

# DANGEROUS POISON

KEEP OUT OF REACH OF CHILDREN

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

CAN KILL IF SWALLOWED

DO NOT PUT IN DRINK BOTTLES

KEEP LOCKED UP

Rygel

## Pre-Seed 250 Herbicide

**ACTIVE CONSTITUENTS:** 135g/L PARAQUAT present as PARAQUAT DICHLORIDE  
115g/L DIQUAT present as DIQUAT DIBROMIDE

For the control of broadleaf weeds in fallow before direct drilling or sowing of cereals and pastures; and in cereal crops, pastures, sugarcane, peanuts, and non-agricultural areas.

GROUP	L	HERBICIDE
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APVMA Approval No: 58811/0605

Pack Sizes: 5L, 20L, 110L, 200L, 1000L

### GENERAL INSTRUCTIONS

Rygel Pre-Seed 250 quickly kills a wide range of annual grasses, broadleaf weeds and some perennial grasses when sprayed directly onto the leaves. The active ingredients are rapidly and tightly absorbed by clay and silt particles in the soil and do not leave any effective soil residues. Thus crops sown immediately after spraying are not affected by the chemicals, nor are weed seeds, which germinate after spraying.

Where insect pests are anticipated use recommended insecticide treatment. Regular checks should be made before and after sowing. Suitable residual herbicides can be tank mixed with Rygel Pre-Seed 250 to provide extended in-crop weed control in fallows and subsequent crops. Read label recommendations of the respective residual herbicides prior to use, and observe precautions against use of residual herbicides before planting susceptible crops. See compatibility statement on this label for compatibility of Rygel Pre-Seed 250 with other herbicides.

### RESISTANT WEEDS WARNING

Rygel Pre-Seed 250 Herbicide is a member of the bipyridyl group of herbicides. Rygel Pre-Seed 250 has the inhibitor of photosynthesis at Photosystem I mode of action. For weed resistance management Rygel Pre-Seed 250 is a Group L herbicide. Some naturally occurring weed biotypes resistant to Rygel Pre-Seed 250 and other Group L 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 Pre-Seed 250 or other Group L herbicides.

Since the occurrence of resistant weeds is difficult to detect prior to use, Rygel Australia Pty Ltd accepts no liability for any losses that may result from the failure of Rygel Pre-Seed 250 to control resistant weeds.

### Mixing

The recommended rate of Rygel Pre-Seed 250 should be added to water in the spray tank and agitated to give even mixing. Agitate again if left standing.

### Water Volume

It is essential to obtain good leaf coverage with spray and the following volumes are recommended:

Winter rainfall areas	Boomspray	Summer rainfall areas a: weed stage and density
Plant height up to 2cm	50 to 100L/ha	Small plants (2 to 5 leaf) and well separated.
Plant height up to 2 to 5cm	100 to 150L/ha	5 leaf to early tiller/rosette: 30-50% ground cover.
Plant height up to 6 to 10cm	150 to 200L/ha	Advanced growth, dense and/or tall weed stands.
Above 10cm	Use split application to remove excess growth Use 150L/ha	Very dense and tall weed growth.

**Note:**

- (1) If the volume is increased above 100L/ha additional wetter should be added at the rate of 200mL Rygel Cropwett 600 or 120mL of Rygel Cropwett 1000 per 100L water.
- (2) 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.

**Application Boomspray**

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 240-280 kPa. Speed of travel should be in the range of 6 to 10 km/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.

**Direct Drilling - Procedure 1.**

Use of Rygel Pre-Seed 250 Herbicide in crop establishment with no working before sowing.

Step	Critical Comments
1. Burn	If possible crop stubble or pasture trash should be burnt early to avoid problems at sowing. Can also promote weed seed germination.
2. Shallow cultivation – optional	Should be carried out on opening rains to a depth of no more than 2 cm. This will encourage early even germination of weeds particularly annual grasses.
3. Heavy graze paddocks continuously from germination	This prepares the paddock for spraying by keeping the pasture short and open and at the same time restricts the development of the weed roots, which will assist seedbed formation.
4. Remove stock 2 to 3 days before spraying	Allow the weeds to freshen up – important for maximum uptake of Rygel Pre-Seed 250. Spraying can, however, take place immediately after stock removal provided there is sufficient leaf cover and the pasture is not dusty.
5. Spray with a boom sprayer	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under 'Directions for Use'.
6. Sow 3 to 5 days after spraying	A rigid tyne spring release combine is preferred to ensure adequate penetration. Points should not be worn. The combine must be level and set to work 3 to 5 cm and sow seed at recommended depth. Use standard seed and

	fertiliser rates. When harrowing is considered necessary use trailing harrows. Sowing can commence one hour after spraying and should be completed within 7 days. Where heavy weed growth is present a better seedbed will result if sowing is delayed for 3 to 5 days.
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**Direct Drilling (Sod Seeding) in Rice - Procedure 2.**

