Product Name: NAADCO Paraquat 250 Herbicide

APVMA Approval No: 94659/143126

RLP
APPROVED

Label Name:	NAADCO Paraquat 250 Herbicide

Signal Headings:	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP READ SAFETY DIRECTIONS BEFORE OPENING OR USING

Constituent Statements:	ACTIVE CONSTITUENT: 250 g/L PARAQUAT PRESENT AS PARAQUAT DICHLORIDE

Mode of Action:	GROUP 22 HERBICIDE

Statement of Claims:	For the control of a wide range of Grasses and Broadleaf Weeds as per Directions for Use.

Net Contents:	5 L - 1000 L

Restraints:	DO NOT add wetter unless spraying at high volume. Where NAADCO Paraquat 250 Herbicide is mixed with water at less than 400mL/100L of water, add 100mL Wetter 1000 per 100L of spray. DO NOT spray plants which are waterlogged, under stress of any kind or covered with soil or dust. DO NOT spray plants covered with heavy dew, but rain following spraying will not affect results. DO NOT sow or cultivate for 1 hour after spraying but operations should commence within 7 days. For ground application only – do not use through aircraft, misting machines or hand-held ultra low volume controlled droplet applications (CDA units). SPRAY DRIFT RESTRAINTS Specific definitions for terms used in this section of the label can be found at 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.

Directions for Use:	This section contains file attachment.

Other Limitations:	DO NOT USE THIS PRODUCT IN THE HOME GARDEN.

Withholding Periods:	DO NOT GRAZE OR CUT SPRAYED VEGETATION FOR STOCK FOOD FOR AT LEAST 1 DAY, OR GRAZE HORSES FOR 7 DAYS AFTER APPLICATION. REMOVE STOCK FROM TREATED AREAS 3 DAYS BEFORE SLAUGHTER. CHICKPEAS, FABA BEANS, FIELD PEAS, LENTILS, LUPINS – DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION. PLEASE NOTE EXTRA WETTER REQUIREMENTS FOR HIGH VOLUME SPRAYING.

Trade Advice:	

General Instructions:	This section contains file attachment.

Resistance Warning:	GROUP 22 HERBICIDE NAADCO Paraquat 250 Herbicide is a member of the bipyridyl group of herbicides. NAADCO Paraquat 250 Herbicidehas the inhibitor of photosynthesis at Photosystem I mode of action. For weed resistance management NAADCO Paraquat 250 Herbicideis a Group 22 herbicide. Some naturally occurring weed biotypes resistant to NAADCO Paraquat 250 Herbicide and other Group 22 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 NAADCO Paraquat 250 Herbicideor other Group 22 herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, NAADCO accepts no liability for any losses that may result from the failure of NAADCO Paraquat 250 Herbicideto control resistant weeds.

Precautions:	

Protections:	PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS DO NOT apply under weather conditions or from spraying equipment that may cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures. This formulation should not be applied on or near water that is used for irrigation purposes.

	PROTECTION OF LIVESTOCK Domestic pets and poultry – keep away from treated areas. This formulation should not be applied on or near water, which is used for livestock watering. PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT DO NOT contaminate streams, rivers or watercourses with the chemical or used container. This formulation should not be applied on or near water, which is used for human consumption, livestock watering or irrigation purposes, or water used for commercial or recreational fishing.

Storage and Disposal:	Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, feedstuffs, seed, and fertilisers. For 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 for appropriate disposal 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. For Refillable Containers DO NOT store for prolonged periods in direct sunlight. Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

Safety Directions:	GENERAL Very dangerous, particularly the concentrate. Product is poisonous if swallowed. Will irritate the nose, throat and skin. Attacks the eyes, protect the eyes while using. Avoid contact with the eyes, skin and clothing. When opening the container and preparing product for use wear elbow-length PVC gloves and face shield or goggles. If product on skin, immediately wash area with soap and water. If clothing becomes contaminated with product remove clothing immediately. If product in eyes, wash it out immediately with water. Avoid contact with spray mist. DO NOT inhale spray mist. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and face shield or goggles and contaminated clothing. SPRAY APPLICATION • Do not work in spray mist. • Do not continue to use if skin irritation or nose bleed occurs. This may be caused by exposure to spray mist as the result of incorrect use of equipment or adverse climatic conditions. Stop and review handling and spraying techniques before further spraying. If symptoms persist seek medical advice. • Where there is a risk of exposure to spray mist, wear waterproof footwear and waterproof protective clothing, impervious gauntlet length gloves (rubber or PVC), goggles and a face mask and respirator covering nose and mouth and capable of filtering spray droplets. A high efficiency type particulate respirator is recommended but in any event use a respirator that complies with the requirements of AS1716 (Standards Association of Australia). Further advice on safety equipment should be obtained from a safety equipment manufacturer. • Avoid contacting vegetation wet with spray but if necessary to do so wear waterproof footwear and waterproof protective clothing and gloves.

