

CAUTION

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

TITAN

Pendimethalin 330

Herbicide

ACTIVE CONSTITUENT: 330g/L PENDIMETHALIN

SOLVENT: 558g/L LIQUID HYDROCARBON

GROUP **D** HERBICIDE

For the control of annual ryegrass and wireweed in wheat, barley and peas and annual grasses and certain broadleaved weeds in various crops as per directions for use table.

IMPORTANT: READ THOROUGHLY BEFORE OPENING OR USING THIS PRODUCT.

APVMA Approval No.: 56780/0507

Pack Size: 5L, 20L,
110L, 110L, 120L, 200L



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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.

DIRECTIONS FOR USE

Restrictions: DO NOT sow sensitive summer crops such as sorghum and millets within 12 months of application of TITAN PENDIMETHALIN 330.
DO NOT apply to a poorly prepared seedbed.
DO NOT use TITAN Pendimethalin 330 Herbicide mixed with atrazine on heavy clay soils.
DO NOT apply TITAN Pendimethalin 330 Herbicide where waterlogging is likely to occur.

TABLE 1: PRE-PLANT INCORPORATED TREATMENT (DOUBLE INCORPORATION)

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Cotton	See Weed Table A	QLD, NSW, ACT only	3L	Incorporate into the soil within 24 hours of application. Use a combine with trailing harrows and chain or offset or tandem discs or Lilliston cultivators, set to work to a depth of 2-5cm. Subsequent planting operations in irrigated cotton may remove the TITAN Pendimethalin 330 Herbicide treated soil from hills, leaving an untreated band over the row, requiring a further application of TITAN Pendimethalin 330 Herbicide or other herbicides in that band. When the seedbed is rough, a second incorporation is necessary. TITAN Pendimethalin 330 Herbicide may be applied by aerial or ground spraying. In the Macquarie Valley area, only apply by air when ground is too wet for ground applications. (Refer to Note 1 under "Incorporation"). Use the higher rate on heavy textured soils or those high in organic matter and the lower rate on light to medium textured soils.
Cow peas, Mung beans, Navy beans, Peanuts, Pigeon peas, Soy beans		QLD, NSW, ACT, NT only	2.5-3L	
Sunflowers		QLD, NSW, ACT, VIC, SA only		
Barley, Wheat	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>), Wild Oats* (<i>Avena</i> spp.) *Suppression only	ALL STATES	1.2L	Incorporate into the soil within 24 hours of application (Refer Note 1 under "Incorporation"). Use weighted harrows at 8-13km/hr followed by a cross working with a combine set to work at a depth of 2-5cm at 8-13km/hr. Application to heavier soil types, which have poor structural characteristics or are poorly worked, may result in insufficient and uneven incorporation and unsatisfactory weed control. Heavy soils, which are cloddy or have a surface crust or surface seal, should be avoided. Attempting to incorporate TITAN Pendimethalin 330 Herbicide when soils are very wet or very dry may also result in insufficient mixing and therefore poor weed control. Wheat and barley seed must be sown approximately 1cm beneath the chemically treated band or reduced emergence may occur. Refer sections "Cereal Seed Dressings" and "Weather Conditions at Planting" under GENERAL INSTRUCTIONS, for further information on emergence. If Wild Oats are expected to be a problem use a Wild Oat herbicide.
Field peas		Southern NSW, ACT, VIC, TAS, SA, WA only	2L	Incorporate into the soil within 24 hours of application. Use weighted harrows at 8-13km/hr followed by a cross working with a combine set to work at a depth of 2-5cm at 8-13km/hr. Seed should be sown below the chemical band. Use cover harrows behind the combine. (Refer Note 1 under "Incorporation"). Use a Wild Oat herbicide if Wild Oats are expected to be a problem.
Chickpeas, Faba beans, Lupins, Safflower		Northern NSW, QLD only	2.5L-3L	Incorporate into the soil within 24 hours of application. Use weighted harrows at 8-13km/hr followed by a cross working with a combine set to work at a depth of 2-5cm at 8-13km/hr. Seed should be sown below the chemical band. Use cover harrows behind the combine. (Refer Note 1 under "Incorporation"). Use the higher rates on medium to heavy textured soils and the lower rates on light textured soils. Heavy soils, which are cloddy or have a surface seal, should be avoided. Attempting to incorporate TITAN Pendimethalin 330 Herbicide when soils are very wet or very dry may also result in insufficient mixing and therefore poor weed control. If Wild Oats are expected to be a problem use a Wild Oat herbicide.

TABLE 2: PRE-PLANT APPLICATION (INCORPORATED BY THE SOWING PROCESS)

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Barley, Wheat (including crops undersown with lucerne)	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>), Wild Oats* (<i>Avena</i> spp.) *Suppression only	ALL STATES	1.8L	Barley and Wheat: Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply TITAN Pendimethalin 330 Herbicide up to 24 hours prior to sowing. Incorporate with the combine set to sow to a depth of 3-5cm. Use trailing harrows. (Refer Note 1 under "Incorporation"). Wheat and Barley seed must be sown at least 1cm beneath the chemically treated band or reduced emergence may occur. Refer sections "Cereal Seed Dressings" and "Weather Conditions at Planting" under GENERAL INSTRUCTIONS for further information on emergence.
Canola (including crops undersown with lucerne)	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>), Wild Oats* (<i>Avena</i> spp.) *Suppression only	Southern NSW, ACT, VIC, SA, WA only	1.8L-3L	Canola: Apply TITAN Pendimethalin 330 Herbicide up to 24 hours prior to sowing. Incorporate with the combine set to sow the seed below the chemical band. Use the higher rates on medium to heavy textured soils and the lower rates on light textured soils. Note: Development of waterlogged conditions after the application of TITAN Pendimethalin 330 Herbicide may retard the emergence of canola. If Wild Oats are expected to be a problem use a Wild Oat herbicide. Application to heavier soil types, which have poor structural characteristics or are poorly worked, may result in insufficient and uneven incorporation and unsatisfactory weed control. Heavy soils which are cloddy or have a surface crust or surface seal, should be avoided. Attempting to incorporate TITAN Pendimethalin 330 Herbicide when soils are very wet or very dry may also result in insufficient mixing and therefore poor weed control.
	Silvergrass* (<i>Vulpia</i> spp.) *Suppression only		2L-3L	

