

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

# Nufarm Pendimethalin 440

ACTIVE CONSTITUENT: 440 g/L PENDIMETHALIN  
SOLVENT: 519 g/L HYDROCARBON LIQUID

**HERBICIDE**

**GROUP 3 HERBICIDE**

For the control of wireweed, annual grasses (including annual ryegrass) and certain broadleaf weeds in various crops as per the DIRECTIONS FOR USE.

**EC**

EMULSIFIABLE CONCENTRATE



 **Nufarm**

**AUSTRALIAN  
THROUGH  
& THROUGH**

**DIRECTIONS FOR USE****RESTRAINTS**

**DO NOT** sow sensitive summer crops such as sorghum and millets within 12 months of application of Nufarm Pendimethalin 440.

**DO NOT** apply to a poorly prepared seedbed.

**DO NOT** use Nufarm Pendimethalin 440 mixed with atrazine on heavy clay soils.

**DO NOT** apply Nufarm Pendimethalin 440 where waterlogging is likely to occur.

**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).

**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.

**PRE-PLANT APPLICATION TREATMENT (INCORPORATED BY THE SOWING PROCESS)**

CROP	WEEDS	RATE	CRITICAL COMMENTS
Barley Wheat (including crops with undersown lucerne)	Annual ryegrass ( <i>Lolium rigidum</i> ) Wireweed ( <i>Polygonum aviculare</i> ) Wild oats ( <i>Avena</i> spp.) - suppression only	1.35 L/ha	Barley and wheat (Including crops where lucerne is undersown): Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply Nufarm Pendimethalin 440 up to 24 hours prior to sowing. Incorporate with the combine set to sow to a depth of 3 - 5 cm. Use trailing harrows. (Refer note (a) under "Incorporation"). In minimum till situations, only light incorporation will occur due to soil displaced by the points. Trailing harrows should be used to provide better incorporation and weed control. Avoid heavy trash situations which may result in uneven application and incorporation, leading to reduced weed control. Wheat and barley seed must be sown at least 1 cm 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. CAUTION: Ensure thorough incorporation to maximise safety to undersown lucerne.
Chickpeas Faba beans Field peas Lentils Lupins Safflower	Annual ryegrass ( <i>Lolium rigidum</i> ) Wireweed ( <i>Polygonum aviculare</i> ) Suppression only of Silvergrass* ( <i>Vulpia</i> spp.) and Wild oats ( <i>Avena</i> spp.)	1.5 - 2.25 L/ha	Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply Nufarm Pendimethalin 440 or in the case of lupins, Nufarm Pendimethalin 440 plus simazine, up to 24 hours prior to sowing. Incorporate with the combine set to sow to a depth of 3 - 5 cm. Use trailing harrows. (Refer note (a) 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 Nufarm Pendimethalin 440 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 rates on medium to heavy textured soils and the lower rates on light textured soils.
Lupins		1.5 L/ha + 500 g/ha of a 900 g/kg simazine product (WA only)	
		1.5 L/ha + 1.5 kg/ha of a 900 g/kg simazine product (NSW, ACT, VIC and SA only)	

**PRE-PLANT INCORPORATION (DOUBLE INCORPORATION):**

**NOTE:** For all crops listed in the double incorporation table below:

Incorporate Nufarm Pendimethalin 440 into the soil within 24 hours of application. Refer to the Notes on Incorporation under the heading General Instructions. Where a range of application rates are provided, use the higher rate on heavy textured soils or those high in organic matter and the lower rate on light to medium textured soils. Application to soil types with poor structural characteristics or that are poorly worked may result in insufficient or uneven incorporation and, subsequently less than satisfactory weed control. Heavy soils, which are cloddy or have a surface crust or surface seal, are to be avoided. Attempting to incorporate Nufarm Pendimethalin 440 when soils are very wet or very dry may also result in poor weed control due to insufficient mixing. Refer to the General Instructions, especially "Cereal Seed Dressings" and "Weather Conditions at Planting" for further information on emergence.

CROP	WEEDS	RATE	CRITICAL COMMENTS
Cotton	See Weed Table A	2.25 L/ha	<p>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 Nufarm Pendimethalin 440 treated soil from hills leaving an untreated band over the row, requiring a further application of Nufarm Pendimethalin 440 or other herbicides in that band. When the seedbed is rough, a second incorporation is necessary. Nufarm Pendimethalin 440 may be applied by aerial or ground rig. In the Macquarie area, only apply by air when ground is too wet for ground application. SOYBEANS: Crop injury may result if cold weather follows planting. Avoid application during prolonged cold wet conditions as this inhibits surface breakdown of the herbicide and may result in pruning of secondary roots.</p>
Cow peas		1.9 - 2.25 L/ha	
Mung beans			
Navy beans			
Peanuts			
Pigeon peas			
Soybeans			
Sunflowers			
Barley	Annual ryegrass ( <i>Lolium rigidum</i> )	900 mL/ha	<p>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. Wheat and barley seed must be sown approximately 1cm beneath the chemically treated band or reduced emergence may occur. If wild oats are expected to be a problem use a wild oat herbicide.</p>
Wheat	Wireweed ( <i>Polygonum aviculare</i> )		
	Wild oats ( <i>Avena</i> spp.) - suppression only		
Field peas		1.5 L/ha	
Chickpeas		1.9 - 2.5 L/ha	
Faba beans			
Lentils			
Lupins			<p>^ <b>Lupins:</b> in Tasmania, use <b>only</b> on the species <i>Lupinus angustifolius</i>.  <b>DO NOT</b> use on <i>L. albus</i>. Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply Nufarm Pendimethalin 440 or in the case of lupins, Nufarm Pendimethalin 440 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 note (a) 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 Nufarm Pendimethalin 440 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 rates on medium to heavy textured soils and the lower rates on light textured soils.</p>
Safflower			
Barley	Annual ryegrass ( <i>Lolium rigidum</i> )	1.4 L/ha	
Wheat	Wireweed ( <i>Polygonum aviculare</i> )		
	Wild oats ( <i>Avena</i> spp.) - suppression only		
Chickpeas	Annual ryegrass ( <i>Lolium rigidum</i> )	1.5 - 2.25 L/ha	
Faba beans,	Wireweed ( <i>Polygonum aviculare</i> )		
Field peas	Suppression only of Silvergrass ( <i>Vulpia</i> spp.) and Wild oats ( <i>Avena</i> spp.)		<p>All Crops: Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply Nufarm Pendimethalin 440, or in the case of lupins, Nufarm Pendimethalin 440 plus simazine up to 24 hours prior to sowing. Incorporate with the combine set to sow to a depth of 3 - 5 cm. Use trailing harrows. (Refer to "Incorporation" under the heading "General Instructions"). Wheat and barley seed must be sown at least 1 cm beneath the chemically treated band or reduced emergence may occur. If wild oats are expected to be a problem use a wild oat herbicide.</p>
Lupins		1.5 L/ha plus 560 g/ha of a 900 g/kg simazine product (WA only)	
Safflower		1.5 L/ha plus 1.7 kg/ha of a 900 g/kg simazine product (NSW, VIC and SA only)	