First Aid Instructions:	If poisoning occurs get to a doctor or hospital quickly. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

First Aid Warnings:	

DIRECTIONS FOR USE

Crop Use or Situation	Weeds Controlled	State	Rate/ha	Critical Comments
Aid to Cultivation to minimise cultivation and prepare a clean bed for sowing.	Annual grass and broadleaf weed control. Early autumn sowing.	Qld, NSW, Vic,SA, WA Tas, NT, ACT	1.2 to 1.6L	Where cultivation follows spraying, it may commence one hour after spraying but should be completed within 7 days. Where heavy weed growth is present at spraying abetter seedbed will result if cultivation is delayed 3-5 days. Use the higher rates for dense, more matureweed stands. Wild oats must have at least two leaves. Where "Reglone" is used the lower NAADCO Paraquat 250 Herbicide rate shouldbe sufficient to control dense, mature weeds. Pasture: Remains of old pasture should be reduced by continuous heavy grazing. Remove stock 3-5 days before spraying to allow to freshen up.
	Winter, spring and early summer sowing.		1.6 to 2.4L	
	Wild oats at 2-5 leaf stage in autumn / winter.	Qld, Vic, SA, Tas, NT, WA only	600 to 800 mL	
		NSW, ACT only	600 mL	
Rice	Annual grass and broadleaf weed control.	Qld, NSW, NT only	1.6L	Pre-sowing.
			800 mL	Post- sowing, pre-crop emergence.
Wild Oat control in Spring Fallows	Wild oats at 2 to 5 leaf stage.	Qld, NSW, NT, ACT only	1.2 to 2 L	Use higher rate for summer growth. Avoid spraying under hot, dry conditions. Best results will be obtained when spraying is carried out in the late evening.
Kikuyu / Paspalum Pasture	To suppress growthto oversow winter seed.	Qld, NSW, ACT only	1.6 or 2.4 L	Use the high rate for February spraying andthe low rate in March.
Selective Weed Control Autumn / earlyWinter annual and perennuial clover	Annual grass and some broadleaf weedcontrol except Paterson's Curse, Sorrel, Dock, Shepherd's Purse and some thistles. Control of some broadleaf weeds, including; Patterson's Curse, Sorrel, Dock, Shepherd's Purse and some thistles willnot be achieved. Alternative methods such as the spray-graze technique with 2,4-D or MCPA should be considered.	All States	600mL to 1.2L 1.2 to 1.6L	Use the higher rate for dense weed stands
Late winter/ early spring - Annual and perennial clovers - Cocksfoot - Perennial ryegrass - Phalaris - Demeter fescue only		Qld, NSW, Vic, SA, Tas, NT, ACT only	1.6 to 2.4L	Use the higher rate in winter/early spring when barley grass is present. **All applications:** Graze pastures continuously after the seasonal break to a height of 2-4 cm. Remove stock 2-3 days before spraying to allow weeds to freshen up. Do not apply untilclover has reached the 6 leaf stage. Do not spray clovers, which are affected by insect attack, disease or moisture stress. Donot use on clover pastures growing in water repellent sands or other situations subject tomoisture stress at or immediately following treatment. Poor recovery of the clover will result. Use the lower rate for Cocksfoot and Perennial Ryegrass and the higher rate for Phalaris and Demeter Fescue. The perennialgrasses must be at least 12 months old at spraying. **DO NOT APPLY TO MEDICS**
	Yorkshire Fog Grass		1.2 L	Apply in early spring to reduce Yorkshire Fog Grass component and increase the clover

