CAUTION

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

TITAN

GLUFOSINATE 200

HERBICIDE

ACTIVE CONSTITUENT: 200g/L GLUFOSINATE-AMMONIUM

GROUP 10 HERBICIDE

For non-residual control of broadleaf and grass weeds in various situations as specified in the Directions For Use table.

APVMA Approval No.: 66364/145705

Pack Size: 20L-1000L

TITAN AG
CROP PROTECTION

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SL	Formulation Type **Soluble Liquid Concentrate**

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

DIRECTIONS FOR USE

Restraints: DO NOT apply by aircraft.
DO NOT apply when rain is expected within six hours.
DO NOT apply to weeds under stress due to, for example, very dry, very wet, frosty or diseased conditions.
DO NOT apply under hot, dry conditions (temperatures above 33ºC with a relative humidity below 50%).

Sugarcane: DO NOT apply in areas where slope exceeds 4%.

SPRAY DRIFT RESTRAINTS

Specific definitions for terms used in this section of the label can be found at www.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. 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.

CROP/SITUATION	WEEDS	STATE	RATE	WHP	CRITICAL COMMENTS
Tropical and sub-tropical fruits – inedible peel, including avocado, banana, feijoa, guava, kiwifruit, litchi, mango, pawpaw, passionfruit, pineapple, pitaya (dragon fruit), rambutan plantations Citrus orchards Olive plantations	See list of weeds controlled in Table 1	ALL STATES	1 to 5L/ha	H Nil G 8 weeks	Apply as a directed or shielded spray. Refer to the label section **Application Equipment** for specific information on application methods. **Warnings:** DO NOT apply spray or allow spray drift to contact desirable foliage or green (uncalloused) bark. To avoid potential crop damage, refer to the label sections on **Application Equipment** and **PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**. Controlled Droplet Application equipment must not be used for application in cherry orchards. TITAN Glufosinate 200 Herbicide may be used around trees/vines less than two years old provided they are effectively shielded from spray and spray drift. The recommended rate of use is determined by the following criteria: **WEED SPECIES** Apply the appropriate rate to control the least susceptible weed present as per the lists of weeds controlled in the accompanying tables. **WEED STAGE OF GROWTH** Use the lower rate when weeds are young and succulent (grasses: pre-tillering; broadleaves: cotyledons to 4-leaf) or the population is very sparse. A median rate should be used for medium sized plants (grasses: tillering; broadleaves: 4-leaf to advanced vegetative) and the high rate should be used when weeds are mature (grasses: noding to flowering; broadleaves: budding to flowering). **WEED DENSITY** Use the higher rates when the weed population is dense. Thorough coverage of weeds is essential for good control. **CLIMATIC CONDITIONS** Best results are achieved when applied under warm humid conditions (temperatures below 33°C with a relative humidity above 50%). Control will be reduced and/or slower under cold conditions. Good results will be achieved under most other conditions, however poor results may occur under hot, dry conditions. Weeds that have been hardened or stunted in growth due to stressed conditions should be treated at the maximum rate. **COVERAGE** Complete coverage of weeds is essential for good control. Poor coverage may result in regrowth. **PERENNIAL WEEDS** Apply when weeds are actively growing. Follow-up treatments will be necessary to control regrowth of perennial weeds in most cases.
Pome and stone fruit orchards				H 21 days G 8 weeks	
Tree nut plantations				H Nil G 8 weeks	
Vineyards					
Blackberry, Boysenberry, Loganberry, Raspberry	Primocane and sucker control	NSW, ACT, VIC, TAS only	500mL/100L water	H Nil G 8 weeks	Apply as a directed spray to suckers and primocanes. Contact with flowers, developing fruit or desirable foliage will cause damage. Ensure complete coverage of primocanes/suckers by spraying to the point of run-off, preferably when they are less than 15cm high. Wetting agent (100% non-ionic) may be added at a rate of 25mL/100L or equivalent.
Blackcurrant	See lists of weeds controlled in Table 1	ALL STATES	1 to 5L/ha	H Nil G 8 weeks	The spray should not contact foliage, flowers, fruits or young stems. DO NOT make more than 2 applications per season.