**POST-PLANT PRE-EMERGENCE APPLICATION (OVERALL BAND SPRAYING):  
NON-MECHANICAL INCORPORATION**

CROP	WEEDS	RATE	CRITICAL COMMENTS
Cotton	See Weed Table B	3.4 L/ha	Where incorporation prior to sowing is impractical and where the seedbed tilth is fine and free of large stones and trash, Nufarm Pendimethalin 440 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, Nufarm Pendimethalin 440 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 is preferred. Refer to the relevant sections under the heading "Incorporation" in "General Instructions".
Maize		3.4 L/ha	Use Nufarm Pendimethalin 440 after planting and before emergence of the crop or weeds, especially where grasses are expected to be the major problem. <b>DO NOT</b> incorporate. Avoid application in dry weather as this may cause pruning of aerial roots and lodging. Refer to the relevant sections under "Incorporation" in the "General Instructions". Crop injury may result if cold weather follows planting. Avoid application during prolonged cold wet conditions as this inhibits surface breakdown of the herbicide and may result in pruning of secondary roots.
	See Weed Table C	2.25 L/ha + 1.1 kg/ha of a 900 g/kg atrazine product	Nufarm Pendimethalin 440 should be applied in a tank mix with atrazine after planting and before the emergence of crop and weeds, where thornapple, noogoora burr, Bathurst burr, caltrop, paddy melon or mintweed are expected to be a major problem. <b>DO NOT</b> 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. <b>DO NOT</b> use Nufarm Pendimethalin 440 mixed with atrazine on heavy clay soils, as weed control may not be adequate. Refer to the section on "Incorporation" under the heading "General Instructions". Crop injury may result if cold weather follows planting. Avoid application during prolonged cold wet conditions as this inhibits surface breakdown of the herbicide and may result in pruning of secondary roots.
Industrial hemp (not to be used in hemp intended for human consumption)	See Weed Table B	1.5 - 2.25 L/ha	Apply one pre-emergent (of weeds) application to control annual grasses and broadleaf weeds, or apply one post-emergent "over-the top" application to control small annual grasses and broadleaf weeds. Use suitable ground application equipment. Ensure equipment is correctly calibrated. Use lower rates when short residual control is required. Increase the application rate when longer residual control is required. <b>To Avoid Crop Damage:</b> It is advisable to avoid spraying of emerging crops where possible. "Over-the-top" spray application has not been fully evaluated for industrial hemp crops under all growing conditions, and should only be considered a treatment option following trials that show hemp plants will tolerate herbicide application at the proposed rate and at the crop growth stages when treatment will be applied. Initially treat target weeds in a small area within the crop when "over-the-top" spray is to be applied, and closely monitor plant health. Discontinue applications when any adverse symptoms post-treatment are observed.

CROP	WEEDS	RATE	CRITICAL COMMENTS
Broad beans	Poppies Wireweed ( <i>Polygonum aviculare</i> )	3 L/ha	<b>MINIMUM PLANTING DEPTH:</b> Carrots, parsnips: 15 mm. Processing peas and French beans: 30 mm. Seed should be sown with press wheels or rollers behind the planter in order to ensure coverage of the seed and compaction of the seed bed. Apply Nufarm Pendimethalin 440 to a fine seedbed free of ridges, clods and trash. Use the higher rates on heavier textured soils or those with a higher organic matter content. Incorporate with 12 - 25 mm of spray irrigation or rainfall within one day of application for optimum performance. <b>DO NOT</b> disturb the soil by rolling or harrowing after application. <b>DO NOT</b> apply where heavy rainfall or irrigation is likely to lead to water logging. <b>DO NOT</b> use on soils with an organic matter content above 6% or inconsistent weed control may occur.
Carrots, Parsnips	See Weed Table D Weed Table D plus Wild radish ( <i>Raphanus raphanistrum</i> ) Sowthistle ( <i>Sonchus oleraceus</i> )	1.5 - 2.25 L/ha 1.5 L/ha + 1 kg ai/ha linuron	<b>CARROTS:</b> Apply post-sowing and prior to crop emergence. In the event that the crop emerges before application, the application may still be applied to carrots <b>NO LATER</b> than at the cotyledon stage (BBCH10). <b>PARSNIPS:</b> apply to a firm seed bed free of ridges, clods and trash within 2 days after sowing. Irrigation is not required where adequate rainfall occurs immediately post application. <b>PROCESSING PEAS:</b> Apply as soon as possible after sowing (ideally within 2 days) and before the plumule is less than 13 mm from reaching the soil surface. <b>FRENCH BEANS:</b> For use in the Lockyer and Fassifern Valleys only. <b>DO NOT</b> apply to French beans sown during the autumn, winter or early spring or which are likely to be stressed by cold weather.
Processing peas	See Weed Table D	1.5 - 3 L/ha	
French beans		2.25 - 3 L/ha	