Step	Critical Comments
1. Graze pasture heavily	Allow pasture to green up before spraying, generally 1 week. Watering may be required. Where rice follows a cereal crop, the stubbles should be burnt well in advance of the anticipated date of sowing to allow weeds to germinate prior to spraying.
2. Spray the paddock before or after direct drilling	Use 1.6 to 3.2L Rygel Pre-Seed 250 per hectare. Use 1.7 to 2.2 L/ha for weeds, particularly Barnyard Grass, on rice stubbles after burning. Use 2.2 L/ha for well-grazed pastures plus 500mL dicamba (200g/L) per hectare as a tank mix for clover dominant pastures. Up to 3.2 L/ha may be required where the pasture has not been properly managed prior to spraying. Use approximately 100L clean water/ha per cm growth.
3. Direct Drill Rice	Drill at 2 to 3 cm depth within a few hours of spraying. Do not delay for more than a few days after spraying. Spraying may be carried out after drilling.

**Crop Establishment with Cultivation AFTER Spraying - Procedure 3.**

Step	Critical Comments
1. Graze paddocks continuously from germination	This prepares the paddock for spraying by keeping the pasture short and open and at the same time restricts the development of the weed roots, which will assist seedbed formation.
2. Remove stock 2 to 3 days before spraying	Allows the weeds to freshen up – important for maximum uptake of Rygel Pre-Seed 250. Spraying can take place immediately after stock removal provided there is sufficient leaf cover and pasture is not dusty.
3. Spray with a boom spray	Accurate application and full spray cover are essential to give weed control. Note

	limitations as outlined under 'Directions for Use'.
4. Cultivate	Between 1 hour and 7 days after spraying. When dense weed growth is present implement penetration and resulting seedbed may be improved if cultivation commences 3 to 5 days after spraying. It is not necessary to cultivate deeper than sowing depth. Use scarifier or combine with heavy harrows.
5. Sow	Sow at the recommended seed and fertiliser rates and depth.

#### Crop Establishment with a Cultivation BEFORE Spraying - Procedure 4.

Step	Critical Comments
1. Graze	Graze pasture or stubble to keep growth of weeds down to a minimum following the autumn break.
2. Cultivate 4 to 6 weeks prior to the anticipated sowing date	Cultivate after autumn rains when conditions are suitable to produce a seedbed and before heavy weed growth develops. A scarifier and heavy harrows should be used with the aim of killing existing weed growth and leaving the seedbed in a level condition. It is not necessary to cultivate deeper than the sowing depth.
3. Wait	Wait 4 to 6 weeks to allow a full germination of weeds. Graze if necessary.
4. Remove stock 2 to 3 days before spraying	Allow the weeds to freshen up – important for maximum uptake of Rygel Pre-Seed 250.
5. Spray with a boom sprayer	Accurate application and full spray cover are essential to give weed control. Note limitations as outlined under 'Directions for Use'.
6. Sow	Between one hour and 7 days after spraying, sow crop in the normal manner. Sow at recommended seed and fertiliser rates and depth. <b>Note:</b> Where heavy weed growth is present at spraying, a better seedbed will result if sowing is delayed for 3 to 5 days.

**Note: for on the farm advice and assistance, contact your dealer.**

#### CONTROL OF WEEDS AFTER CROP HARVEST AND IN CULTIVATED AND NON-CULTIVATED FALLOWS – NORTHERN NEW SOUTH WALES AND QUEENSLAND ONLY.

#### Use of Rygel Pre-Seed 250 for Weed Control After Cereal Harvest - Procedure 5.

New Zealand Spinach, Bladder Ketmia and Milk Thistle are often present after cereal harvest. They can be controlled by the application of 1.6 to 2.4 litres/hectare of Rygel Pre-Seed 250 in at least 100 litres of clean water/ha. Use a properly calibrated boom sprayer. Ensure that the boom is set for double overlap at the top of the weed canopy. The weed species must be free from dust and actively growing. They should not be shielded from the spray by stubble or trash. The use of a straw spreader at harvest is recommended.

#### Use of Rygel Pre-Seed 250 for the Control of Weeds During the Fallow - Procedure 6.

Weeds must be controlled during the fallow to conserve moisture. While cultivation can eliminate weeds it also exposes the soil to moisture loss. In addition, repeated cultivations destroy soil structure, reduce organic matter and stubble cover. This leads to the formation of hard pans, soil crusts and increases the risk of erosion. Under moist soil conditions weeds are frequently transplanted and not killed, weed growth holds the soil in clods. Rygel Pre-Seed 250 herbicide provides an economical and reliable alternative for fallow weed control.  
For use in fallows to be planted to sugar cane and for weed control prior to planting sugar cane, refer to the specific section of this label.

##### a) Seedling weeds

Seedling weeds should be sprayed with 1.0 to 3.2 /ha of Rygel Pre-Seed 250 in 50 to 100 litres of clean water (see Directions for Use table). Some difficult to control weeds may require a second application 7 to 21 days later, or control may be assisted by a following cultivation.