TABLE 2: PRE-PLANT APPLICATION (INCORPORATED BY THE SOWING PROCESS) – continued

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Chickpeas, Faba beans, Field peas, Lupins, Safflower	Annual R Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>), Silvergrass* (<i>Vulpia</i> spp.), Wild Oats* (<i>Avena</i> spp.) *Suppression only	Southern NSW, ACT, VIC, SA, WA only	2L-3L	Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply TITAN Pendimethalin 330 Herbicide, or in the case of lupins, TITAN Pendimethalin 330 Herbicide plus simazine, up to 24 hours prior to sowing. Incorporate with the combine set to sow to a depth of 3-5cm. Use trailing harrows. (Refer to Note 1 under "Incorporation") Application to heavier soil types, which have poor structural characteristics or are poorly worked, may result in insufficient and uneven incorporation and unsatisfactory weed control. Heavy soils, which are cloddy or have a surface crust or a surface seal, should be avoided. Attempting to incorporate TITAN Pendimethalin 330 Herbicide when soils are very wet or very dry may also result in insufficient mixing and therefore poor weed control. Refer to section on "Weather Conditions at Planting", under GENERAL INSTRUCTIONS, for further information on emergence. If Wild Oats are expected to be a problem use a Wild Oat herbicide. Use the higher rate on medium to heavy textured soils and the lower rates on light textured soils.
Lupins		WA only	2L plus simazine at 500g ai/ha	
		NSW, ACT, VIC, SA only	2L plus simazine at 1.5kg ai/ha	

TABLE 3: POST PLANT PRE-EMERGENCE SURFACE TREATMENT (OVERALL OR BAND SPRAYING): NON-MECHANICAL INCORPORATED

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Cotton	See Weed Table B	QLD, NSW, ACT only	2L-3L	Cotton: Where incorporation prior to sowing is impractical and where the seedbed tilth is fine and free of large stones and trash, TITAN Pendimethalin 330 Herbicide should be applied within 48 hours after sowing. Sunflowers: Where incorporation prior to sowing is impractical and where the seedbed tilth is fine and free of large stones and trash, TITAN Pendimethalin 330 Herbicide should be applied after sowing and before the emergence of the crop and weeds. Where Fat Hen or Blackberry Nightshade is expected to be a major problem, pre-plant incorporation (No.1 Application Method), is preferred. (Refer section on "Incorporation" Notes 1 and 2).
Sunflowers		QLD, NSW, ACT, SA only		
Broad Beans	Poppies, Wireweed (<i>Polygonum aviculare</i>)	TAS only	4L	MINIMUM PLANTING DEPTH: Carrots: 15mm
French Beans	See Weed Table D	QLD only	3L-4L	Processing Peas, Broad Beans and French Beans: 30mm Seed should be sown with press wheels or rollers behind the planter in order to ensure coverage of the seed and compaction of the seedbed. Apply TITAN Pendimethalin 330 Herbicide to a fine firm seedbed free of ridges, clods and trash within 2 days after sowing. Use the higher rates on heavier textured soils or those with a higher organic matter content. Incorporate with 12-25mm of spray irrigation or rainfall applied within one day of application for optimum performance. DO NOT disturb the soil by rolling or harrowing after TITAN Pendimethalin 330 Herbicide has been applied. DO NOT apply where heavy rainfall or irrigation is likely to lead to water logging. DO NOT use TITAN Pendimethalin 330 Herbicide on soils with an organic matter content above 6% as inconsistent weed control will occur. French Beans: For use in the Lockyer and Fassifern valleys only. DO NOT apply to French Beans sown during the autumn, Winter or early Spring or which are likely to be stressed by cold weather.
Processing Peas		TAS only	4L	
Maize	See Weed Table B	QLD, NSW, ACT, NT only	4.5L	Where grasses are expected to be a major problem, this treatment is recommended: TITAN Pendimethalin 330 Herbicide alone. Apply TITAN Pendimethalin 330 Herbicide after planting and before emergence of crop and weeds. DO NOT incorporate this treatment. Avoid application in dry weather, this may cause pruning or aerial roots and lodging. (Refer sections on "Incorporation" Notes 2 and 3).
	See Weed Table C		3L plus atrazine at 1kg ai/ha	Where Thornapple, Noogoora Burr, Bathurst Burr, Caltrop, Paddy Melon or Mintweed are expected to be the major problems, TITAN Pendimethalin 330 Herbicide should be applied in a tank mix combination with atrazine after planting and before the emergence of crop and weeds. DO NOT incorporate this mixture. Follow directions on atrazine label carefully. This treatment should not lead to soil residue problems with atrazine as the application rate is low. DO NOT use TITAN Pendimethalin 330 Herbicide mixed with atrazine on heavy clay soils, as weed control may not be adequate. (Refer section on "Incorporation" Notes 2 and 3).

