

Product Name: Nufarm Thistrol Gold Herbicide

APVMA Approval No: 87300/136526



Label Name:	Nufarm Thistrol Gold Herbicide
Signal Headings:	POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
Constituent Statements:	ACTIVE CONSTITUENTS: 300 g/L MCPB (present as the dimethylamine salt), 20 g/L MCPA (present as the dimethylamine salt) and 10 g/L FLUMETSULAM
Mode of Action:	GROUP 2 4 HERBICIDE
Statement of Claims:	For the post-emergence control of certain broadleaf weeds in clovers, medics, grass and chicory pastures as per the DIRECTIONS FOR USE.
Net Contents:	1-1000L
Restrains:	See attachment
Directions for Use:	See attachment
Other Limitations:	
Withholding Periods:	WITHHOLDING PERIODS

GRAZING/STOCK FOOD WITHHOLDING PERIODS: DO NOT GRAZE OR CUT FOR STOCK FOOD OR HARVEST FOR SEED FOR 7 DAYS AFTER APPLICATION.

Trade Advice:	<p>LIVESTOCK DESTINED FOR EXPORT MARKET The grazing withholding period only applies to stock slaughtered for the domestic market. Some export markets apply different standards. To meet these standards, ensure that in addition to complying with the grazing withholding period that the Export Slaughter Interval is observed before stocks are sold for export slaughter.</p> <p>EXPORT SLAUGHTER INTERVAL (ESI) - 7 days: After observing the withholding period for grazing or cutting for stock food, livestock that have been grazed or fed treated crops should be placed on clean feed for 7 days prior to slaughter.</p> <p>EXPORT ANIMAL FEED INTERVAL (EAFI) - 28 days: A minimum period of 28 days must elapse between the application of Nufarm Thistrol Gold Herbicide and grazing or cutting the treated pasture as stockfeed for livestock intended for export.</p>
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General Instructions:	See attachment
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Resistance Warning:	<p>RESISTANT WEEDS WARNING GROUP 2 4 HERBICIDE Nufarm Thistrol Gold Herbicide is a member of the Triazolopyrimidines – Type 1 and Phenoxyacoxylates (Phenoxys) groups of herbicides. The product has the acetolactate synthase (ALS) inhibitor and disruptors of plant cell growth modes of action. For weed resistance management, the product is a Group 2 and a Group 4 herbicide. Some naturally occurring weed biotypes resistant to the product and other Group 2 and Group 4 herbicides may exist through normal genetic variability in any weed population. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by this product or other Group 2 or Group 4 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, Nufarm Australia Limited accepts no liability for any losses that may result from the failure of this product to control resistant weeds.</p>
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Precautions:	<p>PRECAUTIONS Re-entry period DO NOT allow entry into treated areas until spray has dried.</p>
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Protections:	<p>PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS Refer to MINIMUM RE-CROPPING INTERVALS for crop rotation information. Crops susceptible to Nufarm Thistrol Gold include but are not limited to canola, cotton, faba beans, lupins, sorghum and sunflowers. Dangerous to aquatic plants and susceptible crops. DO NOT contaminate dams, channels or drains with the product or used containers.</p> <p>PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT Very toxic to aquatic life. DO NOT contaminate streams, rivers or waterways with the product or used containers.</p>
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Storage and Disposal:	<p>STORAGE AND DISPOSAL</p> <p>Store in the closed, original container in a dry, cool well-ventilated area out of direct sunlight. Protect from frost. Keep out of reach of children. DO NOT store near food.</p> <p>Non-refillable containers</p> <p>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.</p> <p>Refillable containers</p> <p>Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
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Safety Directions:	<p>SAFETY DIRECTIONS</p> <p>Will damage eyes. Avoid contact with eyes. When opening the container and preparing the product for use, wear cotton overalls buttoned to the neck and wrist, elbow-length chemical resistant gloves and face shield or goggles. When applying by boom spray equipment, wear cotton overalls (over normal clothing) buttoned to the neck and wrist and a washable hat. If product or spray in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing.</p>
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First Aid Instructions:	<p>FIRST AID</p> <p>If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26; New Zealand 0800 764 766.</p>
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First Aid Warnings:	
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Nufarm Thistrol Gold Herbicide - General Instructions

GENERAL INSTRUCTIONS

Pasture Safety

The following pasture species have been assessed for crop safety. Certain species/varieties may show different levels of crop safety. Call your Nufarm representative for more advice. **DO NOT** use on Lucerne.