CROP	WEEDS	RATE	CRITICAL COMMENTS
Onions, Garlic	Hogweed (Wireweed) ( <i>Polygonum aviculare</i> )	0.56 - 0.75 L/ha	<p>Apply in conjunction with other herbicides as advised by a qualified crop advisor to ensure an adequate level of weed control is achieved in adverse conditions.</p> <p><b>Pre-Emergence: DO NOT</b> use on sandy soils.</p> <p><b>MINIMUM PLANTING DEPTH:</b> 15 mm.</p> <p>Apply from immediately after sowing until just prior to emergence. Apply Nufarm Pendimethalin 440 to a fine, firm seedbed free of clods and trash. Use the higher rates on heavy textured soils or those with a high organic content. For optimum performance incorporate with 12 - 25 mm of spray irrigation within one day of application. <b>DO NOT</b> exceed 0.56 L/ha if soil conditions are wet and cold.</p>
		0.75 - 1.5 L/ha	<p><b>Post-Emergence:</b> Apply 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 Nufarm Pendimethalin 440 on crop does not exceed 2.25 L/ha per season. Allow a minimum 14 day interval between spray applications.</p> <p>Avoid applying Nufarm Pendimethalin 440 to areas where water logging is likely to occur.</p> <p>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.</p> <p>Depth of sowing is critical. Onions must be sown to a depth of at least 15 mm with press wheels or rollers behind planter to ensure coverage and compaction.</p> <p>Apply in sufficient water volume to ensure adequate spray penetration of the crop, to provide complete and thorough coverage of weed foliage and soil.</p> <p><b>DO NOT</b> disturb the soil by rolling or harrowing after application.</p> <p>For optimum performance, incorporate with spray irrigation within a day of planting. However, <b>DO NOT</b> water heavily (no more than 12 mm irrigation) for at least 5 days after application. <b>DO NOT</b> apply if heavy rain is likely within a week of application, as crop damage may result. <b>DO NOT</b> exceed 0.75 L/ha if soil conditions are wet and cold. <b>DO NOT</b> apply more than 3 times per season.</p> <p><b>DO NOT</b> apply more than 3 L/ha per season. <b>DO NOT</b> apply to garlic on light/sandy soils.</p>
		0.56 – 0.75 L/ha (see Critical comments)	<p><b>Light/sandy soils (not for garlic)</b></p> <p><b>DO NOT</b> apply pre-emergence.</p> <p><b>Application to moist soil is best.</b></p> <p>Apply 0.56 - 0.75 L/ha post emergence at the 4 - 5 leaf stage, with 1 - 2 further applications of 0.56 - 0.75 L/ha as needed throughout the season (approx 3 - 4 weeks apart).</p>
		0.75 - 1.5 L/ha (see Critical comments)	<p><b>Heavy/high organic matter soils (not for garlic)</b></p> <p>Application to moist soil is best. Apply 0.75 - 1.5 L/ha pre-emergence within 2 days of planting. Apply to a fine firm seed bed free of ridges, clods and trash.</p> <p><b>For furrow irrigated crops, application to a dry seed bed, followed by irrigation within 5 days is optimal.</b></p> <p>An application of 0.75 - 1.1 L/ha post emergence may be made at the 2 leaf stage. (Application at this stage may cause yellowing of onions).</p>
Spring onions, shallots (Pre-planting application)	Wireweed ( <i>Polygonum aviculare</i> )	0.75 - 1.5 L/ha	<p>Apply as a single pre-plant application only.</p> <p>Soils containing a high percentage of organic matter can result in poor control. It is recommended that applications to soils containing high percentage of organic matter (greater than 6%) be avoided.</p> <p>For best results, seedbeds should be free of weeds, trash and clods at the time of application.</p>
Radish	Weed Table D plus Wild radish ( <i>Raphanus raphanistrum</i> ) Sowthistle ( <i>Sonchus oleraceus</i> )	1.5 - 2.25 L/ha	<p>Apply as a single application within 2 days of sowing.</p> <p><b>DO NOT</b> apply where heavy rainfall or irrigation is likely to lead to water logging.</p> <p><b>DO NOT</b> use product on soils with organic matter content above 6% as inconsistent weed control will occur.</p>
Leeks	Hogweed (Wireweed) ( <i>Polygonum aviculare</i> )	0.56 - 1.13 L/ha	<p><b>Transplanted crops:</b></p> <p>Apply foliar spray at the 1.5 leaf stage of the crop and repeat application (if required) at the 3 leaf stage of the crop, as applicable to cultivar and location.</p> <p>Apply using 50 to 200 L water/ha</p> <p><b>DO NOT</b> apply more than two applications per crop.</p> <p><b>WARNING: CROP PHYTOTOXICITY HAS BEEN OBSERVED IN SOME CASES,</b> with post-emergence-crop application. To reduce this or avoid it altogether, water the sprayed crop within 1 hour of application to remove the chemical from the crop.</p> <p><b>Direct seed crops:</b></p> <p>See critical comments for onions.</p>