TABLE 3: POST PLANT PRE-EMERGENCE SURFACE TREATMENT (OVERALL OR BAND SPRAYING): NON-MECHANICAL INCORPORATED – continued

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Onions	Hogweed, Wireweed (<i>Polygonum aviculare</i>)	TAS only	0.75L-1L	Apply in conjunction with other herbicides as advised by a qualified crop adviser to ensure that an adequate level of weed control is achieved in adverse conditions. Pre-emergence: DO NOT use on sandy soils. MINIMUM PLANTING DEPTH: 15mm Apply from immediately after sowing until just prior to emergence. Apply TITAN Pendimethalin 330 Herbicide to a fine firm seedbed free of clods and trash. Use the higher rates on heavy textured soils or those with a high organic matter content. For optimum performance, incorporate with 12-25mm of spray irrigation within one day of application. DO NOT exceed 0.75L/ha if soil conditions are wet and cold.
			1L-2L	Post-emergence: Apply TITAN Pendimethalin 330 Herbicide from the first true leaf until the 3 leaf stage. Repeat applications may be made after the 1 leaf up to the 3-leaf stage providing total usage of TITAN Pendimethalin 330 Herbicide on crop does not exceed 3L/ha. Avoid applying TITAN Pendimethalin 330 Herbicide to areas where waterlogging is likely to occur.

TABLE 4: POST-PLANT EMERGENCE TREATMENT (INCORPORATED OR NON-INCORPORATED)

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Sugarcane	Awnless Barnyard Grass (<i>Echinochloa colona</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Green Summer Grass (<i>Brachiaria subquadriflora</i>), Guinea Grass (<i>Panicum maximum</i> c.v. <i>Hamil</i> and c.v. <i>Guinea</i>), Summer Grass (<i>Digitaria ciliaris</i>)	QLD, NSW, ACT, WA only	3L-4.5L	TITAN Pendimethalin 330 Herbicide should be applied as soon as possible after planting and before weed emergence. However, consolidation (cutaway operation) of the planting furrow prior to application to prevent soil movement into the base of the drill is recommended. Poor grass control is expected in soils which contain a high percentage of organic matter. (Refer section on "Incorporation" Note 1). Use the higher rate where longer weed control is required or where incorporation by irrigation or rainfall is likely to be delayed more than 5 days. Incorporated: Under dry conditions or where some cultivation is expected after application TITAN Pendimethalin 330 Herbicide should be thoroughly incorporated by finger rakes to a shallow depth. In subsequent tillage operations, cultivation depth should not exceed the depth of the incorporation.
	Blue Top (Blue Billygoat Weed) (<i>Ageratum houstonianum</i>)		3L plus Atrazine at 1.5kg ai/ha or Diuron at 1.5kg ai/ha	Water Incorporation: Incorporate using 12-25mm of spray irrigation or rainfall within 10 days of application. The area should not be disturbed by cultivation for the expected duration of weed control where this method of application is used. If excessive irrigation or rainfall occurs after the application of TITAN Pendimethalin 330 Herbicide, resulting in the movement of soil from the top to the bottom of the planting drill, weed control will be reduced. For other broadleaved weeds higher rates of Atrazine and Diuron can be tank mixed with TITAN Pendimethalin 330 Herbicide. See the relevant Atrazine or Diuron labels for details. Incorporate into the soil either by overhead irrigation, rainfall or mechanical incorporation to a minimum depth of 5cm. Incorporate as soon as possible and within 3-5 days after application. Read all directions for use in sugarcane on the Flame* label.
	Barnyard Grass (<i>E. crusgalli</i>), Blackberry Nightshade (<i>Solanum nigrum</i>), Blue Top (Blue Billygoat Weed) (<i>Ageratum houstonianum</i>), Common Sida (<i>Sida rhombifolia</i>), Giant/Black Pigweed (<i>Trianthema portulacastrum</i>), Glossy Nightshade (<i>Solanum americanum</i>), Green Amaranth (<i>Amaranthus viridis</i>), <i>Ipomoea</i> spp., Liverseed Grass (<i>Urochloa panicoides</i>), Milkweed (Mexican Fire Plant) (<i>Euphorbia heterophylla</i>), Pigweed (<i>Portulaca oleracea</i>)		3L plus 400mL/ha Flame* Herbicide	

TABLE 5: POST PLANT AND FLUSHING: TITAN PENDIMETHALIN 330 HERBICIDE TANK MIXTURES

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Combine sown rice	Barnyard Grass (<i>Echinochloa</i> spp.), Silvertop Grass (Brown Beetle Grass) (<i>Diplachne reptatrix</i>), Starfruit (<i>Damasonium minus</i>)	QLD, NSW, ACT, NT only	3L plus Propanil* at 1.8kg ai/ha	Apply this tank mixture up to the 2-leaf stage of Barnyard Grass and 1-leaf stage of Silvertop grass. Apply by ground rig in 70L-100L/ha or by aircraft in 25L-30L/ha total spray volume. Water Management: Flush immediately after sowing to enable a good even germination of rice. The soil surface must be sealed by a flushing irrigation or rainfall before the application of TITAN Pendimethalin 330 Herbicide plus Propanil. Apply a second flush or permanent flood after 2 days but not later than 5 days after the application of TITAN Pendimethalin 330 Herbicide plus Propanil. To assist in the control of Barnyard Grass, permanent water should be applied as soon as the rice can tolerate it and levels maintained for optimum growth of rice. Rice State: After the first flushing irrigation the stage of rice at application of TITAN Pendimethalin 330 Herbicide plus Propanil is not critical and timing should be based on the stage of weed growth and water management. However, DO NOT apply to rice in a weakened condition from causes such as soil salts, moisture stress, overwatering, or any other cause. Some transient leaf burn of the rice may result after the application of TITAN Pendimethalin 330 Herbicide plus Propanil but no long-term effects will result from this leaf burn. Rice seed should be covered with at least 1cm of water after the first flushing irrigation before TITAN Pendimethalin 330 Herbicide plus Propanil is applied to germinating rice seed.