CROP/SITUATION	WEEDS	STATE	RATE	WHP	CRITICAL COMMENTS
Blueberries	See lists of weeds controlled in Table 1	ALL STATES	1 to 5L/ha	H Nil G 8 weeks	DO NOT apply to young, green or uncalloused and damaged Blueberry plants. DO NOT apply to weeds under stress. DO NOT apply in unfavourable weather conditions.
Date Palms (*Phoenix dactylifera*) Green Tea (*Camellia sinensis*) Native Foods [see Note below]	See lists of weeds controlled in Table 1	ALL STATES	1 to 5L/ha	H 1 day G 8 weeks	DO NOT allow spray, including drift, to contact any part of the crop as severe damage or crop destruction may result. It is recommended to use shielded sprayer or hooded spray nozzles when spraying between crop rows or near the emerged crops to avoid crop damage from direct spray and drift. Apply as necessary to actively growing weeds, free from environmental stresses, up to a maximum 3 applications per season. Rotate herbicide mode of action groups within and across growing seasons. Use suitable ground application equipment, including boom sprayer, backpack sprayer, hand lance sprayer, knapsack or CDA. Ensure equipment is correctly calibrated. Use higher rates for perennial grass weeds. Increase the application rate for glufosinate-ammonium as the size, age and/or density of the weeds increase and become more established. Avoid spraying when crops are in flower or fruiting. DO NOT harvest leaves from native pepper or wattles that are close to the ground for food uses.
Note: Native Foods include: Wattles (*Acacia* spp.), Lemon Myrtle (*Backhousia citriodora*), Finger Lime (*Citrus australasica*), Desert Lime (*Citrus glauca*), Mullumbimby Plum (*Davidsonia jerseyana*), Davidson's Plum (*Davidsonia johnsonii*), Queensland Davidson's Plum (*Davidsonia pruriens*), Muntrie Berry (*Kunzea pomifera*), Desert Quandong (*Santalum acuminatum*), Desert Raisin (*Solanum centrale*), Anise Myrtle (*Syzygium anisatum*), Small Red Apple (*Syzygium fibrosum*), Lilly Pilly (*Syzygium lehumannii*), Kakadu Plum (*Terminalia ferdinandiana*) and Native Pepper (*Tasmannia lanceolata*).					
Dubosia	See lists of weeds controlled in Table 1	ALL STATES	1 to 5L/ha	G 8 weeks	Spray should be directed to the base of the plants avoiding contact with the foliage. Best results are achieved when applied under warm humid conditions. Complete coverage of weeds is essential for good control.
Green Bean (French Bean) (Field use only)				H 4 weeks G 4 weeks	Use inter-row shielded sprayer with a fan nozzle delivering coarse droplets. Use lower rates when weeds are young or the population is sparse, and higher rates when weeds are mature or weed population is dense. Apply to actively growing weeds. DO NOT apply more than 1 foliar application per season.
Pyrethrum	Spear Thistle, Cleavers, Hawkbit, Cats Ear, Dandelion plus any weeds listed in Table 1		30-75mL/15L water	G 8 weeks	Apply directly to weeds by knapsack only. Avoid direct contact with pyrethrum.
Oil Tea Tree Nursery stock [(non-food) – seedlings, plugs, potted colour, trees, shrubs, foliage plants, palms, grasses, fruit trees (non-bearing)] Cut flowers including wildflowers and foliage Wildflower crops [see Note below]	See lists of weeds controlled in Table 1		Boom spray: 1-5L/ha Handgun: 300-500mL/100L		Apply spray treatment along the sides of crops and between rows of crops. Avoid overspray or incidental spray drift onto crop, as damage or death of plants may occur. Apply as necessary to actively growing weeds up to a maximum 3 applications per season. Use suitable ground application equipment. Ensure equipment is correctly calibrated. Use higher rates for perennial grass weeds. Increase the application rate as the size of target weeds increases. Only apply spray to actively growing grass weeds free from environmental stresses. Avoid spraying when crops are in flower or fruiting.
Note: Wildflower crops include: Banksia species (*Banksia* spp.) – cultivars and hybrids, Berzelia or Button Brush (*Berzelia* spp.), Black Kangaroo Paw (*Macropidia* spp.) – cultivars and hybrids, Christmas Bells (*Blandfordia grandiflora*), Christmas Bush (*Ceratopetalum gummiferum*), Geraldton Wax and Waxflower species (*Chamelaucium* spp.) – cultivars and hybrids, Kangaroo Paw (A*nigozanthos* spp.) – cultivars and hybrids, Leucadendron species – cultivars and hybrids, Leucospermum species (*Leucospermum* spp.) – cultivars and hybrids (pincushions), Protea (*Protea* spp.) – cultivars and hybrids, Riceflower (*Ozothamnus diosmifolius*), Waratah species (*Telopea speciosissima*) – cultivars and hybrids.					
Strawberries, Cane berry fruits (inter-row) Tomatoes (inter-row)	See lists of weeds controlled in Table 1	ALL STATES	1 to 5L/ha	H Nil G 8 weeks	Apply as a directed or shielded spray to the inter-row area. Take care not to allow spray or spray drift to contact the crop, including Strawberry runners. Refer to GENERAL INSTRUCTIONS for warnings concerning plastic mulch and fumigated/sterilised soil. Determine the recommended rate of use by considering the criteria WEED SPECIES, WEED STAGE OF GROWTH, WEED DENSITY and CLIMATIC CONDITIONS as described above.

