portulaca oleracea</i>), Sicklepod (<i>Cassia obtusifolia</i>), Summer Grass (<i>Digitaria ciliaris</i>), Square Weed (<i>Spemacoce latifolia</i>), Wild Rose (<i>Cleome aculeata</i>)</p>	<p>210-280g/ha</p>	<p>Heavy rainfall (&gt;25mm) and prolonged wet weather during emergence may cause crop injury particularly where there has been insufficient previous rainfall to incorporate TITAN Flumioxazin 500 WG Herbicide and the sub-soil has been saturated by flood irrigation. For post-sowing applications this will be worse if application is delayed until seedlings are starting to crack through the soil.</p> <p>Application to Peanuts or Soybeans should be made either prior to planting, or within 2 days of planting.</p> <p>If a field crop is under stress from poor nutrition, lack of moisture, waterlogging, insect or disease pressure, this weakens the crop and it is less able to metabolise flumioxazin. This makes it more susceptible to damage during germination and in early growth, so short term symptoms of phytotoxicity may occur particularly with heavy rainfall. This can also occur when mixing with another herbicide. If this is expected to be a concern, use a lower rate of TITAN Flumioxazin 500 WG Herbicide (maximum of 210g/ha). DO NOT use more than 210g/ha in mixtures with any other herbicides.</p> <p>For Maize, Sorghum, Navy Bean, Cotton, Sunflowers and Mungbeans follow the recommended pre-plant interval and ensure at least 15mm of rain has fallen or overhead irrigation has been applied prior to planting.</p> <p>For winter crops follow the plantback intervals listed below (under “Crop Rotation Recommendations”).</p> <p>Planting any crop seed at a shallower depth than normal with poor soil coverage of the seed can also contribute to crop injury.</p> <p>A minimum of 80L/ha of spray mixture is recommended. Use more water with heavy stubble or trash.</p> <p><b>Efficacy may be reduced by:</b> soil movement, shadowing caused by trash, heavy stubble or large clods, thick trash, long dry conditions after rain or irrigation, high pressure from large seeded weeds that can germinate from moisture at depth through dry surface soil.</p> <p>In these conditions reliability may be improved by the addition of a suitable herbicide for that crop, with stronger grass activity and more solubility. Note that heavy rain soon after sowing can also result in additional phytotoxicity from these other herbicides and so this should be tested before applying to large areas.</p> <p>Weed escapes may require follow-up application of knockdown herbicides.</p> <p>For improved burnout, apply with Hasten Spray Adjuvant or TITAN Duelling Spray Adjuvant at 0.5-1L/100L (use the lower rate on smaller, actively growing weeds) or Uptake Spraying Oil.</p>



SELECTED NON-CROP USES				
Table F. TITAN Flumioxazin 500 WG Herbicide applied for residual weed control of fencelines and non-crop boundary areas.				
USE SITUATION	WEEDS CONTROLLED	WEED STAGE	RATE	CRITICAL COMMENTS
Fencelines Non-crop boundary areas <sup>#</sup>	For the control of: Annual Ryegrass ( <i>Lolium rigidum</i> ), Awnless Barnyard Grass ( <i>Echinochloa colona</i> ), Caltrop ( <i>Tribulus terrestris</i> ), Capeweed ( <i>Arctotheca calendula</i> ), Clammy Goosefoot ( <i>Chenopodium pumilio</i> ), Carrot Weed ( <i>Cotula australis</i> ), Common Sowthistle ( <i>Sonchus oleraceus</i> ), Dead Nettle ( <i>Lamium alexicaule</i> ), Erodium ( <i>Erodium botrys</i> ), Fat Hen ( <i>Chenopodium album</i> ), Feathertop Rhodes Grass ( <i>Chloris virgata</i> ), Flaxleaf Fleabane ( <i>Conyza bonariensis</i> ), Heliotrope ( <i>Heliotropium europaeum</i> ), Lesser Loosestrife ( <i>Lythrum hyssopifolia</i> ), Prickly Lettuce ( <i>Lactuca serriola</i> ), Shepherd's Purse ( <i>Capsella bursa-pastoris</i> ), Silver Grass ( <i>Vulpia</i> spp.), Toad Rush ( <i>Juncus bufonius</i> ), Turnip Weed ( <i>Rapistrum rugosum</i> ), Winter Grass ( <i>Poa annua</i> )  For the suppression of: Small Flowered Mallow ( <i>Malva parviflora</i> ), Stinging Nettle ( <i>Urtica urens</i> )	Pre-emergence	700g/ha	The period of residual weed control will depend on soil type, rainfall and weed species/density.  Lighter soil types (sand) may experience shorter periods of residual weed control.  DO NOT apply for residual weed control until the start of the main rain season when significant soil wetting rain has occurred and more rain (at least 15mm) is likely within 3 weeks. Dry weather following application may reduce effectiveness.  Control emerged weeds with a knockdown herbicide before applying TITAN Flumioxazin 500 WG Herbicide.  To maximise residual weed control, apply to fencelines or non-crop boundary areas where weed and trash levels are low to maximise herbicide contact with the soil surface.  Use of TITAN Flumioxazin 500 WG Herbicide, or other residual herbicides, along fencelines or non-crop boundary areas may lead to soil erosion in sandy soils.  DO NOT apply in areas prone to strong winds or to powdery soils or soils susceptible to wind displacement. DO NOT operate machinery such as mowers and sprayers that may blow treated dust onto crops or native vegetation. DO NOT apply to farm roads or tracks where vehicle traffic may result in dust settling onto crops or native vegetation. DO NOT disturb treated soil surface after application.  <sup>#</sup> Non-crop boundary areas are those around crops that are not currently in crop and will not be sown or planted in the future. Typically, these areas should be no wider than 2 metres.  DO NOT use in industrial, commercial areas or rights-of-way.