TABLE 5: POST PLANT AND FLUSHING: TITAN PENDIMETHALIN 330 HERBICIDE TANK MIXTURES – continued

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Combine sown rice and pasture sod sown rice	Barnyard Grass (<i>Echinochloa</i> spp.), Silvertop Grass (Brown Beetle Grass) (<i>Diplachne reptatrix</i>), Starfruit (<i>Damasonium minus</i>), Annual Sedges* (<i>Cyperus</i> spp.) *Suppression only	QLD, NSW, ACT, NT only	3L or 4.5L plus Paraquat at 200g ai/ha	Use the higher rate when sowing into pasture sod sown rice for Annual Sedge control or when more than 10 days is expected between treatment and permanent water. Apply this tank mix up to the 3-leaf stage of Barnyard Grass, Silvertop and Sedges, before rice emergence. Apply by ground-rig in 70-100L/ha of water total spray volume. Water Management: Flush immediately after sowing to enable a good even germination of rice. The soil surface must be sealed by a flushing irrigation or rainfall before the application of TITAN Pendimethalin 330 Herbicide plus Paraquat. Apply a second flush or permanent flood after 1 day but not later than 5 days after the application of TITAN Pendimethalin 330 Herbicide plus Paraquat. To assist in the control of Barnyard Grass, permanent water should be applied as soon as the rice can tolerate it and levels maintained for optimum growth of rice. Rice Stage: After the first flushing irrigation TITAN Pendimethalin 330 Herbicide plus Paraquat must be applied before rice emergence. DO NOT apply to rice in a weakened condition from causes such as soil salts, moisture stress, over-watering, or any other cause.

TABLE 6: PRE-TRANSPLANT TREATMENT

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Transplanted Broccoli, Cabbage and Cauliflower and processing tomatoes	See Weed Table D plus Dwarf Amaranth (<i>Amaranthus macrocarpus</i>), Green Amaranth (<i>Amaranthus viridis</i>), Annual Nettles (<i>Urtica</i> spp.), Indian Hedge Mustard (<i>Sisymbrium orientale</i>), Potato Weed (<i>Galinsoga parviflora</i>), Sowthistle, Turnip Weed (<i>Rapistrum rugosum</i>), Wild Radish, Wild Turnip (<i>Brassica tournefortii</i>), Winter Grass (<i>Poa annua</i>)	QLD, NSW, ACT, VIC, SA, WA only	2L-3L 3L plus 400mL/ha Flame* Herbicide	Apply TITAN Pendimethalin 330 Herbicide to a firm seedbed free of ridges, clods and trash between 7 to 12 days before transplanting. Use the higher rates on heavier textured soils or those with a higher organic matter content. Incorporate with 12 to 25 mm of spray irrigation or rainfall applied within one day of application for optimum performance. Mechanical disturbance to the seedbed at transplanting should be minimised to achieve optimum performance. DO NOT apply after transplanting, as damage will occur. DO NOT apply where water logging is likely to occur after transplanting or crop stunting will result. DONOT use TITAN Pendimethalin 330 Herbicide on soils with an organic matter content above 6% as inconsistent weed control will occur. Ramrod* may be tank mixed with TITAN Pendimethalin 330 Herbicide prior to transplanting or applied separately after transplanting.
Transplanted Lettuce	See Weed Table D		2L-4L	

TABLE 7: PERENNIAL CROPS

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Avocados, Bananas, Citrus, Deciduous fruits, Grapevines, Lychees, Macadamia nut, Mangoes, Nuts	Dwarf Amaranth, Green Amaranth, Annual Ryegrass (<i>Lolium rigidum</i>), Asthma Plant (<i>Euphorbia hirta</i>), Barnyard Grass (<i>Echinochloa</i> spp.), Chickweed (<i>Stellaria media</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Deadnettle (<i>Lamium amplexicaule</i>), Fat Hen (<i>Chenopodium album</i>), Pigeon Grass, Pigweed (<i>Portulaca oleracea</i>), Prickly Lettuce (<i>Lactuca serriola</i>), Sowthistle (<i>Sonchus oleraceus</i>), Summer Grass (<i>Digitaria ciliaris</i>), Winter Grass (<i>Poa annua</i>), Wireweed (<i>Polygonum aviculare</i>)	ALL STATES	9L-12L	DO NOT apply TITAN Pendimethalin 330 Herbicide to grapevines after bud swell. Precaution: TITAN Pendimethalin 330 Herbicide or TITAN Pendimethalin 330 Herbicide plus Simazine, is likely to affect the emergence and growth of green manure crops such as oats or beans between rows of trees or vines, if they are sown into the treated band within 12 months of application. Use the higher rate on medium to heavy textured soils and the lower rate on light textured soils. Use a directed spray avoiding contact with green bark, fruit and foliage. If applied to freshly transplanted trees or vines, soil should be compacted prior to application of TITAN Pendimethalin 330 Herbicide to avoid contact with roots. TITAN Pendimethalin 330 Herbicide must be incorporated by a minimum of 5mm of rainfall or spray irrigation as soon as possible but no later than 10 days after application or weed control may be reduced. For best results, soil surface should be free of weeds, surface litter and clods at the time of application. If small weeds are present at the time of application, TITAN Pendimethalin 330 Herbicide should be tank mixed with a knockdown herbicide at the recommended rate. Caution: Use of simazine mixtures could lead to crop damage on vines younger than 3 years of age. Refer to the simazine label. DO NOT apply simazine mixtures to alkaline soils.
	As above plus Prairie Grass (<i>Bromus unioloides</i>), Spotted Medic (<i>Medicago arabica</i>)		12L	
Citrus, Deciduous fruits, Grapevines, Nuts	As above plus Cobbler's Pegs (<i>Bidens pilosa</i>), Curious Weed (<i>Schkuhriapinnata</i>), Stinking Roger (<i>Tagetes minuta</i>)		9L plus simazine at 800g ai/ha	
	As above plus Caltrop (<i>Tribulus terrestris</i>)		12L plus simazine at 1kg ai/ha	
Established lucerne seed crops only	Fat Hen (<i>Chenopodium album</i>), Summer Grass (<i>Digitaria sanguinalis</i>)	NSW, ACT, SA only	3L	During the spring months prior to irrigation, the lucerne stand should be grazed down hard to produce a low trash soil surface. Apply TITAN Pendimethalin 330 Herbicide and incorporate treatment by 12-25mm of spray irrigation or rainfall within 1 day of application.
	As above plus Pigeon Grass (<i>Setaria</i> spp.)		4.5L	