CROP/SITUATION	WEEDS	STATE	RATE	WHP	CRITICAL COMMENTS
Sugarcane	See list of weeds controlled in Table 1	QLD, NSW, WA, NT only	1 to 3L/ha (directed application) 1 to 5L/ha (shielded/hooded application)	H 16 weeks G 16 weeks	Determine the recommended rate of use by considering the criteria WEED SPECIES, WEED STAGE OF GROWTH, WEED DENSITY and CLIMATIC CONDITIONS as described above. Apply as a directed or shielded spray. **Directed application:** Refer to recommendations for weed control in Table 1 to check that a label rate in the range 1-3L/ha for directed application is suitable for control of the target weed at its current stage of growth. **Plant cane:** DO NOT apply earlier than just prior to out-of-hand stage. Apply spray mixture across the inter-row area between cane rows. Avoid all contact with cane shoot growing points and minimise spray contact with green cane foliage. Excessive contact with Sugarcane plants may result in damage. **Ratoon cane:** Apply spray mixture across the inter-row area between cane rows. DO NOT apply until cane reaches 100cm overall cane height (top of plants) or 20cm to dewlap (growing point). Avoid all contact with ratoon shoot growing points and minimise spray contact with green cane foliage. Excessive contact with Sugarcane plants may result in damage. Use nozzles that deliver coarse to very coarse droplets and minimise drift, whilst ensuring complete coverage of weeds. The Irvin spray boom has been found to be suitable for the application of TITAN Glufosinate 200 Herbicide in Sugarcane. Use of a bar at the front of the boom to knock down taller weeds may help ensure good coverage and increase performance. **Shielded or hooded application:** Refer to recommendations for weed control in Table 1 to check that a label rate in the range 1-5L/ha for shielded or hooded applications is suitable for control of the target weed at its current stage of growth. Can be applied at all Sugarcane stages provided that the shield is set up so as to completely avoid spray contact with Sugarcane plants. Use nozzles that deliver coarse to very coarse droplets and minimise drift, whilst ensuring complete coverage of weeds. Take care to prevent spray contact with green cane foliage and avoid contact with growing point. Excessive contact with Sugarcane plants may result in damage. **Directed, shielded or hooded application:** To avoid potential crop damage refer to the label sections on: 1. Application. 2. PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS.
SUMMER FALLOW SITUATIONS					
CROP/SITUATION	**WEED**	**WEED STAGE**	**RATE**	**WHP**	**CRITICAL COMMENTS**
Maintenance of Summer Fallow prior to planting; Cereal grains (including Wheat, Barley, Oats, Maize and Sorghum) Pulses (including Chickpeas, Faba Beans, Field Peas, Lentils, Lupins and Mung Beans) Oilseeds (including Canola, Cotton, Soybeans and Sunflowers) DO NOT sow crops until 14 days or more have elapsed after the final application.	Control of: Annual Polymeria, Bellvine, Bladder Ketmia, Caltrop, Dwarf Amaranth, Field Bindweed (European Bindweed), Flax-leaf Fleabane, Paddy Melon, Peach Vine, Red Pigweed, Rhyncho (Rhyncosia), Sesbania Pea, Sowthistle (Milk Thistle), Volunteer Cotton (other than Liberty Link Cotton), Yellow Vine Suppression of: Chinese Lantern (Wild Gooseberry), Noogoora Burr complex	2-6 leaf	3.75L/ha in a minimum of 100L water	G 8 weeks	Apply to actively growing weeds. Good coverage is essential. Refer 'Application' section for details. DO NOT apply more than 3 applications per season. TITAN Glufosinate 200 Herbicide will have an effect on weeds that are larger than the recommended leaf stage, but speed of activity and level of control may be reduced. **CLIMATIC CONDITIONS** Best results are achieved when TITAN Glufosinate 200 Herbicide is applied under warm humid conditions (temperatures below 33°C with a relative humidity above 50%). Under any other conditions efficacy and speed of action may be reduced. DO NOT apply onto weeds when dew, fog or mist is present. Control of most weeds may be improved when TITAN Glufosinate 200 Herbicide is used either as two consecutive applications 10-14 days apart, or as a sequential application following a first application of glyphosate.

COMMERCIAL, INDUSTRIAL, NON-AGRICULTURAL AREAS, FENCELINES IN AGRICULTURAL AREAS AND FORESTRY PLANTATIONS					
CROP/SITUATION	**WEED**	**STATE**	**RATE**	**WHP**	**CRITICAL COMMENTS**
Commercial & Industrial areas, rights-of-way and other non-agricultural areas	See lists of weeds controlled in Tables 1 and 2	ALL STATES	1 to 6L/ha	Nil	Determine the recommended rate of use by considering the criteria WEED SPECIES, WEED STAGE OF GROWTH, WEED DENSITY and CLIMATIC CONDITIONS as described above. **Warnings:** DO NOT allow spray or spray drift to contact desirable plants. To avoid potential crop damage, refer to the label sections on Application Equipment and PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS.
Fencelines in agricultural areas	See lists of weeds controlled in Tables 1 and 2			G 8 weeks	Determine the recommended rate of use by considering the criteria WEED SPECIES, WEED STAGE OF GROWTH, WEED DENSITY and CLIMATIC CONDITIONS as described above. **Warnings:** DO NOT allow spray or spray drift to contact desirable plants. To avoid potential crop damage, refer to the label sections on Application Equipment and PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS.
Commercial & industrial areas, forest plantations, rights-of-way and other non-agricultural areas	Volunteer or wildling *Pinus* spp.		Handgun and knapsack application: 500mL/100L water	Nil	TITAN Glufosinate 200 Herbicide is a non-selective herbicide and will affect most weeds. Its forestry use is designed to improve the control of *Pinus* spp. wildings when pre-plant weed control is carried out. To broaden the weed spectrum, mixing with other herbicides such as glyphosate and metsulfuron-methyl at labelled rates may be necessary.
Forestry plantations (preplant plantation establishment)	Volunteer or wildling *Pinus* spp.	ALL STATES	5L/ha	–	**APPLICATION** Apply with an adjuvant. The addition of an adjuvant eg. Nu-Film* P or Exit* may assist in improving performance. High water volumes or nozzle systems should be used to achieve complete coverage of weeds, which is essential for good control. Handgun and knapsack rates are based on the application of 1000L of spray mixture per sprayed hectare. This is usually adequate to thoroughly wet dense stands of weeds. Less dense stands will require lower water rates. TITAN Glufosinate 200 Herbicide does not provide residual weed control. Refer also to comments in the General Instructions which relate to application. **WEED GROWTH STAGE AND CONDITION** Use on *Pinus* spp. ≤15cm is recommended to maximise efficacy. Apply when weeds are actively growing. Results will be reduced if treated plant is under stress due to very dry, very wet, frosty or diseased conditions. **COVERAGE** Complete coverage of target is essential for good control. Poor coverage may result in regrowth. **CLIMATIC CONDITIONS** Best results are achieved when applied under warm, humid conditions (temperatures below 33°C with a relative humidity above 50%). Good results will be achieved under most other conditions, however poor results may occur under hot, dry conditions. Trials have shown better results from autumn and winter applications than from spring and summer applications. **SYMPTOMS** Visible symptoms will appear within 3 weeks; tree death may take several months depending on initial coverage and size of tree. Follow up treatments may be necessary to control regrowth in some cases.
Line-marking on sports grounds	Turf grasses and other weeds		250 to 500mL/100L water	–	Refer to General Instructions. TITAN Glufosinate 200 Herbicide is a non-selective, non-residual herbicide with limited translocation potential. It is therefore ideally suited for line-marking on sports fields where precise weed control is required. Apply at 6-8 week intervals depending on growth of turf. Apply using single boom or hand wand.