Crop Use or Situation	Weeds Controlled	State	Rate/ha	Critical Comments
				and desirable grass component. Mixed pastures will be scorched initially but shouldshow good recovery and beneficial changesin composition following spring rainfall and growth. In lower rainfall areas application in mid to late winter may be almost as effective but allow better pasture recovery. If pasture hasbeen grazed allow for sufficient time for pasture and fog grass recovery before spraying. Apply in spray volumes of 100 to 250 L/ha, the latter for dense or tall ungrazed pastures.Add Wetter 1000 at 120ml per 100L.
Lucerne **Autumn/ early winter**	Annual grass and some broadleaf weeds.	Qld, Vic, SA, WA, Tas, NT only	1.2 to 1.6L	Use the higher rates for dense weed stands.Do not spray Lucerne stands under 12 months old. If mintweed is present use atrazine (900g/kg)at 600g/ha. **WARNING** - In certain areas, an uncommon species of barley grass (*H. glaucum* - common species of barley grass is *H. leporinum*) resistant to paraquat based products has become established. It may regrow after an initial scorch by NAADCO Paraquat 250 Herbicide. Where this problem is suspected use fluazifop-p-butyl for grass weed control. If NAADCO Paraquat 250 Herbicide has been applied use fluazifop-p-butyl at 1L/ha after regrowth but before heading.
		NSW only	1.2L	
Late winter/early Spring		Qld, Vic, SA, WA, Tas, NT only	1.6 to 2.4L	
		NSW, ACT only	1.2L	
Perennial Grass Seed Crops Cocksfoot, Perennial ryegrass, Phalaris and Demeter Fescue only	Annual grass and some broadleaf weeds.	All States	600mL to 1.2L	Use the low rate for Cocksfoot and perennial ryegrass and the higher rate for Phalaris and Demeter Fescue. Spray about 4 weeks after a full weed germination following the autumn break. The perennial grasses must be at least 12 months old at spraying.
Spray topping to reduce seedset Chickpeas Faba beans Field peas Lentils Lupins Vetch	Annual ryegrass	All States	400mL or 800mL	**As an aid in managing annual ryegrass resistance. For use on escapes from a previous herbicide application in the current crop.** Spray the crop when the ryegrass is at the optimum stage, that is when the last ryegrass seed heads at the bottom of the plant have emerged and the majority are at or just past flowering (with anthers present orglumes open) but before haying-off is evident - usually October to November. Use of the higher rate in these crops is usually more reliable and gives a greater reduction in seedset. Reduction in crop yield may occur especiallyif the crop is less advanced relative to the ryegrass - that is if crops have a majority of green immature pods. The higher rate may also increase any yield reduction. In practice crop losses in excess of 25% may occur.

Crop Use or Situation	Weeds Controlled	State	Rate/ha	Critical Comments
				Apply by ground boom only in 50-100L/ha. Spray with a calibrated boom spray raised togive double overlap at the level of the ryegrass seed heads. Pressures of 250 -350 kPa and use of 110015 or 02 nozzles or equivalent will aid coverage.
Spray topping to reduce seedset Pastures	Grasses generally (particularly annual ryegrass).	All States	400mL	Heavily graze paddocks during spring flushto encourage even head development. Remove stock 2-3 weeks before the anticipated maturity date of the target species. However, if this is not feasible through lack of stock it is preferable to allowthe pasture to mature ungrazed. Delay spraying until the last seed-heads at the bottom of the plant have emerged and initialsigns of haying-off appear. Spray with a calibrated boom spray raised to give double overlap at the level of the seed heads.
	Barley grass			Manage paddocks as above. Spray after head emergence but when all seed heads are green and there is no sign of haying-off.Inspect paddocks before returning stock. Provided spraying was carried out before hardening seeds are present harrow to knock seed from the heads. Do not introducelambs into paddock until safe from risk of seed injury. If seasonal conditions favour regeneration, stock should be returned to selectively grazenew shoots. Spray with a calibrated boom spray raised to give double overlap at thelevel of the seed heads.
	Saffron thistle	NSW, SA, ACT only		Spray after the plant begins to run to headuntil flowering.
Prevention of annual ryegrass toxicity	Spray top - graze to destroy seed heads.	WA only	400mL	Grazing management as for spray topping above. Remove stock 3-4 weeks before anticipated maturity date. Spray must be applied within 10 days after emergence ofthe first ryegrass seed heads. To ensure adequate control of toxin development, **heavy continuous grazing is essential from 1 day after spraying** until the pasture has completely hayed off. The required stocking rate will vary but mustbe sufficient to keep all regrowth after spraying completely eaten off to prevent further growth producing new seed heads, which could become toxic.
Hay Freezing	Maximum retention of protein in standing dry feed.	All States	800mL	Graze paddocks as for spray topping above. Remove 3-4 weeks before the anticipated maturity date. Apply prior to commencementof haying-off regardless of the grass species involved. Spray with a calibrated boom spray raised togive double overlap at the level of the seed heads.