TABLE 7: PERENNIAL CROPS – continued

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Eucalyptus forestry plantations	Amaranths (<i>Amaranthus</i> spp.), Annual Ryegrass, Asthma Plant (<i>Euphorbia hirta</i>), Barnyard Grass (<i>Echinochloa crus-galli</i>), Chickweed (<i>Stellaria media</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Deadnettle (<i>Lamium amplexicaule</i>), Fat Hen (<i>Chenopodium album</i>), Pigeon Grass (<i>Setaria</i> spp.), Pigweed (<i>Portulaca oleracea</i>), Prickly Lettuce (<i>Lactuca serriola</i>), Stagger Weed (<i>Stachys arvensis</i>), Sow Thistle (<i>Sonchus oleraceus</i>), Summer Grass (<i>Digitaria ciliaris</i>), Winter Grass (<i>Poa annua</i>), Wireweed (<i>Polygonum aviculare</i>)	ALL STATES	9L to 12L	Pre-planting: Apply 7 to 2 days prior to transplanting. Use the higher rate on heavier textured soils with higher organic matter. Mechanical disturbance should be minimised during planting to optimise performance. Post-planting: Apply immediately following planting, before emergence of weeds. Repeat applications may be made as directed sprays to provide pre-emergence control of weeds. Emerged weeds should be controlled with carefully directed applications of a non-selective herbicide or over-the-top application of a selective herbicide. If applied to freshly transplanted trees, soils should be compacted prior to application to avoid contact with roots. Weed control may be reduced if rainfall or irrigation does not occur within 10 days of application. Flood irrigation may reduce control.
Pyrethrum, Pre-emergence crops	See Weed Table D	TAS only	2L to 3L	Apply TITAN Pendimethalin 330 Herbicide to seedbed within 10 days of sowing, prior to pyrethrum emergence. Apply at the lower rates on sandy soils. Incorporate with 12-25 mm of rainfall or irrigation within 1 day of application for optimum performance.
Post-emergence crops			2L to 5L	Apply TITAN Pendimethalin 330 Herbicide prior to weed germination at any stage of pyrethrum growth from 2 true leaf stage to preflowering as advised by qualified crop advisor. Seek advice from qualified crop advisor before applying follow-up applications in any one year. Incorporate with 12-25mm of rainfall or irrigation within 1 day of application for optimum performance.
Pyrethrum - newly transplanted "splits"	Seedling Docks (<i>Rumex</i> spp.) Useful suppression of the following weeds is also obtained: Capeweed (<i>Arctotheca calendula</i>), <i>Erodium</i> spp. (Storksbill), Spear Thistle (<i>Cirsium vulgare</i>)	TAS only	5L	Apply immediately following transplanting before emergence of weeds. Repeat application in any one year should only be made according to advice from crop advisers. Use lower rates on light soils. This product should be used in combination with other registered herbicides as recommended by crop advisers.
Established pyrethrum (one year old or greater)				Apply in autumn or spring prior to weed germination. Note: Existing weeds must be controlled with a knockdown herbicide, as TITAN Pendimethalin 330 Herbicide will not control these weeds. Repeat applications in any one year should only be made according to advice from crop advisers. This product should be used in combination with other registered herbicides as recommended by crop advisers.
Teatree (<i>Melaleuca alternifolia</i>)	See Weed Table B plus Dwarf Amaranth, Green Amaranth, Annual Ryegrass (<i>Lolium rigidum</i>), Asthma Plant (<i>Euphorbia hirta</i>), Barnyard Grass (<i>Echinochloa</i> spp.), Chickweed (<i>Stellaria media</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Deadnettle (<i>Lamium amplexicaule</i>), Fat Hen (<i>Chenopodium album</i>), Pigeon Grass, Pigweed (<i>Portulaca oleracea</i>), Prickly Lettuce (<i>Lactuca serriola</i>), Sowthistle (<i>Sonchus oleraceus</i>), Summer Grass (<i>Digitaria ciliaris</i>), Winter Grass (<i>Poa annua</i>), Wireweed (<i>Polygonum aviculare</i>)	QLD, NSW, ACT, SA, NT only	4.5L-9L	DO NOT tank mix with Simazine as crop damage may result. For best results the soil surface should be free of weeds, surface litter and clods at the time of application. Pre-Transplanting: Apply 7-12 days prior to transplanting seedlings. Use the higher rates on heavier textured soils or soils with higher organic matter. Mechanical disturbance should be minimised during planting to optimise performance. Avoid contact of treated soils with seedling roots. Post-Transplanting: Apply immediately following planting and pre-emergence of weeds. If applied to freshly transplanted trees, soils should be compacted prior to application of TITAN Pendimethalin 330 Herbicide to avoid contact with the roots. Weed control may be reduced if rainfall or irrigation does not occur within 10 days of application. Flood irrigation may reduce control.