**POST-PLANT, PRE-EMERGENCE TREATMENT (INCORPORATED OR NON-INCORPORATED)**

CROP	WEEDS	RATE	CRITICAL COMMENTS
Sugarcane	Summer grass ( <i>Digitaria ciliaris</i> ) Awnless barnyard grass ( <i>Echinochloa colona</i> ) Crowfoot grass ( <i>Eleusine indica</i> ) Guinea grass ( <i>Panicum maximum</i> c.v Hamil and c.v Guinea) Green Summer grass ( <i>Brachiaria subquadrifera</i> )	2.25 - 3.4 L/ha	Nufarm Pendimethalin 440 should be applied as soon as possible after planting and before weed emergence. Consolidation (cutaway operation) of the planting furrow prior to application, to prevent soil movement into the base of the drill, is recommended. Expect poor grass control in soils, which contain a high percentage of organic matter. (Refer to "Incorporation" under "General Instructions"). 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. <b>NOTE:</b>
	Blue top (Blue billygoat weed) ( <i>Ageratum houstonianum</i> )	2.25 L/ha plus 1.7 kg/ha of a 900 g/kg atrazine product or 1.7 kg/ha of a 900 g/kg diuron product	<b>INCORPORATION:</b> Under dry conditions or where some cultivation is expected after application Nufarm Pendimethalin 440 should be thoroughly incorporated by finger rakes to a shallow depth. In subsequent tillage operations, cultivation depth should not exceed the depth of incorporation. <b>WATER INCORPORATION:</b> Incorporate using 12 - 25 mm of spray irrigation or when suitable rainfall is expected 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 Nufarm Pendimethalin 440, resulting in the movement of soil from the top to the bottom of the planting drill, weed control will be reduced. For other broadleaf weeds higher rates of atrazine or diuron can be tank mixed with Nufarm Pendimethalin 440 - see the relevant atrazine or diuron labels for details.
	Barnyard grass ( <i>E. crus-galli</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> )	2.25L/ha + 400 mL/ha Spark® Herbicide	Incorporate into the soil either by overhead irrigation, rainfall or mechanical incorporation, to a minimum depth of 5 cm. Incorporate as soon as possible and within 3-5 days after application. Read all directions for use in sugarcane on the Spark® Herbicide label.
Combine sown rice	Barnyard grass ( <i>Echinochloa</i> spp.) Silvertop grass (Brown beetle grass) ( <i>Diplachne reptatrix</i> ) Starfruit ( <i>Damasonia minus</i> )	2.25 L/ha + 1.8 kg ai/ha propanil	Apply tank mixture up to the 2 leaf stage of Barnyard grass and 1 leaf stage of Silvertop, either by ground rig in 70 - 100L/ha or by aircraft in 25 - 30 L/ha total spray volume. <b>WATER MANAGEMENT:</b> Flush immediately after sowing to enable a good even germination of rice and to ensure the soil surface is sealed. Apply a second flush or permanent flood after 2 days but not later than 5 days after the application. 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. <b>RICE STAGE:</b> After the first flushing irrigation, the stage of rice at application of this tank mixture is not critical. Timing should be based on the stage of weed growth and water management. However, <b>DO NOT</b> apply to rice in a weakened condition as a result of soil salts, moisture stress, over watering, or any other cause. Some transient leaf burn of the rice may result after the application but no long-term effects will result. Rice seed should be covered with at least 1cm of water after the first flushing irrigation before Nufarm Pendimethalin 440 plus propanil is applied to germinating rice seed.

**POST-EMERGENCE - COTTON**

CROP	WEEDS	RATE	CROP STAGE	CRITICAL COMMENTS
Cotton (including Roundup Ready Flex cotton)	See Weed Table B	3.4 L/ha	4 – 18 node	<b>Directed spray applications only:</b> For maximum efficacy ensure even distribution of spray across the furrow. Use a directed spray to avoid shading by the crop which may affect herbicide placement. Rainfall or irrigation must occur within 10 days of application for product incorporation into the soil. <b>DO NOT</b> apply after full flowering (BBCH 65). Leaf yellowing and crinkling will usually occur after application. <b>Apply only one application of Nufarm Pendimethalin 440 Herbicide per crop.</b>
Roundup Ready Flex cotton		3.4 L/ha + 1.5 - 2.2 L/ha Nufarm weedmaster® DST®		<b>Directed spray applications only:</b> For maximum efficacy ensure even distribution of spray across the furrow. Apply as a directed spray application when weeds are present. Rainfall or irrigation must occur within 10 days of application for product incorporation into the soil. <b>DO NOT</b> apply after full flowering (BBCH 65). Leaf yellowing and crinkling will usually occur after application. <b>Apply only one application of Nufarm Pendimethalin 440 Herbicide per crop.</b>

# POST-PLANT AND FLUSHING

CROP	WEEDS	RATE	CRITICAL COMMENTS
Combine sown rice and pasture sod sown rice	As above plus Suppression of Annual sedges ( <i>Cyperus</i> spp.)	2.25 or 3.4 L/ha + 800 mL/ha Nufarm Paraquat 250	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 up to the 3 leaf stage of barnyard grass, silvertop and sedges, before rice emergence. Apply by ground rig in 70 - 100 L/ha of water total spray volume. <b>WATER MANAGEMENT:</b> 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 Nufarm Pendimethalin 440 plus Nufarm Paraquat 250. Apply a second flush or permanent flood after 1 day but not later than 5 days after the application of Nufarm Pendimethalin 440 plus Nufarm Paraquat 250. 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. <b>RICE STAGE:</b> After the first flushing irrigation, Nufarm Pendimethalin 440 plus Nufarm Paraquat 250 must be applied before rice emergence. <b>DO NOT</b> apply to rice in a weakened condition from causes such as soil salts, moisture stress, over-watering, or any other cause.

# PRE-TRANSPLANT TREATMENT

CROP	WEEDS	RATE	CRITICAL COMMENTS
Transplanted broccoli, cabbage, cauliflower, Brussels sprouts	See Weed Table D See Weed Table D plus Annual nettles ( <i>Urtica</i> spp.)	1.5 - 2.25 L/ha 1.5 - 1.9 L/ha + 9 L/ha Ramrod®	Apply Nufarm Pendimethalin 440 to a firm seedbed free of ridges, clods and trash between 2 - 7 days before transplanting. Use the higher rates on heavier textured soils or those with a higher organic matter content. For optimum performance incorporate with 12 - 25 mm of spray irrigation (or when rainfall is expected within one day) and ensure minimal mechanical disturbance to the seed bed at transplanting. <b>DO NOT</b> apply after transplanting as damage will occur. <b>DO NOT</b> apply where water logging is likely to occur after transplanting or crop stunting will result. <b>DO NOT</b> use Nufarm Pendimethalin 440 on soils with an organic matter content above 6% as inconsistent weed control will occur. Ramrod® may be tank mixed with Nufarm Pendimethalin 440 prior to transplanting or applied separately after transplanting. <b>Brassica leafy vegetables, rocket</b> : make one application per crop. Ground application should be by boomspray in 50 - 200 L/ha. <b>DO NOT</b> use on kale grown for fodder.
Brassica leafy vegetables, Rocket	Dwarf amaranthus ( <i>Amaranthus macrocarpus</i> ) Green amaranthus ( <i>Amaranthus vindis</i> ) Indian hedge mustard ( <i>Sisymbrium orientale</i> ) Potato weed ( <i>Galinoga pavillora</i> ) Sowthistle ( <i>Sonchus oleraceus</i> ) Turnip weed ( <i>Rapistrum rugosum</i> ) Wild radish ( <i>Raphanus raphanistrum</i> ) Wild turnip ( <i>Brassica tournefortii</i> ) Winter grass ( <i>Poa annua</i> )	0.75 - 1.5 L/ha	
Transplanted lettuce	See Weed Table D	1.5 - 3 L/ha	
Transplanted processing tomatoes		1.5 - 2.25 L/ha	Apply Nufarm Pendimethalin 440 to a firm seedbed free of ridges, clods and trash between 2-7 days before transplanting. Use the higher rates on heavier textured soils or those with a higher organic matter content. For optimum performance incorporate with 12 - 25mm of spray irrigation (or when rainfall is expected within one day) and ensure minimal mechanical disturbance to the seed bed at transplanting. <b>DO NOT</b> apply after transplanting as damage will occur. <b>DO NOT</b> apply where water logging is likely to occur after transplanting or crop stunting will result. <b>DO NOT</b> use Nufarm Pendimethalin 440 on soils with an organic matter content above 6% as inconsistent weed control will occur.