XTENDFLEX® COTTON WARNING: Application of TITAN GLUFOSINATE 200 HERBICIDE to cotton varieties other than XtendFlex® Cotton will result in severe crop injury or crop death.					
CROP/SITUATION	**WEED**	**WEED STAGE**	**RATE**	**WHP**	**CRITICAL COMMENTS**
XtendFlex® Cotton – over-the-top (OTT) application – inter-row directed or shielded/ hooded nozzle application	Control of: Annual Polymeria, Australian Bindweed (*Convolvulus erubescens*), Awnless Barnyard Grass, Bellvine, Barnyard Grass, Black Pigweed, Bladder Ketmia, Caltrop, Dwarf Amaranth, Field Bindweed (European Bindweed), Flaxleaf Fleabane, Feather Top Rhodes Grass, Native Millet, Native Sensitive Weed, Paddy Melon, Peach Vine, Red Pigweed, Rhyncho (Rhyncosia), Sesbania Pea, Sowthistle (Milk Thistle), Volunteer Cotton (other than glufosinate-ammonium tolerant Cotton), Yellow Vine Suppression of: Chinese Lantern (Wild Gooseberry), Noogoora Burr complex	Broadleaf weeds: 2-6 leaf Grass weeds: Pretillering	3.75L/ha in a minimum of 100L water	G 8 weeks	DO NOT apply more than two applications per season. The application window is from crop emergence to BBCH61 + 15 days (ie. from crop emergence to 1st white flower + 15 days). When using two applications, the first application must always be prior to BBCH16 + 14 days (14 days after 6 leaf stage). A minimum 14 day interval must be observed between applications and remain within the application window. DO NOT apply later than BBCH61 + 15 days (15 days after 1st white flower). Apply to actively growing weeds. Good coverage is essential. Refer to Application section for details. The addition of a surfactant is not required. TITAN Glufosinate 200 Herbicide will affect weeds that are larger than the recommended leaf stage, but speed of activity and level of control may be reduced. Apply to actively growing weeds. Good coverage is essential. Refer 'Application' section for details. DO NOT apply more than 3 applications per season. TITAN Glufosinate 200 Herbicide will have an effect on weeds that are larger than the recommended leaf stage, but speed of activity and level of control may be reduced. **CLIMATIC CONDITIONS** Best results are achieved when TITAN Glufosinate 200 Herbicide is applied under warm humid conditions (temperatures below 33°C with a relative humidity above 50%). Poor results may occur under hot, dry conditions. Under cool (below 10°C), dry and low relative humidity conditions speed of action and control may be reduced. **CROP SAFETY** TITAN Glufosinate 200 Herbicide may cause minor and transient spotting on leaves which are directly contacted by spray applications. This has not been shown to have any impact on crop growth and development (including yield).

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

WITHHOLDING PERIODS:

HARVEST (H)

Avocado, Banana, Blackberry, Boysenberry, Citrus Fruit, Dragonfruit, Feijoa, Grapes, Guava, Kiwifruit, Litchi, Loganberry, Mango, Olives, Passionfruit, Pawpaw, Pineapple, Rambutan, Raspberry, Strawberries, Tomatoes, Tree Nuts: NOT REQUIRED WHEN USED AS DIRECTED.

Pome and Stone Fruit: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION.

Sugarcane: DO NOT HARVEST FOR 16 WEEKS AFTER APPLICATION.

Green Bean (French Bean): DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION.

XtendFlex® Cotton: NOT REQUIRED WHEN USED AS DIRECTED.

Date Palms, Green Tea, Native Foods: DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.
DO NOT harvest leaves from native pepper or wattles that are close to the ground for food uses.

Grazing (G)

DO NOT GRAZE OR CUT TREATED AREAS FOR STOCK FOOD FOR 8 WEEKS AFTER APPLICATION.

Summer Fallow: DO NOT GRAZE OR CUT FOR STOCK FOOD A CROP SOWN FOLLOWING A FALLOW SPRAY FOR 6 WEEKS AFTER SOWING.

Sugarcane: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 16 WEEKS AFTER APPLICATION.