Table G. TITAN Flumioxazin 500 WG Herbicide applied for enhanced knockdown and residual weed control in irrigation channel banks and drainage ditches.				
USE SITUATION	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS	
Irrigation channel banks and drainage ditches	<i>Amaranthus</i> spp., Balsam Pear ( <i>Mormordica charantia</i> ), Barnyard Grass ( <i>Echinochloa colona</i> ), Bladder Ketmia ( <i>Hibiscus trionum</i> ), Bluetop/Billygoat Weed ( <i>Ageratum houstonianum</i> ), Calopo ( <i>Calopogonium mucunoides</i> ), Caltrop/Yellow Vine ( <i>Tribulus terrestris</i> ), Crowsfoot Grass ( <i>Eleusine indica</i> ), Feathertop Rhodes Grass ( <i>Chloris virgata</i> ), Fleabane ( <i>Conyza bonariensis</i> ), Green Summer Grass ( <i>Brachiaria subquadriflora</i> ), <i>Ipomoea</i> spp. (Bell Vine, Morning Glory, Pink Convolvulus, Star of Bethlehem), Milk/Sow Thistle ( <i>Sonchus oleraceus</i> ), Milkweed ( <i>Euphorbia heterophylla</i> ), <i>Phyllanthus</i> spp., Red Pigweed ( <i>Portulaca oleracea</i> ), Sicklepod ( <i>Cassia obtusifolia</i> ), Summer Grass ( <i>Digitaria ciliaris</i> ), Square Weed ( <i>Spemacoce latifolia</i> ), Wild Rose ( <i>Cleome aculeata</i> )	560-700g/ha	TITAN Flumioxazin 500 WG Herbicide needs at least 15mm of rain to incorporate/activate and therefore should be applied during the main rainfall period when 15mm of rain is expected within 3 weeks. Channels must be completely empty at the time of application. If the required rain has not fallen and it is necessary to use the irrigation channel, fill it with water and allow it to stand for 24 hours then drain off the water in the channel and run to waste. If existing weeds are present at >2 leaf stage, then non-selective knockdown herbicides such as paraquat or glyphosate should be used to control these in mixtures with TITAN Flumioxazin 500 WG Herbicide.  For improved burnout, apply with Hasten Spray Adjuvant or TITAN Duelling Spray Adjuvant at 0.5-1L/100L (use the lower rate on smaller, actively growing weeds) or Uptake Spraying Oil.	

Table H: TITAN Flumioxazin 500 WG Herbicide applied for enhanced knockdown and residual weed control in Sugarcane.				
CROP/ SITUATION	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS	
Sugarcane Plant – after filling in or Ratoons 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 <i>Amaranthus</i> , <i>Ipomoea</i> spp. Pink Convolvulus, Red Convolvulus, Bell Vine, Morning Glory, Star of Bethlehem	90-120g/ha TITAN Flumioxazin 500 WG Herbicide plus the label rate of tank mix partner* plus an adjuvant *eg paraquat, glufosinate, atrazine	Apply TITAN Flumioxazin 500 WG 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.  TITAN Flumioxazin 500 WG Herbicide also enhances the knockdown of glyphosate on broadleaved weeds and vines, but great care must be taken not to allow glyphosate to drift on to cane.	