Clover (*Trifolium* spp.)

Arrowleaf clover, Balansa clover, Persian clover, Rose clover, Strawberry clover, Subterranean clover and White clover.

Medic (*Medicago* spp.)

Barrel medic, Snail medic, Spineless burr medic and Strand medic.

Grasses

Italian ryegrass, Perennial ryegrass, Cocksfoot, Tall fescue and Phalaris. Barley and Oats are sensitive, transient stem shortening and crop discoloration may occur. Application prior to Z21 to Wheat, Barley or Oats is likely to cause biomass reduction.

Chicory (*Cichorium intybus*)

Balance, Choice, Commander, and Puna II

Minimum Re-Cropping Intervals

The actives found in Nufarm Thistrol Gold are broken down in the soil by microbial activity. Warm, moist soil conditions favour highest microbial activity and quickest residue breakdown. For the recropping periods NNSW & QLD refers to summer dominant rainfall areas, where crops are grown on deep black earth soils (vertisols), with no impermeable sub-horizon in the top 30cm. SNSW, Vic, Tas, SA and WA refers to winter dominant rainfall areas on soils with no impermeable sub-horizon in the top 30 cm. Also see comments on rainfall and soil type below.

CROP	RATE	REGION	
		NNSW, QLD	SNSW, Vic, Tas, SA, WA
Cereal rye, medics, triticale, wheat, maize or soybeans	2 L/ha or 4 L/ha	Allow 7 days to elapse after application before sowing these crops	Allow 7 days to elapse after application before sowing these crops
Barley, chickpeas, clover, filed peas, lucerne, oats and peanuts	2 L/ha	Allow 3 months to elapse after application before sowing these crops.	Allow 3 months to elapse after application before sowing these crops.
	4 L/ha	Allow 6 months to elapse after application before sowing these crops.	Allow 9 months to elapse after application before sowing these crops.
Canola, faba beans, fenugreek, lathyrus, lentils, lupins, serradella, sorghum, sunflowers, Popany vetch	2 L/ha	Allow 6 months to elapse after application before sowing these crops.	Allow 9 months to elapse after application before sowing these crops.
	4 L/ha	Allow 9 months to elapse after application before sowing these crops.	Allow 12 months to elapse after application before sowing these crops.
Cotton	2 L/ha or 4 L/ha	Allow 24 months to elapse after application before sowing these crops.	Allow 24 months to elapse after application before sowing these crops.

Rainfall is required to maintain soil wetness for at least one week over the warm months to enable microbial degradation of herbicide residues to allow safe planting of sensitive crops. For SNSW, Victoria, Tasmania, SA and WA a minimum of 25 mm and preferably 50 mm or more rain must have fallen over the warm months of the year. For NNSW and Qld a minimum of 50 mm and preferably 100 mm rain or more must have fallen over the warm months of the year.

Soil type – on shallow, duplex, low organic matter soils with an impermeable sub-horizon within the root zone (30 cm deep or less) and alkaline surface soil, sensitive crops should not be planted until 2 years after application of Nufarm Thistrol Gold at either 2 or 4 L/ha. (For crops grown in NNSW and Qld on soils other than vertisols, call your Nufarm representative for more advice).

Where Nufarm Thistrol Gold residue carryover is suspected and susceptible crops are to be planted, test the treated area as follows: Where rain or irrigation allows, plant a small area of the susceptible crop 4 to 6 weeks before desired planting date and take note of any symptoms of injury. If any herbicide symptoms are observed, only plant a winter cereal.

Pot bioassay – Where not practical to do field bioassay, plant a small number of seeds of the susceptible crop into pots containing soil from the treated field. Do this test 4 to 6 weeks before desired planting date. If any herbicide symptoms are observed, only plant a cereal crop. Canola and cotton are highly sensitive to Nufarm Thistrol Gold and therefore are a good test species for a bioassay.

Mixing

To ensure even mixing, half-fill the spray tank with clean water and add the required amount of product. Add spray additive and agitate thoroughly, then add the remainder of the water. Agitate again before spraying commences. **DO NOT** tank mix with other herbicides.

Application

Good spray coverage is essential for maximum results. Spray equipment must be checked and calibrated accurately prior to application.

Ground application: Check height of boom above the target weeds to ensure the spray is evenly distributed and a double overlap pattern is obtained. An even distribution of droplets with a COARSE or VERY COARSE spray droplet size according to nozzle manufacture specifications is recommended to maximise efficacy and minimise the likelihood of spray drift. Minimum spray volume 80 L/ha for optimum results.