XtendFlex® Cotton: DO NOT GRAZE OR CUT TREATED AREAS FOR STOCK FOOD.
DO NOT FEED COTTON GIN TRASH TO LIVESTOCK.

TABLE 1: LIST OF WEEDS CONTROLLED WITH RECOMMENDED APPLICATION RATE				
ANNUAL WEEDS				
COMMON NAME	**SCIENTIFIC NAME**	**Application rates Refer to maximum rate in Directions For Use table**		
		Boom or directed sprayer L/ha	**Handgun mL/100L**	**Knapsack mL/15L**
Amaranthus spp.	*Amaranthus* spp.	2 to 5	500	75
Apple of Peru	*Nicandra physalodes*	1.5 to 3	300	45
Argentine Peppercress	*Lepidium bonariense*	2 to 3	300	45
Awnless Barnyard Grass	*Echinochloa colona*	2.5 to 3.5	350	53
Barley Grass	*Hordeum leporinum*	2 to 3	300	45
Barnyard Grass	*Echinochloa crus-galli*	2 to 5	500	75
Billy Goat Weed	*Ageratum conyzoides*	2 to 5	500	75
Bitter Cress	*Cardamine hirsuta*	2 to 5	500	75
Black Bindweed (Buckwheat) (refer Note 2)	*Fallopia convolvulus*	1.8 to 5	500	75
Bladder Ketmia	*Hibiscus trionum*	3 to 5	500	75
Bordered Panic	*Entolasia marginata*	2 to 4	400	60
Brome Grasses (refer Note 1)	*Bromus* spp.	2 to 3	300	45
Calopo	*Calopogonium mucunoides*	2 to 5	500	75
Caltrop Burr (refer also Table 2)	*Tribulus terrestris*	3 to 5	500	75
Capeweed	*Arctotheca calendula*	1.5 to 5	500	75
Clover (Subterranean)	*Trifolium subterraneum*	1.8 to 3	300	45
Cobbler's Peg	*Bidens pilosa*	2 to 5	500	75
Common Storksbill	*Erodium cicutarium*	1.5 to 4	400	60
Crowsfoot Grass	*Eleusine indica*	3 to 5	500	75
Deadnettle	*Lamium amplexicaule*	2 to 5	500	75
Dwarf Crumbweed	*Chenopodium pumilo*	3 to 5	500	75
Fat Hen	*Chenopodium album*	3 to 5	500	75
Fumitory	*Fumaria officinalis*	1.8 to 5	500	75
Green Crumbweed	*Chenopodium carinatum*	2 to 5	500	75
Lesser Canary Grass (refer also Table 2)	*Phalaris minor*	3 to 5	500	75
Liverseed Grass (refer also Table 2)	*Urochloa panicoides*	1.5 to 5	500	75
Medics (annual)	*Medicago* spp.	1 to 5	500	75
Milk Thistle	*Sonchus oleraceus*	2 to 5	500	75
Mint Weed	*Salvia reflexa*	3 to 5	500	75
New Zealand Spinach	*Tetragonia tetragoniodes*	2 to 5	500	75
Paterson's Curse	*Echium plantagineum*	1 to 3	300	45
Peanuts	*Arachis hypogaea*	1.5 to 3	300	45
Pigweed	*Portulaca oleracea*	3 to 5	500	75
Pinkburr	*Urena lobata*	2 to 5	500	75
Potato Weed	*Galinsoga parviflora*	2 to 5	500	75
Prairie Grass (refer Note 1)	*Bromus unioloides*[1]	4 to 5	500	75
Prickly Lettuce	*Lactuca serriola*	3 to 5	500	75
Red Natal Grass	*Rhynchelytrum repens*	2 to 5	500	75
Ryegrass (annual)	*Lolium rigidum*	2 to 5	500	75
Saffron Thistle	*Carthamus lanatus*	1.5 to 5	500	75
St Barnaby's Thistle	*Centaurea solstitialis*	1.5 to 5	500	75
Sago Weed	*Plantago cunninghamii*	2 to 3	300	45
Scarlet Pimpernel	*Anagallis arvensis*	2 to 5	500	75
Setaria	*Setaria italica*	2 to 5	500	75
Sheep Thistle	*Carduus tenuiflorus*	2 to 5	500	75
Silver Grass	*Vulpia myuros*	2 to 5	500	75
Sorghum/Sudax	*Sorghum bicolor*	2 to 5	500	75
Square Weed	*Spermacoce latifolia*	2 to 5	500	75
Stagger Weed	*Stachys arvensis*	2 to 5	500	75
Star of Bethlehem	*Ipomoea quamoclit*	2 to 5	500	75
Summer Grass	*Digitaria ciliaris*	2 to 5	500	75
Thickhead	*Crassocephalum crepidioides*	3 to 5	500	75
Three-cornered Jack	*Emex australis*	2 to 5	500	75
Tomato	*Lycopersicon esculentum*	2 to 5	500	75
Turnip Weed	*Rapistrum rugosum*	3 to 5	500	75
Variegated Thistle (refer also Table 2)	*Silybum marianum*	2.5 to 5	500	75
Wheat	*Triticum aestivum*	4 to 5	500	75