**Table H: TITAN Flumioxazin 500 WG Herbicide applied for enhanced knockdown and residual weed control in Sugarcane – continued.**

CROP/ SITUATION	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Sugarcane Plant – after filling in or Ratoon – no trash blanket 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, Pigweed, Giant Pigweed, Milkweed, Sicklepod, Common Sida, Spider Flower Amaranthus, <i>Ipomoea</i> spp., Pink Convolvulus, Red Convolvulus, Morning Glory, Star of Bethlehem Grasses: Summer Grass, Green Summer Grass, Feather Top, Rhodes Grass, Barnyard Grass, Crowsfoot Grass	350-560g/ha	Apply TITAN Flumioxazin 500 WG 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. TITAN Flumioxazin 500 WG 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 200L/ha of spray mixture is recommended. TITAN Flumioxazin 500 WG 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 particularly on trash.
Sugarcane Ratoon with trash blanket or Plant and ratoon with bare soil with low rainfall and flood irrigation eg Burdekin area Enhanced knockdown of vines and broadleaf and residual control of vines, broadleaf and grasses		560-700g/ha	Efficacy may be reduced by: - Soil movement - Very thick trash - Flood irrigation or flood water moving top soil or trash - Long dry conditions after rain or irrigation. In these situations, reliability may be improved by adding a lower rate of TITAN Flumioxazin 500 WG Herbicide to other more water soluble herbicides that move further down in the soil profile such as S-metolachlor, metolachlor or atrazine.

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

**WITHHOLDING PERIODS**

**HARVEST:**

Cereal Grains (Wheat, Barley, Oats, Maize and Sorghum), Pulses (Lupins, Chickpeas, Faba Beans, Field Peas, Lentils, Pigeon Peas, Navy Beans and Mungbeans), Oilseeds (Soybeans, Sunflowers and Peanuts), Cotton and Lucerne: NOT REQUIRED WHEN USED AS DIRECTED.

Sugarcane: DO NOT HARVEST FOR 22 WEEKS AFTER APPLICATION.

**GRAZING:**

Barley, Chickpeas, Faba Beans, Field Peas, Lentils, Lupins, Oats, Wheat: DO NOT ALLOW LIVESTOCK TO GRAZE VEGETATION PRESENT AT 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.

Cotton: DO NOT ALLOW LIVESTOCK TO GRAZE TREATED COTTON CROP, STUBBLE OR GIN TRASH.

Drainage Ditches and Irrigation Channel Banks: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 22 WEEKS AFTER APPLICATION.

Fencelines and Non-Crop Boundaries: DO NOT ALLOW LIVESTOCK TO GRAZE VEGETATION PRESENT AT TIME OF TREATMENT FOR 2 WEEKS AFTER APPLICATION.

Lucerne: DO NOT GRAZE OR CUT CROPS FOR STOCKFOOD FOR 4 WEEKS AFTER APPLICATION.

Maize, Peanuts, Sorghum and Sunflower: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 8 WEEKS AFTER APPLICATION.

Mungbeans, Navy Beans, Pigeon Pea and Soybeans: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 6 WEEKS AFTER APPLICATION.

Sugarcane: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 22 WEEKS AFTER APPLICATION.

## GENERAL INSTRUCTIONS

### MIXING

TITAN Flumioxazin 500 WG Herbicide is a water dispersible granule formulation and is contained within a water soluble bag. The water soluble bags dissolve readily in water.

DO NOT handle water soluble bags or expose to moisture because this may cause breakages. DO NOT touch bags with wet hands or place on wet surfaces. DO NOT damage foil sachets that contain the water soluble bags. Protect unused sachets by keeping them in the original container. Open sachets only as needed.

To ensure even mixing, half-fill the spray tank with clean water. Tear open the necessary number of sachets and drop the water soluble bags contained in them into the spray tank without touching the bags. 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

For application rates up to 90g/ha apply in a minimum of 80L spray solution per hectare.

For application rates above 280g/ha apply in a minimum of 200L spray solution per hectare.

If pH of spraying water is above 7.0, acidify with appropriate buffering agent prior to adding TITAN Flumioxazin 500 WG Herbicide.