**PERENNIAL CROPS**

CROP	WEEDS	RATE	CRITICAL COMMENTS
Avocados Bananas Citrus Deciduous fruits Grapevines Hops Lychees Macadamia nuts Mangoes Nuts	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> ) Dead nettle ( <i>Lamium amplexicaule</i> ) Dwarf amaranth ( <i>Amaranthus macrocarpus</i> ) Fat hen ( <i>Chenopodium album</i> ) Green amaranth ( <i>Amaranthus viridis</i> ) Pigeon grass ( <i>Setaria</i> spp.) Pigweed ( <i>Portulaca oleracea</i> ) Prickly lettuce ( <i>Lactuca serriola</i> ) Sowthistle ( <i>Sonchus oleraceus</i> ) Summer grass ( <i>Digitaria anguinalis</i> ) Winter grass ( <i>Poa annua</i> ) Wireweed ( <i>Polygonum aviculare</i> )	6.75 - 9 L/ha	<b>DO NOT</b> apply Nufarm Pendimethalin 440 to grapevines after bud swell. <b>PRECAUTION:</b> Nufarm Pendimethalin 440 or Nufarm Pendimethalin 440 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 spray contact with green bark, fruit and foliage. If applied to freshly transplanted trees or vines, soils should be compacted prior to application of Nufarm Pendimethalin 440 to avoid contact with roots. Nufarm Pendimethalin 440 must be incorporated by a minimum of 5 mm 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 Nufarm Pendimethalin 440 should be tank mixed with a knockdown herbicide at the recommended rate. Apply one application only prior to hop plants emerging from winter dormancy.  Crop damage and/or reduced weed control may result if Nufarm Pendimethalin 440 is not incorporated successfully. If insufficient rainfall follows within 10 days after application the product must be incorporated over the whole surface area treated through the use of overhead sprinklers or by mechanical means, using appropriate equipment to avoid root damage. Drip irrigation is inadequate for this purpose. A minimum of 10 - 15mm of rain or sprinkler irrigation is normally required to incorporate Nufarm Pendimethalin 440 into the soil. 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, Nufarm Pendimethalin 440 should be tank mixed with a knockdown herbicide at the recommended rate. Use of simazine could lead to crop damage on vines younger than 3 years of age. Refer to the simazine product label. <b>DO NOT</b> apply tank mixtures of Nufarm Pendimethalin 440 plus simazine to alkaline soils.
Citrus Deciduous fruits Grapevines Nuts	Feather Top Rhodes Grass Witchgrass As above plus Cobbler's pegs ( <i>Bidens pilosa</i> ) Curious weed ( <i>Schkuhria pinnata</i> ) Stinking Roger ( <i>Tagetes minuta</i> ) As above plus Caltrop ( <i>Tribulus terrestris</i> )	7.5 - 9 L/ha 9 L/ha 6.75 L/ha + 900 g/ha of a 900 g/kg simazine product 9 L/ha + 1.1 kg/ha of a 900 g/kg simazine product	
Established lucerne seed crops only	Fat hen ( <i>Chenopodium album</i> ) Summer grass ( <i>Digitaria anguinalis</i> ) As above plus Pigeon grass ( <i>Setaria</i> spp.)	2.25 L/ha 3.4 L/ha	During the spring months prior to irrigation, the lucerne stand should be grazed down hard to produce a low trash soil surface. Apply Nufarm Pendimethalin 440 and incorporate treatment by 12 - 25 mm of spray irrigation or when rainfall is expected within one day of application.
Eucalypt forestry plantations	Amaranthus ( <i>Amaranthus</i> spp.) Annual ryegrass ( <i>Lolium rigidum</i> ) Asthma plant ( <i>Euphorbia hirta</i> ) Barnyard grass ( <i>Echinochloa crus-galli</i> ) Chickweed ( <i>Stellaria media</i> ) Crowsfoot grass ( <i>Eleusine indica</i> ) Dead nettle ( <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> ) Sowthistle ( <i>Sonchus oleraceus</i> ) Summer grass ( <i>Digitaria ciliaris</i> ) Winter grass ( <i>Poa annua</i> ) Wireweed ( <i>Polygonum aviculare</i> )	6.75 - 9 L/ha	<b>PRE-PLANTING:</b> Apply 7 to 2 days prior to transplanting. Use the higher rate on heavier textured soils or soils with higher organic matter. Mechanical disturbance should be minimised during planting to optimise performance. <b>POST-PLANTING:</b> 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.