Crop Use or Situation	Weeds Controlled	State	Rate/ha	Critical Comments
General Weed control Bananas	Annual weed control	Qld, NSW, NT only	1.6 to 3.2 L sprayed ha. 160 to 320 ml per 100L Misters 8mL/L	Spray as necessary for control of annual weeds. Avoid contacting crop foliage. Apply soon after emergence and before weeds reach 15cm in height. Use spraying pressure less than 240kPa. Avoid chemical contact with roots and peepers near pseudo stem. Repeat as required.
Hops	Annual grasses	Vic, Tas, only	1.2 to 1.6L plus 1.1 kg/ha simazine (900g/kg) and/or 750mL to 1.4L/ha diquat 200g/L[1]	Apply as a directed inter-row spray prior to crop emergence from winter dormancy, using a minimum of 250 L/ha spray volume to ensure good and even coverage of weeds.
Orchards and Vineyards	Annual weed control	Qld, Vic, SA, WA, Tas, NT only	1.6 to 3.2L per sprayed ha [1, 2]	Spray as necessary for control of annual weeds. Avoid contacting crop foliage. NAADCO Paraquat 250 Herbicide will not harm trees or vines with mature brown bark if this alone is sprayed. Use the higher rate for dense weed growth.
		NSW only	1.7L per sprayed ha[1,2]	If fat hen *Chenopodium album* or *Portulaca* spp. are present and NAADCO Paraquat 250 Herbicide rate is less than the ratio 800mL/100L add 120mL 1000g/L non-ionic wetter per 100L of spray mix.
Peanuts Post-emergence (in-crop)	*Datura* spp. (2-4 leaf)	Qld, NT only	400mL	Spray peanuts up to 7-8 leaf stage but before majority of plants flowering. Foliage will be scorched following application but plants recover rapidly. Apply in 200-250 L/hafor thorough coverage of weed foliage. A dense canopy of weeds may reduce weed control due to shielding. Add 60mL 1000g/L non-ionic wetter per 100L of spray mix.
	Annual ground cherry (2-3 leaf) Apple-of-Peru (2-4 leaf) Milkweed (2-3 leaf)		600mL	
	Stagger weed (2-3 leaf) Blue heliotrope (2-3 leaf) Wandering Jew (2-3 leaf) Anoda weed (2-4 leaf)		800mL	
	Bellvine (2-3 leaf) Common morning glory (2 leaf)		1L	
Potatoes	General weed control (in-crop)	All States	1.2 to 1.6L[1]	Spray at early crop emergence (no later than 25% emergence of potato shoots). Use the higher rate for dense weed growth.
	Pre-harvest weed control		2.8L [1]	Spray about one week before digging andafter tops have died down.
Row Crops, Vegetables and Market Gardens	Pre-planting and pre-crop emergence	All States	1.2 to 1.6L or 200mL/100L	To control weeds in seedbeds. Treat no less than three days before sowing or before crop emergence. Use the lower rate for early autumn applications.
	Post-emergence inter-row weed control		1.2 to 1.6L or 200mL/ 100L[1,2]	Apply after crop seedlings have emerged or when transplanted crops are established. Direct the spray so that it does not touch the crop. Use shielded nozzles.

Crop Use or Situation	Weeds Controlled	State	Rate/ha	Critical Comments
	Seedling weeds			Seedling weeds - use the lower rate for early autumn applications.
	Older weeds		2.4L or 400mL/100L[1]	More mature stages of weed growth.
Sugar Cane (Plant and ratoon)	Grass and some broadleaf weeds	Qld, NSW, NT only	1.2 to 1.6L per sprayed ha[2]	Apply as a broadcast spray over-the-top of plant cane up to the 3-4 leaf stage. Cane foliage will be scorched but new leaves will appear in 7-10 days. Between the 3 to 4 leaf stage and the formation of the true stem use a directed, interspace spray with droppers and/or shields or leaf deflectors to avoid excessive spray drift onto cane foliage while spraying up to the cane bases. Use coarse nozzles such as flood jets (reflex nozzles) and pressure of 100-200 kPa. After the formationof the true stem, which is resistant to NAADCO Paraquat 250 Herbicide, droppers can beraised to overlap the spray pattern to give weed control in the stool. Use the higher ratefor dense more mature weeds. NAADCO Paraquat 250 Herbicide can be mixed with NAADCO Atrazine 900WG to give residual weed control when used as a blanket or directed spray (refer to atrazine label for specific rates).
Non-Agricultural situations, around sheds, roadways, paths	Annual weed control	All States	1.6 to 4 L/ha or 200mL/100L[1, 2]	Spray to thoroughly wet weed growth. NAADCO Paraquat 250 Herbicide can be combinedwith soil residual herbicides Simazine 900WG or NAADCO Atrazine 900WG to give rapid knockdown and prolonged weed control. Use the higher rate for dense weed growth.
	Columbus grass	NSW only	**Spot spraying** 160mL/ 100L plus 1L flupropanate (745g/L) **Boomspray** 2.3 to 4.5L/ha plus 12 to 22L flupropanate (745g/L)	
Firebreaks	Knock down weed growth to eliminate fire hazard or assist firebreak burn	All States	1.6 to 4L	Apply mid-winter to early summer. Use the higher rate for dense weed growth. After desiccation is complete the sprayed area may be burnt (normally 7–10 days afterspraying). NAADCO Paraquat 250 Herbicide can be combinedwith soil residual herbicides NAADCO Atrazine 900WG or Simazine 900WG to give rapid knockdown and prolonged weed control.