Aerial application: The product may be applied in a minimum 30 L of water per hectare. The use of the higher volumes is preferred due to more reliable results. Spray quality should be COARSE and swath width should not be wider than recommended for type of plane and application unit.

Cleaning Spray Equipment

After using Nufarm Thistrol Gold, empty the tank completely and drain the whole system. Thoroughly wash inside the tank using a pressure hose. Drain the tank and clean any filters in the tank, pump, lines and nozzles.

- **To rinse.** After cleaning the tank as above, quarter fill the tank with clean water and circulate through the pump, lines, hoses and nozzles. Drain and repeat the rinsing procedure twice.
- **To decontaminate.** Before spraying sensitive crops (which include canola, cotton, faba beans, lupins, sorghum and sunflowers), wash the tank and rinse the system as above. Quarter fill the tank and add an alkali detergent at 500 mL/100 L or 500 g/100 L of water and circulate throughout system for at least fifteen minutes. Drain the whole system. Remove filter and nozzles and clean them separately. Finally flush the system with cold water and allow to drain. Chlorine based cleaners are not recommended. Nufarm tank and Equipment Cleaner is not recommended.

Rinse water should be discharged onto a designated disposal area or, if this is unavailable, onto unused land away from desirable plants and watercourses.

Nufarm Thistrol Gold Herbicide - Restraints

RESTRAINTS

DO NOT apply to plants which may be stressed (not actively growing) including but not limited to prolonged periods of extreme temperature (less than 5°C or greater than 30°C), moisture stress (water-logged or drought affected), poor nutrition, disease, insect damage or previous herbicide treatment (e.g. triazines or sulfonylureas) as reduced levels of weed control and / or increased crop injury may result.

DO NOT apply if any rain is likely within 6 hours or if heavy rains or storms are forecast within 48 hours.

DO NOT irrigate (any method) for 6 hours, or to the point of runoff for at least 48 hours, after application.

DO NOT slash or mow pastures within 7 days before or after spraying.

DO NOT allow stock to graze paddocks with poisonous plants until these plants have died down as they can become more palatable after spraying. An increased quantity of poisonous plants may be eaten by stock using Spray/Graze, eg. Caltrop, Capeweed, Paterson's curse and Variegated thistle and deaths could result from causes such as nitrate poisoning.

DO NOT graze horses or pigs on Paterson's curse.

DO NOT use seed from treated chicory to grow crops for human consumption.

DO NOT apply by spraying equipment carried on the back of the user.

Spray Drift Restraints

Specific definitions for terms used in this section of the label can be found at www.apvma.gov.au/spraydrift

DO NOT allow bystanders to come into contact with the spray cloud.

DO NOT apply in a manner that may cause an unacceptable impact to native vegetation, agricultural crops, landscaped gardens and aquaculture production, or cause contamination of plant or livestock commodities, outside the application site from spray drift. The buffer zones in the relevant buffer zone tables below provide guidance but may not be sufficient in all situations.

Wherever possible, correctly use application equipment designed to reduce spray drift and apply when the wind direction is away from these sensitive areas.

DO NOT apply unless the wind speed is between 3 and 20 kilometres per hour at the application site during the time of application.

DO NOT apply if there are hazardous surface temperature inversion conditions present at the application site during the time of application. These conditions exist most evenings one to two hours before sunset and persist until one to two hours after sunrise.

Boom Sprayers (ground application)

DO NOT apply by a boom sprayer unless the following requirements are met:

- spray droplets not smaller than a COARSE spray droplet size category
- minimum distances between the application site and downwind sensitive areas are observed (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for boom sprayers').

Buffer zones for boom sprayers

Application rate	Boom height above the target canopy	Mandatory downwind buffer zones				
		Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
2 L/ha or less	0.5 m or lower	0 m	5 metres	0 m	70 metres	0 m
	1.0 m or lower		30 metres		220 metres	
2 L/ha up to the maximum label rate 4 L/ha	0.5 m or lower		20 metres		160 metres	

Vertical sprayers

DO NOT apply by a vertical sprayer.

Aircraft

DO NOT apply by fixed-wing aircraft.