CROP	WEEDS	RATE	CRITICAL COMMENTS
Pyrethrum Pre-emergence crops	See Weed Table D	1.5 - 2.25 L/ha	Apply Nufarm Pendimethalin 440 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.
Pyrethrum Post-emergence crops		1.5 - 3.75 L/ha	Apply Nufarm Pendimethalin 440 prior to weed germination at any stage of pyrethrum growth from 2 true leaf stage to pre-flowering, as advised by qualified crop advisor. Seek advice from qualified crop advisor before applying follow-up applications in any one year. Incorporate with 12 - 25 mm of rainfall or irrigation within 1 day of application for optimum performance.
Pyrethrum newly transplanted "splits"	Seeding docks ( <i>Rumex</i> spp.) Suppression of - Capeweed ( <i>Arctotheca calendula</i> )	3.75 L/ha	Apply immediately following transplanting before emergence of weeds. Repeat applications in any one year should only be made according to advice from crop advisers. Use lower rates on light soils. This product can be used in combination with other registered herbicides only as recommended by crop advisers.
Established Pyrethrum (one year old or greater)	Spear thistle ( <i>Cirsium vulgare</i> ) Storksbill ( <i>Erodium</i> spp.)		Apply in autumn or spring prior to weed germination. Note existing weeds must be controlled with a knockdown herbicide, as Nufarm Pendimethalin 440 will not control these weeds. Repeat applications in any one year should only be made according to advice from crop advisers. This product can be used in combination with other registered herbicides as recommended by crop advisers.
Tea tree ( <i>Melaleuca alternifolia</i> )	Weed Table B plus Annual ryegrass ( <i>Lolium rigidum</i> ) Barnyard grass ( <i>Echinochloa</i> spp.) Chickweed ( <i>Stellaria media</i> ) Crowfoot grass ( <i>Eluesine indica</i> ) Dead nettle ( <i>Lamium amplexicaule</i> , Dwarf amaranth ( <i>Amaranthus macrocarpus</i> ) Fat hen ( <i>Chenopodium album</i> ) Green amaranth ( <i>Amaranthus viridis</i> ) Pigeon grass ( <i>Setaria</i> spp.) 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> )	3.4 - 6.75 L/ha	<b>DO NOT</b> 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. <b>Pre-Transplanting:</b> Apply 7 to 2 days prior to transplanting seedlings. Use the higher rates on heavier textured soils or soils with higher organic matter. Mechanical disturbances should be minimised during planting to optimise performance. Avoid contact of treated soil with seedling roots. <b>Post-Planting:</b> Apply immediately following planting and pre-emergence of weeds. If applied to freshly transplanted trees, soils should be compacted prior to application of Nufarm Pendimethalin 440 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.

#### ESTABLISHED TURF

SITUATION/CROP	WEEDS	RATE	CRITICAL COMMENTS
Turf: warm season species: kikuyu, couch, saltwater couch, buffalo grass, bahia grass and zoysia grass turf	Crowsfoot grass (Crab grass) ( <i>Eleusine indica</i> ) Summer grass ( <i>Digitaria anguinalis</i> )	3.4 L/ha or 34 mL/100 m <sup>2</sup>	Incorporate by 10 - 15 mm of spray irrigation or when rainfall is expected, within one day of application. Apply once every 10 weeks from early September to the end of February.
Queensland blue couch, hybrid couch c.v. Tifdwarf	Winter grass ( <i>Poa annua</i> )	2.25 L/ha or 22.5 mL/100 m <sup>2</sup>	
Turf: cool season species: Kentucky blue grass		3.4 L/ha or 34 mL/100 m <sup>2</sup>	The product should be incorporated by 10 - 15 mm of spray irrigation or rainfall as soon as possible within one day of application.
Perennial ryegrass, bent grass		2.25 L/ha or 22.5 mL/100 m <sup>2</sup>	Apply Nufarm Pendimethalin 440 only once per year to control weeds in perennial ryegrass and bent grass.

#### IRRIGATION CHANNELS

SITUATION/CROP	WEEDS CONTROLLED	RATE	CRITICAL COMMENTS
Cotton irrigation banks, channels and drains	Barnyard grass ( <i>Echinochloa</i> spp.), Silvertop grass (Brown beetle grass) ( <i>Diplachne reptatrix</i> )	3.4 - 6.75 L/ha	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. <b>DO NOT</b> use water in channel to irrigate or pre-irrigate susceptible crops.
		4.5 L/ha + 9 kg/ha of a 900 g/kg diuron product	Use this mixture where long term control is required or a broader weed spectrum is present. See 900 g/kg diuron product label for details. Water in the channel should NOT be used to irrigate or pre-irrigate susceptible crops.

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 spp.)</i>	Native millet <i>(Panicum decompositum)</i>
Button grass	<i>(Dactyloctenium radicans)</i>	Pale pigeon grass <i>(Setaria glauca)</i>
Common heliotrope	<i>(Heliotropium europeum)</i>	Paspalidium <i>(Paspalidium spp.)</i>
Crested goosefoot	<i>(Chenopodium cristatum)</i>	Pepper grass <i>(Paniceum whitei)</i>
Crowsfoot grass	<i>(Eleusine indica)</i>	Pigweed <i>(Portulaca oleracea)</i>
Dwarf amaranth	<i>(Amaranthus macrocarpus)</i>	Queensland bluegrass <i>(Dichanthium sericeum)</i>
Early Spring grass	<i>(Eriochloa spp.)</i>	Red Flinders grass <i>(Isellema 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>	Stinkgrass <i>(Eragrostis cilianensis)</i>
Mexican clover	<i>(Richardia brasiliensis)</i>	Weeping lovegrass <i>(Eragrostis parviflora)</i>
Mossman river grass	<i>(Cenchrus echinatus)</i>	Wireweed <i>(Polygonum aviculare)</i>
Suppression of the following weeds is also obtained.		
Blackberry nightshade	<i>(Solanum nigrum)</i>	Mintweed <i>(Salvia reflexa)</i>
Caltrop	<i>(Tribulus terrestris)</i>	Pepper cress <i>(Lepidium spp.)</i>
Common verbena	<i>(Verbena officinalis)</i>	Stagger weed <i>(Stachys arvensis)</i>