TABLE 8: ESTABLISHED TURF

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
TURF WARM SEASON SPECIES: Bahia grass, Buffalo grass, Couch, Kikuyu, Salt water couch, Zoysia grass turf	Crowsfoot (Crab Grass), Summer Grass, Winter Grass	ALL STATES	4.5L or 45mL/100m ²	The product should be incorporated by 10-15mm of spray irrigation or rainfall as soon as possible within one day of application. Apply once every 10 weeks from early September to the end of February.
Queensland blue couch Hybrid couch cv. <i>Tifdwarf</i>			3L or 30mL/100m ²	
TURF COOL SEASON SPECIES: Kentucky blue grass			4.5L or 45mL/100m ²	The product should be incorporated by 10-15mm of spray irrigation or rainfall as soon as possible within one day of application.
Bent grass, Perennial ryegrass			3L or 30mL/100m ²	DO NOT make more than one application of TITAN Pendimethalin 330 Herbicide per year. (Refers to Ryegrass, Bent grass only.)

TABLE 9: IRRIGATION CHANNELS

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Cotton irrigation banks, channels and drains	Barnyard Grass, Silvertop Grass (Brown Beetle Grass)	QLD, NSW, ACT only	4.5L-9L	Use the lower rate when short term control is required. Apply in late winter or early spring after regrading or clearing channels. The soil should be loose and free of large clods. If 25-50mm of rainfall has not fallen within 14 days of application the channel should be filled with water and allowed to stand for 1 day. The water in the channel should then be drained off and used to pre-irrigate cotton fields. DO NOT use water in channel to irrigate or pre-irrigate susceptible crops.
			6L/ plus Diuron at 8.1kg ai/ha	Use this mixture where long term control is required or a broader weed spectrum is present. See Diuron label for details. Water in the channel should NOT be used to irrigate or pre-irrigate susceptible crops.

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

WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED.

WEED TABLE:

A. IN COTTON, COW PEAS, MUNG BEANS, NAVY BEANS, PEANUTS, PIGEON PEAS, SOYBEANS, SUNFLOWERS

with pre-plant incorporated treatment (double incorporation) the following weeds are controlled:

Barnyard Grass	<i>Echinochloa</i> spp.	Native Millet	<i>Panicum decompositum</i>
Button Grass	<i>Dactyloctenium radulans</i>	Pale Pigeon Grass	<i>Setaria glauca</i>
Common Heliotrope	<i>Heliotropium europeum</i>	Paspalidium (Brigalow grass)	<i>Paspalidium</i> spp.
Crested Goosefoot	<i>Chenopodium cristatum</i>	Pepper Grass	<i>Panicum whitei</i>
Crowsfoot Grass	<i>Eleusine indica</i>	Pigweed	<i>Portulaca oleracea</i>
Dwarf Amaranth	<i>Amaranthus macrocarpus</i>	Queensland Blue Grass	<i>Dichanthium sericeum</i>
Early Spring Grass	<i>Eriochloa</i> spp.	Red Flinders Grass	<i>Iseilema vaginiflorum</i>
Fat Hen	<i>Chenopodium album</i>	Scarlet Pimpernel	<i>Anagallis arvensis</i>
Green Amaranth	<i>Amaranthus viridis</i>	Small Burr Grass	<i>Tragus australianus</i>
Liverseed Grass	<i>Urochloa panicoides</i>	Stink Grass	<i>Eragrostis cilianensis</i>
Mexican Clover (white eye)	<i>Richardia brasiliensis</i>	Weeping Love Grass	<i>Eragrostis parviflora</i>
Mossman River Grass	<i>Cenchrus echinatus</i>	Wireweed	<i>Polygonum aviculare</i>

Useful suppression of the following weeds is also obtained:

Blackberry Nightshade	<i>Solanum nigrum</i>	Mintweed	<i>Salvia reflexa</i>
Caltrop	<i>Tribulus terrestris</i>	Peppercress	<i>Lepidium</i> spp.
Common Verbena	<i>Verbena officinalis</i>	Stagger Weed	<i>Stachys arvensis</i>

B. IN COTTON, SUNFLOWERS, MAIZE AND TEATREE - with post-plant pre-emergence surface treatment

(TITAN Pendimethalin 330 Herbicide) the following weeds are controlled:

Barnyard Grass	<i>Echinochloa</i> spp.	Pale Pigeon Grass	<i>Setaria glauca</i>
Button Grass	<i>Dactyloctenium radulans</i>	Paspalidium (Brigalow Grass)	<i>Paspalidium</i> spp.
Common Heliotrope	<i>Heliotropium europeum</i>	Pepper Grass	<i>Panicum whitei</i>
Crested Goosefoot	<i>Chenopodium cristatum</i>	Pigweed	<i>Portulaca oleracea</i>
Crowsfoot Grass	<i>Eleusine indica</i>	Queensland Blue Grass	<i>Dichanthium sericeum</i>
Dwarf Amaranth	<i>Amaranthus macrocarpus</i>	Red Flinders Grass	<i>Iseilema vaginiflorum</i>
Early Spring Grass	<i>Eriochloa</i> spp.	Scarlet Pimpernel	<i>Anagallis arvensis</i>
Green Amaranth	<i>Amaranthus viridis</i>	Small Burr Grass	<i>Tragus australianus</i>
Liverseed Grass	<i>Urochloa panicoides</i>	Stink Grass	<i>Eragrostis cilianensis</i>
Mexican Clover (white eye)	<i>Richardia brasiliensis</i>	Weeping Love Grass	<i>Eragrostis parviflora</i>
Mossman River Grass	<i>Cenchrus echinatus</i>	Wireweed	<i>Polygonum aviculare</i>
Native Millet	<i>Panicum decompositum</i>		