### 1. CEREALS, PULSES, OILSEEDS, LUCERNE AND COTTON

Refer to the Directions For Use and General Instructions of the knockdown herbicide label. As TITAN Flumioxazin 500 WG Herbicide is a contact herbicide, coverage is important.

Performance of TITAN Flumioxazin 500 WG 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. DO NOT use air induction nozzles with a spray oil such as Hasten or TITAN Duelling Spray Adjuvant.

Best results with TITAN Flumioxazin 500 WG Herbicide are achieved with coarse droplets produced by wide angle flat fan or twin jet nozzles.

If the partner herbicide requires coarse droplets, then ensure high water volumes >80L/ha are used.

### 2. SUGARCANE

TITAN Flumioxazin 500 WG 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 250L spray solution per hectare.

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

### 3. SELECTED NON-CROP USES

Refer to the Directions For Use and General Instructions of the knockdown herbicide label. As TITAN Flumioxazin 500 WG Herbicide is a contact herbicide, coverage is important.

Performance of TITAN Flumioxazin 500 WG 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. DO NOT use air induction nozzles with a spray oil such as Hasten or TITAN Duelling Spray Adjuvant.

Best results with TITAN Flumioxazin 500 WG Herbicide are achieved with coarse droplets produced by wide angle flat fan or twin jet nozzles.

If the partner herbicide requires coarse droplets, then ensure high water volumes >200L/ha are used.

### CROP TOLERANCE

#### All crops

Crop safety may be compromised where compounding crop factors such as insect pressure, water logging and nutrient deficiency may occur.

### Lucerne

**Warning** – Use only in established Lucerne that is at least 12 months old since planting. TITAN Flumioxazin 500 WG Herbicide should only be applied to established Lucerne crops which have been heavily grazed, recently cut or desiccated following knockdown with paraquat or paraquat+diquat.

The tolerance of Lucerne varieties to TITAN Flumioxazin 500 WG Herbicide can vary with soil type, crop health, stage of growth and degree of moisture and temperature stress. TITAN Flumioxazin 500 WG Herbicide may result in transient crop yellowing and suppression of growth with a resultant initial reduction in biomass. For this reason we recommend application to established, dormant Lucerne during autumn or winter before Lucerne shoot growth has started or between cuttings prior to 15cm of regrowth. However, under normal growing conditions subsequent growth and seed yield should not be affected. Crop damage may be increased if rates higher than 280g/ha are used and in areas where spray overlapping has occurred. Consult your local TITAN AG representative for advice on specific varieties.

### CROP ROTATION RECOMMENDATIONS

The minimum plantback or pre-plant interval for Canola after application of TITAN Flumioxazin 500 WG Herbicide at 30g/ha is 5 months.

The following plantback or re-cropping intervals apply to crops that may be grown during the winter period on rotation with the summer crops, where 210-280g of TITAN Flumioxazin 500 WG Herbicide has been applied.

Crop	Minimum plantback or re-cropping interval
Wheat	2 months
Durum Wheat	3 months
Barley	3 months
Triticale	3 months
Oats	3 months
Lupins	3 months
Faba Beans	none required
Field Peas	1 month
Lentils	4 months
Chickpeas	1 month
Canola	9 months
Lucerne	6 months

For advice on crops not listed contact TITAN AG Pty Ltd.

### EQUIPMENT MAINTENANCE AND USAGE

A 50 mesh primary filter and 80 mesh secondary filter(s) are recommended. The use of in-line nozzle filters is not recommended.

### SPRAYER CLEANUP

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

After TITAN Flumioxazin 500 WG 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 the 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 TITAN Flumioxazin 500 WG Herbicide residue remaining in the system may result in crop injury to the subsequently treated crop.

### COMPATIBILITY

TITAN Flumioxazin 500 WG Herbicide is compatible with: TITAN Glyphosate 450 Herbicide, TITAN Glyphosate 360 Herbicide, TITAN Glyphosate 900 Herbicide, TITAN Glyphosate 540 K Salt Herbicide, TITAN CC & Dry OTT Gly 700 Herbicide, TITAN CC & Liquid OTT Gly 495 K Salt Herbicide, TITAN Titanium 570 Herbicide, TITAN Paraquat 250 Herbicide, TITAN Paraquat 360 Herbicide, TITAN EOS Herbicide, TITAN Diquat 200 Non-Residual Herbicide, TITAN Amine 625 Selective Herbicide, TITAN LV Ester 680 Herbicide, TITAN Amine 475 Herbicide, adjuvants containing Ethyl and Methyl Esters of fatty acids, Methyl Esters of canola oil fatty acids, at 0.5-1L/100L; or non-ionic surfactant paraffinic oil at 0.5L/100L.