WEED TABLE B		
IN COTTON, SUNFLOWERS, MAIZE, INDUSTRIAL HEMP AND TEA TREE - with post-plant pre-emergence surface treatment (Nufarm Pendimethalin 440 alone).		
The following weeds are controlled:		
Barnyard grass	<i>(Echinochloa spp.)</i>	Pale pigeon grass <i>(Setaria glauca)</i>
Button grass	<i>(Dactyloctenium radicans)</i>	Paspalidium <i>(Paspalidium spp.)</i>
Common heliotrope	<i>(Heliotropium europeum)</i>	Pepper grass <i>(Paniceum whitei)</i>
Crested goosefoot	<i>(Chenopodium cristatum)</i>	Pigweed <i>(Portulaca oleracea)</i>
Crowsfoot grass	<i>(Eleusine indica)</i>	Queensland bluegrass <i>(Dichanthium sericeum)</i>
Dwarf amaranth	<i>(Amaranthus macrocarpus)</i>	Red Flinders grass <i>(Isellema vaginiflorum)</i>
Early Spring grass	<i>(Eriochloa spp.)</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>	Stinkgrass <i>(Eragrostis cilianensis)</i>
Mexican clover	<i>(Richardia brasiliensis)</i>	Weeping lovegrass <i>(Eragrostis parviflora)</i>
Mossman River grass	<i>(Cenchrus echinatus)</i>	Wireweed <i>(Polygonum aviculare)</i>
Native millet	<i>(Panicum decompositum)</i>	
Suppression of the following weeds is also obtained.		
Caltrop	<i>(Tribulus terrestris)</i>	Mintweed <i>(Salvia reflexa)</i>
Common sowthistle	<i>(Sonchus oleraceus)</i>	Pepper cress <i>(Lepidium spp.)</i>
Common verbena	<i>(Verbena officinalis)</i>	Stagger weed <i>(Stachys arvensis)</i>

WEED TABLE C		
IN MAIZE - with post-plant pre-emergence surface treatment of Nufarm Pendimethalin 440 plus tank mix with atrazine.		
The following weeds are controlled in addition to those controlled by Nufarm Pendimethalin 440 alone:		
Bathurst burr	<i>(Xanthium spinosum)</i>	Noogoora burr <i>(Xanthium pungens)</i>
Caltrop	<i>(Tribulus terrestris)</i>	Paddy melon <i>(Cucumis spp.)</i>
Mintweed	<i>(Salvia reflexa)</i>	Thornapple <i>(Datura spp.)</i>
The following are not controlled by Nufarm Pendimethalin 440 or the mixture with atrazine		
Bindweed	<i>(Convolvulus spp.)</i>	Wandering Jew <i>(Commelina spp.)</i>
Nut grass	<i>(Cyperus rotundus)</i>	

WEED TABLE D			
IN CARROTS, PARSNIPS, PROCESSING PEAS, FRENCH BEANS, RADISH, TRANSPLANTED CABBAGE, CAULIFLOWER, BROCCOLI, BRUSSELS SPROUTS, LETTUCE, TOMATOES AND PYRETHRUM - with pre-emergence surface treatment after planting or before transplanting as directed and incorporated by spray irrigation.			
The following weeds are controlled:			
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> )
Dead nettle	( <i>Lamium amplexicaule</i> )	Wireweed	( <i>Polygonum aviculare</i> )
Fat hen	( <i>Chenopodium album</i> )		
Suppression only of the following weeds at the lower rates. Higher rates or tank mixtures are required for complete control (see Directions for Use table).			
Annual nettles	( <i>Urtica</i> spp.)	Indian hedge mustard	( <i>Sisymbrium orientale</i> )
Blackberry nightshade	( <i>Solanum nigrum</i> )	Turnip weed	( <i>Rapistrum rugosum</i> )
Common sowthistle	( <i>Sonchus oleraceus</i> )	Wild radish	( <i>Raphanus raphanistrum</i> )
Fumitory	( <i>Fumaria</i> spp.)	Winter grass	( <i>Poa annua</i> )

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

#### WITHHOLDING PERIODS

**HARVEST** (all crops except garlic): **NOT REQUIRED WHEN USED AS DIRECTED**

**Garlic: field grown - NOT REQUIRED WHEN USED AS DIRECTED.**

**Covered or protected grown/treated garlic: DO NOT ALLOW TREATED GARLIC GROWN IN COVERED OR PROTECTED SITUATIONS SUCH AS GLASSHOUSES, GREENHOUSES AND PLASTIC TUNNELS TO BE MADE AVAILABLE FOR HUMAN OR ANIMAL CONSUMPTION.**

#### GRAZING:

**Cotton: DO NOT ALLOW LIVESTOCK TO GRAZE CROPS, COTTON STUBBLE OR BE FED GIN TRASH**

**Hops: DO NOT GRAZE HOP FIELDS OR CUT FOR STOCKFEED FOR 8 WEEKS AFTER APPLICATION**

**Industrial hemp: DO NOT GRAZE LIVESTOCK ON TREATED AREA OR CUT FOR FORAGE OR FODDER FOR 28 DAYS AFTER SPRAY APPLICATION**

#### GENERAL INSTRUCTIONS

Nufarm Pendimethalin 440 Herbicide is a selective herbicide for the control of most annual grasses and certain broadleaf weeds. Nufarm Pendimethalin 440 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 Nufarm Pendimethalin 440 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.

**NOTE:** Nufarm Pendimethalin 440 will stain (yellow) any objects it contacts. Keep all objects, etc. that are not to be stained well clear of the product and spray.

#### Mixing

Put half the required volume of water in spray tank and start agitation. When using Nufarm Pendimethalin 440 alone, add Nufarm Pendimethalin 440 to partially filled tank and then add the remainder of the water. Mix thoroughly.

When using Nufarm Pendimethalin 440 in tank mixes with products such as atrazine or diuron mix these products as indicated on the relevant label and add the Nufarm Pendimethalin 440 last, then complete filling of 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 Nufarm Pendimethalin 440 with Nufarm Paraquat 250 and glyphosate herbicides, the Nufarm Pendimethalin 440 should be thoroughly mixed in the spray tank first, before adding Nufarm Paraquat 250 or Nufarm Glyphosate 450, Nufarm CRUCIAL®, Nufarm weedmaster® ARGO, Nufarm weedmaster® DST or Nufarm weedmaster® DUO.

**Tank mixtures:** Read and follow all label directions including restraints, spray drift restraints, mandatory no-spray zones, critical comments, withholding periods, regional use restrictions and safety directions for the tank mix products.

#### Application method

##### 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 Nufarm Pendimethalin 440 in tank mix combination with atrazine or diuron, nozzle screens must be no finer than 50 mesh. Apply the recommended quantity of Nufarm Pendimethalin 440 in 50 - 200L of water per hectare. Where pre-emergence surface treatment is used, the higher rates of water per hectare are recommended.