Useful suppression of the following weeds is also obtained:

Caltrop	<i>Tribulus terrestris</i>	Mintweed	<i>Salvia reflexa</i>
Common Sowthistle	<i>Sonchus oleraceus</i>	Peppercress	<i>Lepidium</i> spp.
Common Verbena	<i>Verbena officinalis</i>	Stagger Weed	<i>Stachys arvensis</i>

C. IN MAIZE - with post-plant pre-emergence surface treatment of TITAN Pendimethalin 330 Herbicide plus tank mix with atrazine.

The following weeds are controlled in addition to those controlled by TITAN Pendimethalin 330 Herbicide alone:

Bathurst Burr	<i>Xanthium spinosum</i>	Noogoora Burr	<i>Xanthium pungens</i>
Caltrop	<i>Tribulus terrestris</i>	Paddy Melon	<i>Cucumis</i> spp.
Mintweed	<i>Salvia reflexa</i>	Thornapple	<i>Datura</i> spp.

The following weeds are not controlled by TITAN Pendimethalin 330 Herbicide or the mixture with atrazine:

Bindweed	<i>Convolvus</i> spp.	Nut Grass	<i>Cyperus rotundus</i>
Wandering Jew	<i>Commelina</i> spp.		

D. IN CARROTS, PROCESSING PEAS, FRENCH BEANS, TRANSPLANTED CABBAGE, CAULIFLOWER, BROCCOLI, LETTUCE, PROCESSING TOMATOES AND PYRETHRUM - with pre-emergence surface treatment after planting or before transplanting as directed and incorporated by spray irrigation.

Awnless Barnyard Grass	<i>Echinochloa colona</i>	Green Fat Hen	<i>Chenopodium murale</i>
Bittercress	<i>Coronopus didymus</i>	Pigweed	<i>Portulaca oleracea</i>
Bladder Ketmia	<i>Hibiscus trionum</i>	Prickly Lettuce	<i>Lactuca serriola</i>
Chickweed	<i>Stellaria media</i>	Shepherd's Purse	<i>Capsella bursa-pastoris</i>
Deadnettle	<i>Lamium amplexicaule</i>	Wireweed	<i>Polygonum aviculare</i>
Fat Hen	<i>Chenopodium album</i>		

Useful suppression for the following weeds at the lower rates.

High rates or tank mixtures are required for complete control (see Directions for Use Table).

Annual Nettles
Blackberry Nightshade
Common Sowthistle
Fumitory

Urtica spp.
Solanum nigrum
Sonchus oleraceus
Fumaria spp.

Indian Hedge Mustard
Turnip Weed
Wild Radish
Winter Grass

Sisymbrium orientale
Rapistrum rugosum
Raphanus raphanistrum
Poa annua

GENERAL INSTRUCTIONS

TITAN Pendimethalin 330 Herbicide is a selective herbicide for the control of most annual grasses and certain broadleaved weeds. TITAN Pendimethalin 330 Herbicide controls weeds by inhibiting seedling development; it will not control established weeds. For best results, seedbeds should be free of weeds, trash and clods at the time of application. Soils containing a high percentage of organic matter can result in poor control. It is recommended that application to soils containing a high percentage of organic matter (greater than 6%) be avoided.

Crop injury may result if cold wet weather follows planting or if TITAN Pendimethalin 330 Herbicide is applied to a poorly prepared seedbed. With the return of favourable growing conditions (warm weather), the crop will usually recover and resume normal growth.

TITAN Pendimethalin 330 Herbicide will stain (yellow) any objects it contacts. Keep all objects etc., that are not to be stained, well clear of the product and spray.

RESISTANT WEEDS WARNING

TITAN Pendimethalin 330 Herbicide is a member of **GROUP D HERBICIDE** the dinitroaniline group of herbicides. TITAN Pendimethalin 330 Herbicide has the inhibition of tubulin formation mode of action. For weed resistance management TITAN Pendimethalin 330 Herbicide is a Group D Herbicide. Some naturally occurring weed biotypes resistant to TITAN Pendimethalin 330 Herbicide and other Group D 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 Pendimethalin 330 Herbicide or other Group D 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 Pendimethalin 330 Herbicide to control resistant weeds.

MIXING

Put half the required volume of water in spray tank and start agitation. When using TITAN Pendimethalin 330 Herbicide alone, add to partially filled tank and then add the remainder of the water. Mix thoroughly.

TANK MIXES

When using TITAN Pendimethalin 330 Herbicide with products such as Atrazine or Diuron, mix these products as indicated on the relevant label and add TITAN Pendimethalin 330 Herbicide last, then complete filling the tank. Maintain good agitation at all times until spraying is completed. If the spray mixture is allowed to settle, thorough agitation is essential to re-suspend the mixture before spraying is resumed. Note that when tank mixing TITAN Pendimethalin 330 Herbicide with Paraquat and Glyphosate herbicides, TITAN Pendimethalin 330 Herbicide should be thoroughly mixed in the spray tank before adding a Paraquat or Glyphosate product.