## RESISTANT WEEDS WARNING

TITAN Flumioxazin 500 WG Herbicide is a member of the N-phenylphthalimides group of herbicides. The mode of action of TITAN Flumioxazin 500 WG Herbicide is to inhibit protoporphyrinogen oxidase. For weed resistance management, TITAN Flumioxazin 500 WG Herbicide is a Group 14 Herbicide. Some naturally occurring weed biotypes resistant to TITAN Flumioxazin 500 WG 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 TITAN Flumioxazin 500 WG Herbicide or other Group 14 Herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, TITAN AG Pty Ltd accepts no liability for any losses that may result from the failure of TITAN Flumioxazin 500 WG Herbicide to control resistant weeds. Strategies to minimize the risk of herbicide resistance are available. Contact your local TITAN AG representative, consultant or local Department of Agriculture.

GROUP **14** HERBICIDE

## PRECAUTIONS

**Re-Entry Period:** DO NOT allow entry onto treated areas until the spray has dried for low exposure activities such as irrigation and scouting, 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.

DO NOT allow entry onto treated areas for 6 days for high exposure activities such as harvesting, pruning and training, 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.

**TEXT ON SACHET (if containing single water soluble bag):** DO NOT touch or wet the content of this sachet. Tear one end open and empty the contained water soluble bag directly into the spray tank without touching the bag. Add individual water soluble bags slowly. Read the Safety Directions on the product label prior to opening. Not to be sold separately. Before use read all directions on the outer pack.

**TEXT ON SACHET (if containing multiple water soluble bags):** DO NOT touch or wet the content of this sachet. Tear the bag open and empty the contained water soluble bags directly into the spray tank without touching the bags. USE ALL BAGS.

**Note:** Add water soluble bags one at a time under full agitation to avoid blocking filters. Read the Safety Directions on the product label prior to opening. Not to be sold separately. Before use read all directions on the outer pack.

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

DO NOT apply TITAN Flumioxazin 500 WG Herbicide under weather conditions (eg 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 grasses or grass crops. TITAN Flumioxazin 500 WG Herbicide should not be applied through misting equipment or any other method likely to cause excessive drift.

## PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate streams, rivers or watercourses with the product or used containers. DO NOT apply TITAN Flumioxazin 500 WG Herbicide if wind is likely to cause drift onto natural and impounded lakes, watercourses, streams or rivers.

## STORAGE AND DISPOSAL

Store in a locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. 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. Rough handling of product may cause breakage of water soluble bags, especially at low temperatures. DO NOT dispose of undiluted chemicals on-site. Break, crush or puncture sachets and containers and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available bury the empty packaging 500mm 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.

## SMALL SPILL MANAGEMENT

Sweep up material and contain in a refuse vessel for disposal in the same manner as for containers (see Storage and Disposal).

## SAFETY DIRECTIONS

Poisonous if absorbed by skin contact or swallowed. Will irritate the eyes and skin. May irritate the nose and throat. Avoid contact with eyes and skin. When using together with other products, consult their label Safety Directions. Open sachets only as needed. When opening the container, preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow-length chemical resistant gloves and face shield. 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 and face shield and contaminated clothing.

## FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126; New Zealand 0800 764 766.

## FIRST AID WARNING

**WARNING: CONTAINS FLUMIOXAZIN WHICH CAUSES BIRTH DEFECTS IN LABORATORY ANIMALS. WOMEN OF CHILD BEARING AGE SHOULD AVOID CONTACT WITH FLUMIOXAZIN.**

## SAFETY DATA SHEET

Additional information is listed in the safety data sheet (SDS). A safety data sheet for TITAN Flumioxazin 500 WG Herbicide is available from TITAN AG Pty Ltd on request. Call Customer Service on (02) 9999 6655 or visit titanag.com.au

**CONDITIONS OF SALE:** TITAN AG Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on TITAN AG's skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of TITAN AG Pty Ltd has any authority to add to or alter these conditions.

Additional statements required by Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia: May damage fertility or the unborn child. Very toxic to aquatic life with long lasting effects. Precautionary Statements: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. IF exposed or concerned: Get medical advice/attention. Collect spillage. Store locked up. Dispose of contents/container in accordance with local/regional/national regulations.