DO NOT apply by aircraft unless the following requirements are met:

- spray droplets not smaller than a COARSE spray droplet size category
- for maximum release heights above the target canopy of 3 metres or 25% of rotor diameter whichever is the greatest
- minimum distances between the application site and downwind sensitive areas (see 'Mandatory buffer zones' section of the following table titled 'Buffer zones for aircraft') are observed.

Buffer zones for aircraft

Type of aircraft	Mandatory downwind buffer zones				
	Bystander areas	Natural aquatic areas	Pollinator areas	Vegetation areas	Livestock areas
Helicopter 2 L/ha or less	0 m	75 metres	0 m	400 metres	0 m
Helicopter 2 L/ha up to the maximum label rate 4 L/ha	0 m	120 metres	0 m	800 metres	0 m

Nufarm Thistrol Gold Herbicide - Directions for Use

DIRECTIONS FOR USE

TABLE 1: Clovers, medics and grass pastures (including mixed clover/grass and medic/grass pastures) and chicory as a component of clover, medic and grass pastures

CROP	CROP GROWTH STAGE	WEEDS	RATE	CRITICAL COMMENTS
Clovers	Apply when clovers have at least 2 trifoliolate leaves	Refer to Table 2: Weeds controlled	2 – 4 L/ha + Banjo Spray Adjuvant @ 0.5% v/v	Minimum spray volume 80 L/ha for optimum results. Refer table 2 for rate selection.
Grass pastures	Apply from Z13 onwards			Nufarm Thistrol Gold can cause transient crop effects (leaf spotting and biomass reduction). Recovery is expected with good growing conditions. Refer to Pasture Safety section of general instructions for information on tolerance. DO NOT apply to Berseem clover. DO NOT apply more than 2 L/ha for seed crops.
Medics	Apply when medics have at least 2 trifoliolate leaves		2 L/ha + Banjo Spray Adjuvant @ 0.5% v/v	DO NOT apply more than 2 L/ha to medic crops. Nufarm Thistrol Gold can cause transient crop effects (leaf spotting and biomass reduction). Medic crops should be treated early and delays in application could result in crops having insufficient time to recover from the temporary pause in growth with the use of this product. Medic crops are also sensitive to environmental stress which can compound stress and biomass recovery caused by Nufarm Thistrol Gold.
Chicory seedlings as a component of clover, medic and grass pastures	Apply when seedling chicory has at least 5 to 6 leaves		2 L/ha + Banjo Spray Adjuvant @ 0.5% v/v	DO NOT apply more than 2 L/ha to chicory crops. CAUTION: Nufarm Thistrol Gold can cause damage to chicory and significant biomass reduction may occur. Crop effects may include: <ul style="list-style-type: none"> - early reddening of leaves - delayed necrosis of leaves - reduction of growth for an extended period DO NOT apply Nufarm Thistrol Gold to pastures containing chicory if weather forecasts are predicting a period of frosts or temperatures above 30°C The combination of environmental stress and herbicide application may result in unacceptable plant injury or death.

TABLE 2: Weeds controlled

Best control is achieved on small, actively growing plants. Exceeding the age/size restrictions may reduce control of those weeds to suppression at best. Always use the correct rate as indicated below to ensure control of weeds.

WEED (common name)	WEED (scientific name)	WEED GROWTH STAGE		CRITICAL COMMENTS
		Up to leaf no.	Up to weed size (cm)	
Amsinckia	<i>Amsinckia</i> spp.	10 leaf	10 cm diameter	Use 2 L/ha for control
Ball mustard	<i>Neslia paniculate</i>	6 leaf	5 cm diameter	Use 2 L/ha for control
Buchan weed	<i>Hirschfeldia incana</i>	8 leaf	10 cm diameter	Use 4 L/ha for control
Caltrop	<i>Tribulus terrestris</i>	4 leaf	-	Use 4 L/ha for control
Capeweed	<i>Arctotheca calendula</i>	4 leaf	10 cm	Use 2 L/ha for control
Charlock	<i>Sinapis arvensis</i>	8 leaf	10 cm diameter	Use 2 L/ha for control. Spray Charlock as soon as possible after the Autumn break. Larger plants and any affected by stress or grazing prior to treatment may re-grow and flower
Chickweed	<i>Stellaria media</i>	4 leaf	10 cm diameter	Use 4 L/ha for control
Common Cotula (Carrot weed)	<i>Cotula australis</i>	4 leaf	10 cm diameter	Use 2 L/ha for control
Cotula (Water Buttons)	<i>Cotula coronopifolia</i>	4 leaf	10 cm diameter	Use 2 L/ha for control
Deadnettle	<i>Lamium amplexicaule</i>	6 leaf	-	Use 4 L/ha for control
Dock (seedlings)	<i>Rumex</i> spp.	2 leaf	5 cm diameter	Use 2 L/ha for control
Doublegee	<i>Emex australis</i>	6 leaf	10 cm diameter	Use 4 L/ha for control
Dwarf marigold	<i>Schkuhria pinnata</i>	10 leaf	15 cm high	Use 2 L/ha for control
Dwarf nettle	<i>Urtica urens</i>	6 leaf	5 cm high	Use 4 L/ha for control
Fat hen	<i>Chenopodium album</i>	15 leaf	20 cm high	Use 2 L/ha for control
Fire weed	<i>Senecio madagascariensis</i>	-	10 cm high	Use 4 L/ha for suppression and to reduce seed set
Hedge mustard	<i>Sisymbrium officinale</i>	8 leaf	10 cm diameter	Use 2 L/ha for control