##### Aerial Application

Pre-plant soybeans, cotton, sunflowers, peanuts, navy beans, cowpeas, mung beans, pigeon peas and post-plant, post flushed combine sown rice only. Apply the recommended quantity of Nufarm Pendimethalin 440 in 25 - 60L 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 be used and an accurate swath width is maintained. **DO NOT** apply if wind speed is greater than 16 km/hour. Always spray with a cross wind in accordance with recommended flying practice.

**DO NOT** apply NUFARM PENDIMETHALIN 440 Herbicide by aerial spraying in eucalypt forestry situations.

#### **Incorporation**

- (a) Nufarm Pendimethalin 440 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.
- (b) Post-plant pre-emergence surface applications of Nufarm Pendimethalin 440 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.
- (c) Maize is tolerant to Nufarm Pendimethalin 440 either alone or in mixtures with atrazine if the seed germinates below the chemically treated band. Maize, carrots and rice are NOT tolerant to Nufarm Pendimethalin 440 if it is in direct contact with the seed.

#### **Cereal Seed Dressing**

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 Nufarm Pendimethalin 440 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 Department of Agriculture Agronomist for further advice.

#### **Weather Conditions At 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.



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

#### **Following crops**

In the event of crop failure the soil should be cultivated to a minimum depth of 16cm 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 seeding depth must be below the refilled area.

*The following crops may be sown after a minimum interval of 2 months after application of Nufarm Pendimethalin 440*

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

*The following crops may be sown after a minimum interval of 5 months after application of Nufarm Pendimethalin 440*

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

*The following crops may be sown after a minimum interval of 12 months after application of Nufarm Pendimethalin 440*

Redbeet (beetroot), spinach, silverbeet, poppy.

#### **RESISTANT WEEDS WARNING**

### **GROUP 3 HERBICIDE**

Nufarm Pendimethalin 440 Herbicide is a member of the dinitroaniline group of herbicides. Nufarm Pendimethalin 440 has the inhibition of microtubule assembly mode of action. For weed resistance management, Nufarm Pendimethalin 440 is a Group 3 herbicide. Some naturally-occurring weed biotypes resistant to Nufarm Pendimethalin 440 and other Group 3 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 Nufarm Pendimethalin 440 or other Group 3 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Nufarm Australia Limited accepts no liability for any losses that may result from the failure of Nufarm Pendimethalin 440 to control resistant weeds.

#### **COMPATIBILITY**

Nufarm Pendimethalin 440 is compatible with the following herbicides: 900 g/kg atrazine, 900 g/kg diuron, 900 g/kg simazine, Nufarm Paraquat 250, Nufarm Glyphosate 450, Nufarm CRUCIAL®, Nufarm weedmaster ARGO, Nufarm weedmaster DST, Nufarm weedmaster DUO, Nufarm Ramrod®. If tank mixing, observe the directions under Mixing.

#### **PRECAUTIONS**

##### **Re-entry period**

**DO NOT** allow entry into treated areas for 12 hours. 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 CROPS, NATIVE AND OTHER NON-TARGET PLANTS**

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

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

Dangerous to fish and other aquatic life. **DO NOT** contaminate streams, rivers or watercourses with the chemical or used containers. **DO NOT** apply or allow spray to drift onto adjacent aquatic areas (ponds, streams, lakes, rivers and waterways). Allow sufficient buffer distances between downwind water bodies and the sprayed area.

#### STORAGE AND DISPOSAL

Store in the closed, original container in a dry, cool well-ventilated area out of direct sunlight. **DO NOT** store below 5°C. Extended storage below 5°C can result in the formation of crystals on the bottom of the container. If crystallisation does occur, store the container on its side at room temperature and rock occasionally until crystals re-dissolve.

#### 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 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. **DO NOT** burn empty containers or product.

#### Refillable containers

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

#### SAFETY DIRECTIONS

Harmful if swallowed. Will irritate the 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 day's use, wash gloves and face shield (or goggles) and contaminated clothing.

#### FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 764 766. If swallowed, **DO NOT** induce vomiting. If in eyes wash it out immediately with water.

#### ADDITIONAL STATEMENTS (WHS REGULATIONS 2011)

**Repeated exposure may cause skin dryness or cracking. Causes serious eye irritation. May cause an allergic skin reaction. Suspected of causing cancer. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways. DO NOT** handle until all safety precautions have been read and understood. Avoid breathing vapours or spray. Use only outdoors or in a well ventilated area. Wash skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves, clothing, eye and face protection. IF exposed or concerned: get medical advice or attention. IF SWALLOWED: immediately call a POISON CENTRE/DOCTOR. **DO NOT** induce vomiting. IF ON SKIN: wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before use.

#### SAFETY DATA SHEET

For further information refer to the Safety Data Sheet (SDS), which can be obtained by scanning the QR code, from your supplier or the Nufarm website.

**In case of emergency: Phone 1800 033 498 (24 hrs) and ask for shift supervisor.**

#### PRODUCT STEWARDSHIP INFORMATION AND TOOLS

[nufarm.com.au/spraywise](http://nufarm.com.au/spraywise) is a website which contains resources on spray drift management, recording keeping and application technologies.

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

When spraying in or near areas with sensitive crops such as cotton, check online at [safacrop.com.au](http://safacrop.com.au) for the proximity of sensitive crops mapped by growers.

[stewardshipfirst.com.au](http://stewardshipfirst.com.au) is a website with CropLife Australia's suite of world-leading product stewardship initiatives, programs and best-practice guides.

#### CONDITIONS OF SALE

Any provisions or rights under the Competition and Consumer Act 2010 or relevant state legislation which cannot be excluded by those statutes or by law are not intended to be excluded by these conditions of sale. Subject to the foregoing, all warranties, conditions, rights and remedies, expressed or implied under common law, statute or otherwise, in relation to the sale, supply, use or application of this product, are excluded. Nufarm Australia Limited and/or its affiliates ("Nufarm") shall not accept any liability whatsoever (including consequential loss), or howsoever arising (including negligence) for any damage, injury or death connected with the sale, supply, use or application of this product except for liability which cannot be excluded by statute.

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**nufarm.com.au**

**NUFARM AUSTRALIA LIMITED**

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For product advice, or to learn more about complementary Nufarm solutions,  
reach out to your local Nufarm specialist or call **1800 NUFARM (1800 683 267)**.

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