##### b) Advanced Weed Growth

While some advanced weeds will be controlled by a single application of Rygel Pre-Seed 250 many species will require a follow-up cultivation to complete the kill. Rygel Pre-Seed 250 rapidly desiccates plant material and causes weed roots to loosen their grip on the soil. The results are improved incorporation of plant material, a reduced number of large clods and a more reliable weed kill even in moist soil. Use the recommended rates of Rygel Pre-Seed 250 in 100 to 200 litres of clean water.

##### Control of Transplanted Weeds

Weeds transplanted by unsuccessful cultivation present an extremely difficult problem. If there is a risk that cultivation will result in weeds being transplanted (particularly under moist soil conditions) it is recommended that the weeds be sprayed with Rygel Pre-Seed 250 prior to cultivation (see previous section). Weeds partly covered by soil and clods provide poor conditions for successful chemical weed control. The best results will be achieved by allowing the weeds to make some regrowth to provide adequate chemical targets.

Apply the highest rate of Rygel Pre-Seed 250 preferably spraying in the late afternoon or early evening.

### **Use of Rygel Pre-Seed 250 for the Control of Seedling Weeds Immediately Before Sowing - Procedure 7.**

#### **a) Sowing with full disturbance (full combine)**

The cultivation action of the combine aids in weed kill. Use 0.8 to 2.4 litres of Rygel Pre-Seed 250 depending upon weed species (see Directions for Use table). Sowing should commence within 7 days of spraying.

#### **b) Sowing with minimum disturbance (row crop, no-till planters)**

A higher rate of Rygel Pre-Seed 250 is recommended due to the absence of cultivation. Use 1.2 to 3.2 litres per hectare in Southern Australia; 1.0 to 3.2 litres per hectare in Northern Australia (Qld, Nthn NSW & NT only).

#### **Compatibility**

Rygel Pre-Seed 250 is compatible with any one of the following herbicides:

metsulfuron-methyl, atrazine, dicamba, 2,4-D, diuron, metolachlor, chlorsulfuron, oxyfluorfen, paraquat, triasulfuron, clopyralid, MCPA, diquat, simazine, imazethapyr, pendimethalin, oryzalin, trifluralin.

Tank mixes with 2,4-D and MCPA formulations should not be more concentrated than 2 parts Rygel Pre-Seed 250 to 1 part 2,4-D or MCPA.

Refer to the manufacturers label for specific details on compatibility and weed control. Mixtures with more than one product may not be compatible and should be checked in a jar test first. Physical compatibility does not guarantee biological compatibility.

Rygel Pre-Seed 250 is compatible with any one of the following insecticides:

alpha-cypermethrin, phosmet, lambda-cyhalothrin, omethoate, bifenthrin.

Rygel Pre-Seed 250 is compatible with Rygel Cropwett 1000 surfactant.

Rygel Pre-Seed 250 is not compatible with copper, zinc or manganese sulphates.

#### **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.

#### **PROTECTION OF LIVESTOCK**

Domestic pets and poultry – keep away from treated areas. Low hazard to bees. No special precautions are required. 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 waterways 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 dry, cool, well-ventilated area locked room or a place away from children, animals, food, feedstuffs, seed and fertilisers. The method of disposal of the container depends on the container type. Read the Storage and Disposal instructions on the label that is attached to the container.

#### **SAFETY DIRECTIONS**

Very dangerous, particularly the concentrate. Product is poisonous if absorbed by skin contact, inhaled or swallowed. Will irritate eyes, nose, throat and skin. Attacks the eyes. Protect eyes while using. Avoid contact with eyes, skin and clothing. DO NOT inhale spray mist. When opening the container and preparing product for use and using the prepared spray, wear:

- cotton overalls buttoned to the neck and wrist,
- a washable hat,
- elbow-length PVC gloves,
- face shield or goggles,
- half face piece respirator or disposable respirator.

If clothing becomes contaminated with product, or wet with spray, remove contaminated clothing immediately. If product on skin, immediately wash area with soap and water. 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, respirator and if rubber wash with detergent and warm water, 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.
- When 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**

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.

Note for Physicians:

For additional advice on the treatment of paraquat poisoning please consult the booklet "Paraquat Poisoning: A Practical Guide to Diagnosis, First Aid and Hospital Treatment" (available from Rygel Australia Pty Ltd).

**MATERIAL SAFETY DATA SHEET**

Additional information is listed in the Material Safety Data Sheet that can be obtained from the supplier.

**CONDITIONS OF SALE**

The use of Rygel Pre-Seed 250 Herbicide being beyond the control of the manufacturer, no warranty expressed or implied is given by Rygel Australia Pty Ltd regarding its suitability, fitness or efficiency for any purpose for which it is used by the buyer, whether in accordance with the directions or not and Rygel Australia Pty Ltd accepts with no

responsibility for any consequences whatsoever resulting from the use of this product.

**In an Emergency Dial 000 Police or Fire Brigade**

<b>UN No. 3016</b>	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, N.O.S. (contains paraquat and diquat)
PG III HAZCHEM 2 X	In a Transport Emergency DIAL 000 Police or Fire Brigade

Toxic
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