APPLICATION

Ground Application: Use conventional sprayers with either mechanical or by-pass agitation. Flat fan nozzles should be used. Spray equipment should be correctly calibrated to ensure proper application. If applying TITAN Pendimethalin 330 Herbicide in a tank mix combination with atrazine or diuron, nozzle screens must be no finer than 50 mesh. Apply the recommended quantity of TITAN Pendimethalin 330 Herbicide in 50-200 litres of water per hectare.

When pre-emergence surface treatment is used, the higher rates of water are recommended.

Aerial Application:

Pre-plant soybeans, cotton, sunflowers, peanuts, navy beans, cow peas, mung beans, pigeon peas and post-plant, post-flushed combine-sown rice only.

Apply the recommended quantity of TITAN Pendimethalin 330 Herbicide in 25-60 litres of water per hectare. It is essential that the equipment is correctly calibrated and an even spray pattern is obtained. It is essential that markers are used and an accurate swath width is maintained.

DO NOT apply if wind speed is greater than 16km/hour. Always spray with a crosswind in accordance with recommended flying practice.

INCORPORATION

1. TITAN Pendimethalin 330 Herbicide works best if thoroughly mixed with soil either mechanically or by irrigation or rainfall. The aim of incorporation is to produce an even band of herbicide to intercept germinating weed seeds.

2. Post-plant pre-emergence surface applications of TITAN Pendimethalin 330 Herbicide alone, or as a tank mixture, are most effective in controlling weeds when adequate rainfall occurs or irrigation is applied within 7-10 days after treatment to achieve incorporation. If no rain or irrigation is received within 7-10 days, light mechanical incorporation is required for optimum weed control, except when used on maize, carrots and rice.

3. Maize is tolerant to TITAN Pendimethalin 330 Herbicide either alone or in mixtures with atrazine, if the seed germinates below the chemically treated band.

Maize, carrots and rice are NOT tolerant to TITAN Pendimethalin 330 Herbicide if it is in direct contact with the seed.

Cereal Seed Dressings

Some fungicidal seed dressings can shorten coleoptile length and this can affect emergence, particularly if seed is sown too deep. When these cereal seed dressings are used in TITAN Pendimethalin 330 Herbicide treated areas it is very important to ensure there is good seed depth control and to sow just below (1cm) the chemically treated band. Consult your local Agricultural Agronomist for further advice.

Weather Conditions for Planting

Crop injury may result if cold weather follows planting. With the return of favourable growing conditions (warm weather), crops usually recover and resume normal growth. In cereals, prolonged cold wet conditions during germination and emergence can result in wheat or barley coleoptiles remaining in the treated band for an extended period. This can reduce emergence.

COMPATIBILITY

Physical compatibility of TITAN Pendimethalin 330 Herbicide has been tested with the following chemicals:

Atrazine, diuron, simazine, prometryne, fluometuron, fluometuron plus prometryne, ametryne, paraquat, propanil, linuron, glyphosate and Ramrod SC*. If tank mixing, observe the directions under Mixing.

FOLLOWING CROPS

In the event of crop failure the soil should be cultivated to a minimum depth of 15cm to ensure any residues are evenly dispersed throughout the soil. If a maize crop fails due to weather conditions or some other reason, maize can be replanted the same year without adverse effects, but seedling depth must be below the retilled area.

The following crops may be sown after a minimum interval of 2 months after application of TITAN Pendimethalin 330 Herbicide:

Carrots, parsnips, parsley, celery, potatoes, peas, French beans, transplanted brassicas, transplanted lettuce, transplanted tomatoes and transplanted capsicums.

The following crops may be sown after a minimum interval of 5 months after application of TITAN Pendimethalin 330 Herbicide :

Turnips, lettuce, radish, Brussels sprouts, cabbage, cauliflower, broccoli, onions, leeks, sweetcorn, pumpkins, squash, melons and cucumbers.

The following crops may be sown after a minimum interval of 12 months after application of TITAN Pendimethalin 330 Herbicide:

Redbeet (beetroot), spinach, silverbeet and poppy.

PROTECTION OF CROP, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT apply under meteorological conditions or from spraying equipment, which could be expected to cause spray drift onto nearby susceptible plants, adjacent crops, crop lands or pastures.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to fish and other aquatic life. DO NOT contaminate dams, rivers, drains or streams with chemical or used containers.

STORAGE AND DISPOSAL

5L, 20L and 200L Containers: Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemical on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. Empty containers and product should NOT be burnt.

Refillable containers 100L, 110L and 120L: Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT tamper with the Micr matic valve or security seal. Do not contaminate the drum with water or any foreign matter. After each use of the product, please ensure the Micro Matic coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the drum have been used, please return the empty drum to the point of purchase. The drums remain the property of TITAN AG Pty Ltd.

SAFETY DIRECTIONS

Harmful if swallowed. Will irritate eyes, nose, throat and skin. Avoid contact with eyes and skin. DO NOT inhale vapour. When preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow length nitrile gloves and face shield or goggles. If product on skin, immediately wash area with soap and water. If product in eyes wash it out immediately with water. Wash hands after use. After each days 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.

If product in eyes, wash it out immediately with water. For further information please refer to the Material Safety Data Sheet.

MATERIAL SAFETY DATA SHEET

Additional information is listed in the material safety data sheet (MSDS). A material safety data sheet for TITAN Pendimethalin 330 Herbicide is available from TITAN AG Pty Ltd on request. Call Customer Service on (02) 9986 2943 or visit www.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.

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