COMMON NAME	SCIENTIFIC NAME	Application rates Refer to maximum rate in Directions For Use table		
		Boom or directed sprayer L/ha	Handgun mL/100L	Knapsack mL/15L
Wild Carrot	*Daucus glochidiatus*	2 to 5	500	75
Wild Gooseberry	*Physalis minima*	2 to 5	500	75
Wild Mustard	*Sysimbrium orientale*	2 to 5	500	75
Wild Oats (refer also to Table 2)	*Avena* spp.	3 to 5	500	75
Wild Radish	*Raphanus raphanistrum*	5	500	75
Wireweed (refer also to Table 2)	*Polygonum aviculare*	1.5 to 5	500	75
PERENNIAL WEEDS				
COMMON NAME	**SCIENTIFIC NAME**	**Application rates Refer to maximum rate in Directions For Use table**		
		Boom or directed sprayer L/ha	**Handgun mL/100L**	**Knapsack mL/15L**
Blady Grass	*Imperata cylindrica*	3 to 4	400	60
Cape Tulip	*Homeria* spp.	2 to 3	300	45
Centro	*Centrosema pubescens*	1 to 5	500	75
Clover Glycine	*Glycine latrobeana*	1 to 3	300	45
Couch Grass	*Cynodon dactylon*	2.5 to 5	500	75
Cow Pea	*Vigna unguiculata*	1 to 3	300	45
Giant Sensitive Plant	*Mimosa invisa*	2 to 5	500	75
Greenleaf Desmodium	*Desmodium intortum*	1 to 3	300	45
Johnson Grass	*Sorghum halepense*	3 to 5	500	75
Panicum spp.	*Panicum* spp.	2 to 5	500	75
Paspalum spp.	*Paspalum* spp.	3 to 5	500	75
Perennial Bindweed	*Convolvulus arvensis*	2 to 3	300	45
Shamrock	*Oxalis corymbosa*	3	300	45
Sida Weed (refer also to Table 2)	*Sida retusa*	3 to 5	500	75
Silver Leaf Desmodium	*Desmodium uncinatum*	4 to 5	500	75
Siratro	*Macroptilium atropurpureum*	1 to 3	300	45
Stink Grass	*Eragrostis cilianensis*	3 to 5	500	75
White Clover	*Trifolium repens*	3 to 5	500	75
White Eye	*Richardia brasiliensis*	3 to 5	500	75
Willow Herb	*Epilobium* spp.	4 to 5	500	75

Notes:
1. Well-established clumps of Prairie Grass and Brome Grasses may only be suppressed at these rates. Follow-up treatments may be necessary to control regrowth.
2. Good control will be achieved on small and medium sized plants only in non-crop situation.

TABLE 2. FOR CONTROL OF WEEDS IN COMMERCIAL AND INDUSTRIAL AREAS, RIGHTS-OF-WAY AND OTHER NON-AGRICULTURAL AREAS (WHEN REFERRED FROM TABLE 1)

ANNUAL WEEDS				
COMMON NAME	**SCIENTIFIC NAME**	**Application rates Refer to maximum rate in Directions For Use table**		
		Boom or directed sprayer L/ha	**Handgun mL/100L**	**Knapsack mL/15L**
Caltrop Burr	*Tribulus terrestris*	4 to 5	500	75
Deadnettle	*Lamium amplexicaule*	6	600	90
Lesser Canary Grass	*Phalaris minor*	4 to 6	600	90
Liverseed Grass	*Urochloa panicoides*	1.5	150	23
Variegated Thistle	*Silybum marianum*	6	600	90
Wild Oats	*Avena* spp.	5 to 6	600	90
Wireweed	*Polygonum aviculare*	2 to 5	500	75
PERENNIAL WEEDS				
Sida Weed	*Sida retusa*	4 to 5	500	75

GENERAL INSTRUCTIONS

TITAN Glufosinate 200 Herbicide is a non-volatile herbicide with non-selective activity against many annual and perennial broadleaf weeds and grasses. TITAN Glufosinate 200 Herbicide is absorbed by plant foliage and green stems. It is not significantly translocated as an active herbicide throughout the plant, and therefore will only kill that part of a green plant that is contacted by spray. TITAN Glufosinate 200 Herbicide does not provide residual weed control. Visible symptoms of control appear in 3 to 7 days, but complete desiccation may take 20 to 30 days under cool conditions. Best results are achieved when application is made under good growing conditions. Application to weeds under stress (eg. due to continuous severe frosts, dry or waterlogged conditions) should be avoided.

Crop Safety Soil fumigation/sterilisation

TITAN Glufosinate 200 Herbicide is metabolised (broken down) by microorganisms in the soil to become inactive. Soil fumigation or sterilisation will reduce the number of microorganisms present, thus slowing the breakdown of TITAN Glufosinate 200 Herbicide. As damage to transplants or seedlings may occur, it is not advisable to apply TITAN Glufosinate 200 Herbicide in conjunction with soil fumigation or sterilisation.

Plastic mulches

TITAN Glufosinate 200 Herbicide will remain active on inert surfaces such as plastic. Special care should be taken when applying TITAN Glufosinate 200 Herbicide over plastic mulches, as plant contact with the mulch after spraying may result in crop damage.

MIXING

TITAN Glufosinate 200 Herbicide mixes easily with water. Clean water should always be used for mixing with TITAN Glufosinate 200 Herbicide. Ensure that the spray tank is free of any residues of previous spray materials.
Two-thirds fill the spray tank with clean water, and with agitator operating add the required amount of TITAN Glufosinate 200 Herbicide. Add other relevant compatible products. Top the tank up to the required volume with clean water with agitator running.