WEED (common name)	WEED (scientific name)	WEED GROWTH STAGE		CRITICAL COMMENTS
		Up to leaf no.	Up to weed size (cm)	
Indian hedge mustard	<i>Sisymbrium orientale</i>	8 leaf	10 cm diameter	Use 2 L/ha for control
Lupins	<i>Lupinus</i> spp.	10 leaf	10 cm high	Use 2 L/ha for control
Marshmallow	<i>Malva parviflora</i>	5-8 leaf	10 cm diameter	Use 4 L/ha for control
Musky Storksbill	<i>Erodium moschatum</i>	12 leaf	10 cm diameter	Use 4 L/ha for control
New Zealand spinach	<i>Tetragonia tetragonoides</i>	4 leaf	5 cm diameter	Use 4 L/ha for control
Oxtongue	<i>Helminthotheca echioides</i>	4 leaf	5 cm	Use 4 L/ha for control
Paterson's curse	<i>Echium plantagineum</i>	8 leaf	10 cm diameter	Use 4 L/ha for control
Peppergrass	<i>Lepidium africanum</i>	10 leaf	15 cm diameter	Use 4 L/ha for control
Pheasant's eye	<i>Adonis microcarpa</i>	8 leaf	10 cm high	Use 2 L/ha for control
Prickly Lettuce	<i>Lactuca serriola</i>	6 leaf	5 cm	Use 2 L/ha for control
Saffron thistle	<i>Carthamus lanatus</i>	5 leaf	5 cm	Use 2 L/ha for control
Sandrocket (Lincoln weed)	<i>Diploaxis tenuifolia</i>	8 leaf	10 cm diameter	Use 4 L/ha for control
Shepherd's purse	<i>Capsella bursa-pastoris</i>	8 leaf	10 cm diameter	Use 2 L/ha for control
Sorrel (seedling)	<i>Rumex acetosella</i>	3 leaf	5 cm diameter	Use 2 L/ha for control
Sow thistle	<i>Sonchus oleraceus</i>	6 leaf	10 cm diameter	Use 2 L/ha for control
Spear thistle	<i>Cirsium vulgare</i>	Rosette	12 cm diameter	Use 4 L/ha for control
Stagger weed	<i>Stachys arvensis</i>	6 leaf	-	Use 4 L/ha for control
Stemless thistle	<i>Onopordum acaulon</i>	3 leaf	3 cm diameter	Use 4 L/ha for control
Three-horned bedstraw	<i>Galium tricornutum</i>	6 whorls	10 cm high	Use 2 L/ha for control
Turnip Weed	<i>Rapistrum rugosum</i>	12 leaf	10 cm diameter	Use 2 L/ha for control
Volunteer canola	<i>Brassica napus</i>	8 leaf	10 cm diameter	Use 2 L/ha for control
Ward's weed	<i>Carrichtera annua</i>	8 leaf	10 cm diameter	Use 2 L/ha for control
White ball mustard	<i>Calepina irregularis</i>	8 leaf	10 cm diameter	Use 2 L/ha for control
Wild radish	<i>Raphanus raphanistrum</i>	6 leaf	5 cm diameter	Use 4 L/ha for control
Wild turnip	<i>Brassica tournefortii</i>	10 leaf	10 cm diameter	Use 2 L/ha for control
Wireweed	<i>Polygonum aviculare</i>	6 leaf	5 cm	Use 2 L/ha for control

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