1 Capeweed or Erodium spp. present: Add diquat (200g/L) at 750mL to 1.5L/ha (125mL to 250 mL/100L for high volume spraying). Use higher rate for plants more than 10 cm diameter.

2 If NAADCO Paraquat 250 Herbicide Herbicide rate is less than the ratio 400mL/100L add 60mL 1000g/Lnon-ionic wetter per 100L of spray mix.

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

General Instructions
This product kills annual grasses and most annual broadleaf weeds (excluding capeweed) in specified situations and should not be used for any other purpose. Quickly kills green plant tissue on contact. Is immediately inactivated in the soil or heavy dew. The principle of selective weed control with this product is that annual weeds are killed but perennial plants and clovers recover after an initial scorch.

The control of annual weeds by spraying with this product will allow the desirable perennial species to thicken up at the expense of the weeds. Moisture and fertility should not be limiting at spraying and the proportion of desirable species must be great enough for them to fill in the areas previously occupied by weeds.

Long-term weed control can be obtained following the quick knockdown given by this product if it is combined with soil residual chemicals.

Read all safety directions before commencing work
1. Do not use hand-held ultra low volume controlled droplet applicators (CDA units), boomless jets or misting machines (except in banana plantations).
2. Mixing
Add the required quantity of product to water in the spray tank and agitate to give even mixing. Agitate again if left standing.
3. Wetting agent
This product contains a wetting agent and additional wetter is not required unless high volume spraying results in excessive dilution of wetter content. This will occur when product rates fall below 400mL per 100L of spray. Under such circumstances wetter should be added at the rate of 100mL of 1000g/L non-ionic wetter per 100L of spray mix.

Where Fat Hen or Portulaca are present in orchard or vineyard situations, extra wetter should be used when this product ratio is less than 800mL per 100L. Add wetter at double the above recommendations. Do not use alkaline or anionic wetting agents.
4. Clean water
Mix this product with clean water only. Water should be clean and free from clay, silt and algae. Providing it meets this requirement, saline water, water collected from roofs, bore water, dam water and water from creeks may be used.

5. Application
1) Cereals and Broadacre Spraying
Use only through a properly calibrated boom spray that should be fitted with flat fan jets and adjusted to a height to give at least double overlap of the spray at the top of the weeds being sprayed.

Spraying pressures should be in the range of 200-300kPa. Speed of travel should be in the range of 6 – 15km/hr. It is essential that a good marking system be used. If a disc marker is used, it must be mounted so as to turn the soil back on to the area sprayed. It is essential to obtain good leaf coverage with the spray and volumes of dilute spray must be adjusted according to density of weed growth. 100L/ha may be used for seedlings or well grazed weeds up to 2 cm high.

For plant height 2-5cm use 150L/ha and up to 6-10cm use 200L/ha. Spray volumes may be as low as 50L/ha (30L/ha in WA) for weed growth below 5cm high, or for spray topping and hay freezing. Equipment must be appropriate to this volume, properly calibrated and fitted with spraying tips designed to give droplets of a MEDIUM spray droplet size category.

2) High Volume Application
Higher volumes will generally be required to give good coverage of weed growth in situations other than those specified under cereals and other broadacre crops.

3) Wash spray equipment with clean water immediately after use. This product is highly corrosive to

metals, particularly galvanised iron and aluminium and should not be left for long periods in tanks or equipment made of these materials.

6. Compatibility

This product combines satisfactorily with the soil active herbicides NAADCO Atrazine 900WG and Simazine 900WG where prolonged weed control is required as well as a quick knockdown. This product is compatible with diquat, dicamba, dicamba + MCPA, MCPA Amine (no more than 1L per 800mL NAADCO Paraquat 250 Herbicide), chlorsulfuron, tri-allate and trifluralin.

7. Spraying conditions

Avoid spraying plants under stress from waterlogging, frost, drought etc. or covered with dust and soil. Results will be better if application is made in dull weather or at the end of the day. Light rain following spraying will not affect results. Avoid drift into neighbouring crops.