Tank Mixtures – Additives

Nufarm Liase® (417 g/L ammonium sulphate liquid).
Rate: 2L per 100 litres spray solution.
Nufarm Liase® may be used as an adjuvant to alleviate the adverse effects of high levels of calcium, magnesium and bicarbonate ions in water. Ammonium sulphate may be corrosive to metal parts of the sprayer. Thoroughly flush tanks, pumps and nozzles with water after use. Solubility and impurity profiles of other forms of ammonium sulphate can vary and may reduce the performance of TITAN Glufosinate 200 Herbicide or tank mixtures.

Application Summer Fallows and XtendFlex® Cotton

Apply by ground spraying equipment only. Aim to apply a thorough and even coverage of spray to the target weed. Incomplete coverage may result in poor control. Equipment set-up should be such that adequate coverage, penetration and volume of spray liquid can be achieved while the potential for off-target movement is minimised. TITAN Glufosinate 200 Herbicide should be applied at the recommended rate in sufficient water to give thorough coverage of weeds. Application volumes of at least 100L /ha through nozzles that will deliver a MEDIUM or COARSE spray droplet are recommended.
For inter-row directed or shielded nozzle application in XtendFlex® Cotton, maximum efficacy is obtained by ensuring an even distribution of spray across the furrow. Use a directed spray to avoid shading by the crop which may affect herbicide placement.

Sugarcane

Apply inter-row with directed or shielded/hooded nozzle application. Aim to apply a thorough and even coverage of spray to the target plant. Dense stands of weeds should be thoroughly wetted with spray. Incomplete coverage may result in poor control. Equipment should be such that adequate coverage, penetration and volume of spray liquid can be achieved. It has been found that 300 to 500L/ha has given good results under most weed conditions.
Directed spraying equipment should be set up in such a way that practically no spray intercepts susceptible parts of the crop being sprayed but provides good coverage of weeds. The Irvin spray boom has been found to be suitable for the application of TITAN Glufosinate 200 Herbicide in Sugarcane. Use of a bar at the front of the boom to knock down taller weeds may help ensure good coverage and increase performance.
Shielded/hooded nozzle sprayers should be set up in such a way to ensure that no spray intercepts susceptible parts of the crop being sprayed but provides good coverage of weeds.

Orchards, plantations, vineyards, other row crops, commercial, industrial, non-food crops, nonagricultural areas and forestry plantations

Apply by ground spraying equipment only. Aim to apply a thorough and even coverage of spray to the target plant. Dense stands of weeds should be thoroughly wetted with spray. Incomplete coverage may result in poor control. Equipment should be such that adequate coverage, penetration and volume of spray liquid can be achieved.

Boom or Directed Sprayer Equipment

TITAN Glufosinate 200 Herbicide should be applied at label rates (refer to specific column in the lists of weeds controlled) in sufficient water to give thorough coverage of weeds. It has been found that 300 to 500L/ha has given good results under most weed conditions. Special care must be taken when using sprayer/slasher combination units not to cause dust and turbulence, which can carry spray into non-target areas.

Knapsack and Handgun Equipment

TITAN Glufosinate 200 Herbicide should be applied at label rates (refer to specific columns in the lists of weeds controlled) in adequate water to thoroughly wet the weeds being sprayed, i.e. 500 to 1000L/ha.
Dense stands will require up to 1000L/ha of spray mixture, whereas less dense stands will require less water. High volume application using hollow-cone nozzles for hand spraying is recommended.

Controlled Droplet Application (CDA) Equipment

TITAN Glufosinate 200 Herbicide may be applied through CDA row spraying equipment fitted with a solid (impermeable) shroud or skirt, at rates as recommended for boom or directed sprayers (Refer to specific column in the lists of weeds controlled), provided thorough spray coverage of weeds can be achieved. Apply preferably when weeds are less than 15cm in height, with the equipment set up so that the spray dome only just touches the tops of the weeds. A total spray volume of 20 to 30L/ha has been found to give good results.
DO NOT mix residual herbicides or any spray adjuvants with TITAN Glufosinate 200 Herbicide when using CDA equipment.

Warning: Because the spray solution is highly concentrated particular care must be taken when using TITAN Glufosinate 200 Herbicide through CDA equipment to avoid contact of the spray solution with any part of the crop trunk or canopy. DO NOT apply TITAN Glufosinate 200 Herbicide through equipment fitted with bristle skirts. Particular care should be taken when using CDA equipment around green or uncalloused bark or exposed roots. Please refer to PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS. CDA equipment must not be used for application in cherry orchards.

Sprayer Clean-Up

Clean all equipment after use by thoroughly flushing with water.

RESISTANT WEEDS WARNING

GROUP **10** HERBICIDE

TITAN Glufosinate 200 Herbicide is a member of the phosphinic acid group of herbicides.
TITAN Glufosinate 200 Herbicide is an inhibitor of glutamine synthetase. For weed resistance management TITAN Glufosinate 200 Herbicide is a Group 10 Herbicide. Some naturally occurring weed biotypes resistant to TITAN Glufosinate 200 Herbicide and other Group 10 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 Glufosinate 200 Herbicide or other Group 10 Herbicides. Since 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 Glufosinate 200 Herbicide to control resistant weeds.
Users of TITAN Glufosinate 200 Herbicide over XtendFlex® Cotton must implement practices that minimize the development of resistance in treated weeds. Minimising this risk may best be achieved by following the integrated weed management strategy guidelines summarised below:

1. Aim to enter the XtendFlex® Cotton cropping phase of the rotation with a low weed burden.
2. Integrate as many different weed control options (chemical and cultural) as possible through all phases of the crop rotation.
3. Make every herbicide application count – use registered rates at the correct application growth stage and assess effectiveness.
4. Rotate herbicides with different modes of action throughout the crop rotation.
5. Regularly monitor the effectiveness of resistance management practices.
6. Test weed populations for herbicide resistance status as part of ongoing integrated weed management.
7. Growers should not plant XtendFlex® Cotton in paddocks with populations of confirmed glufosinate-ammonium resistant weeds. It is advised that consultation on Integrated Weed Management be undertaken with an accredited agronomist or program prior to use of TITAN Glufosinate 200 Herbicide over XtendFlex® cotton. More information on Integrated Weed Management can be found at:

- Weedsmart: www.weedsmart.org.au

TITAN AG CROP PROTECTION

- CropLife Australia: http://www.croplife.org.au/industry-stewardship/resistance management.

As with conventional varieties, volunteer and ratoon XtendFlex® Cotton may occur in fallows, and non-cropping areas of a farm such as irrigation ditches, water storages, etc. These plants will not be controlled by the following herbicides so should be controlled in both cropping and non-cropping areas:

- TITAN Glufosinate 200 Herbicide or other glufosinate-ammonium herbicides
- XtendiMax® 2 with VapourGrip® Technology,
- TITAN Dicamba 500 Herbicide,
- TITAN Dicamba 700 SG Herbicide or other dicamba herbicides,
- TITAN CC & Dry OTT Gly 700 Herbicide,
- TITAN Glyphosate 700 Herbicide,
- TITAN Titanium 570 Herbicide,
- TITAN 540 K Salt Herbicide,
- TITAN Glyphosate 450 Herbicide or other glyphosate herbicides.

These plants are best managed with cultivation and/or appropriate registered herbicides (see Integrated Weed Management Strategy Guidelines above). Growers should ensure that they have an effective weed management strategy developed for the control of these weeds.
Herbicide control options for these plants include the following (refer to product labels for further information on use situations):

- Bromicide® 200,
- Fluroxypyr 400,
- Paraquat/diquat combination products,
- TITAN Carfentrazone 240EC Herbicide,
- TITAN Carfentrazone 400EC Herbicide,
- TITAN Paraquat 250 Herbicide,
- Terrad'or® Herbicide.

Resistant Weeds Reporting, Auditing and Surveying
Users of TITAN Glufosinate 200 Herbicide are required to report any adverse events, such as suspected weed resistance, to TITAN AG Pty Ltd, as soon as it is identified. Titan Ag will investigate the incident and produce a report of any incidents of confirmed resistance of weeds to TITAN Glufosinate 200 Herbicide in target weed species which are normally susceptible to this herbicide and forward the report as soon as practicable to the Australian Pesticides and Veterinary Medicines Authority.
Weeds identified to have survived TITAN Glufosinate 200 Herbicide must be controlled by an alternative strategy in order to prevent weeds from setting seed.
Users of TITAN Glufosinate 200 Herbicide over XtendFlex® Cotton must allow TITAN AG or its agents to undertake audits or surveys as necessary to assess management by users of the development of glufosinate-ammonium resistance in target weeds. TITAN AG or its agents may conduct an audit or survey annually on a percentage of fields where TITAN Glufosinate 200 Herbicide has been used over XtendFlex® Cotton.

PRECAUTIONS
Re-entry Period: DO NOT allow entry into treated areas until the spray has dried. When prior entry is necessary, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT
Very toxic to aquatic life. DO NOT contaminate streams, rivers or watercourses with this product or the used container.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS
DO NOT apply under weather conditions or from spraying equipment, that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures. DO NOT apply on desirable foliage or allow spray to drift onto the foliage of desirable plants, trees or vines, as damage will occur. DO NOT allow product to contact green or uncalloused bark (such as on desirable young trees and vines) or cut, cracked, damaged or wounded tissue, where the affected surface is not adequately healed. TITAN Glufosinate 200 Herbicide may be used around desirable trees/vines less than two years old provided they are effectively shielded from spray and spray drift. DO NOT allow desirable plant foliage to contact any inert surface, such as plastic mulches, which have been treated with TITAN Glufosinate 200 Herbicide. DO NOT apply TITAN Glufosinate 200 Herbicide to recently fumigated or sterilised soil.

STORAGE AND DISPOSAL
Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight.
Non-refillable containers: Triple-rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and 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.
Refillable containers: Empty contents fully into application equipment. Close all valves and return to designated collection point for refill or storage.

SAFETY DIRECTIONS
Harmful if absorbed by skin contact or swallowed. Will irritate the eyes and skin. Avoid contact with the eyes and skin. If product on skin, immediately wash area with soap and water. If product in eyes, wash out immediately with water. When opening the container, preparing spray and using the prepared spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat, elbow-length PVC gloves and face shield or goggles. 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 131126; New Zealand 0800 764 766.

SAFETY DATA SHEET
Additional information is listed in the safety data sheet (SDS). A safety data sheet for TITAN Glufosinate 200 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. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.
Precautionary Statements: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF exposed or concerned: Get medical advice/attention. Call a POISON CENTER/doctor if you feel unwell. Get medical advice/attention if you feel unwell. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container in accordance with local/regional/national regulations.

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