

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

Saturn[®] EC

RICE HERBICIDE

Active Constituent: 800 g/L THIOBENCARB

GROUP J HERBICIDE

For the control of barnyard grass and certain annual sedges including dirty Dora in rice as per the DIRECTIONS FOR USE table

Resistant Weeds Warning

Saturn EC Rice Herbicide is a member of the thiocarbamate group of herbicides. Saturn has the inhibition of fat synthesis (Not ACCase inhibitors) mode of action. For weed resistance management, Saturn is a Group J herbicide. Some naturally occurring weed biotypes resistant to Saturn, and other Group J 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 Saturn or other Group J herbicides. Since occurrence of resistant weeds is difficult to detect prior to use, Bayer CropScience Pty Ltd accepts no liability for any losses that may result from the failure of Saturn to control resistant weeds.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS

DO NOT use water drained from treated fields to irrigate other crops. Avoid spray drift or accidental application to other crops, especially those susceptible to Saturn such as sorghum, ryegrass, oats, cucurbits and onions. DO NOT plant susceptible crops on fields treated with Saturn during the previous 6 months.

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.

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.
20, 200 L

Triple or preferably pressure 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 container 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. Do not re-use container for any other purpose.

100, 110 L

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty container by pumping through dry-break connection system. Do not attempt to breach the valve system or the filling point, or contaminate the container with water or other products.

Ensure that the coupler, pump, meter and hoses are disconnected, triple rinsed and drained after each use. When empty, or contents no longer required, return the container to the point of purchase. This container remains the property of Bayer CropScience Pty Ltd.

500, 1000 L

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty product as required into application equipment. Do not attempt to breach the valve system or filling point, or contaminate the container with water or other products. Ensure that equipment used in transfer of the product is disconnected, triple rinsed and drained after each use. When the container is empty, close all caps and valves and return the container to the point of purchase.

SAFETY DIRECTIONS

Product is harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. Do NOT inhale spray mist. When opening the container and preparing the spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and face shield. If clothing becomes contaminated with product or wet with spray, remove clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. 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, face shield and contaminated clothing.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre (telephone 13 11 26). If swallowed, do NOT induce vomiting. Give a glass of water.

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet, which can be obtained from www.bayercropscience.com.au.

EXCLUSION OF LIABILITY

This product must be used strictly as directed, and in accordance with all instructions appearing on the label and in other reference material. So far as it is lawfully able to do so, Bayer CropScience Pty Ltd accepts no liability or responsibility for loss or damage arising from failure to follow such directions and instructions.

Saturn® is a Registered Trademark of Kumiai Chemical Industry Co. Ltd, Japan.
Ronacil® is a Registered Trademark of Bayer.

FOR 24 HOUR SPECIALIST ADVICE
IN EMERGENCY ONLY
PHONE 1800 033 111

APVMA Approval No.: 41729/53524

AERIAL SOWN RICE - DRY SOIL APPLICATION

DIRECTIONS FOR USE (For use in NSW and Vic only)

Restraints

DO NOT use on bays that have not been rolled to break down soil clods prior to application.

DO NOT use on rice varieties other than Amaroo.

DO NOT use where muddy water can be expected.

CROP	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
Rice (aerial sown into flooded bay - Amaroo variety only)	Barnyard grass (<i>Echinochloa</i> spp.), dirty Dora (<i>Cyperus difformis</i>)	3.75 to 5.0 L	Apply to weed and clod-free dry soil following rolling. Use the higher rates in areas of anticipated higher weed infestation. Flood bays as soon as possible after application and no later than 5 days after application or efficacy will be reduced.

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

WITHHOLDING PERIOD NOT REQUIRED WHEN USED AS DIRECTED.

GENERAL INSTRUCTIONS

Saturn should only be used pre-flooding where bays have been adequately prepared and rolled to break down soil clods. Sow **pre-germinated** rice seed (not dry rice seed) into flooded bays, maintaining water coverage on high sides of bays.

Mixing

Thoroughly mix the required amount of Saturn with a similar quantity of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

Application

Apply via tapered flat fan nozzles in a minimum 50 L/ha. Overlapping may result in crop injury and should be avoided.

Water Management

For best results, supply water separately to each bay from the supply channel or align irrigation stops on one side of paddock and ensure toe furrows are clear.

After completion of initial flooding following application, complete water coverage of bays must be maintained to ensure satisfactory weed control throughout the season. If water levels drop and expose the soil surface, reduced weed control may occur.

DO NOT drain rice water into regional drains within the withholding period after Saturn application as defined by the NSW Environment Protection Authority (EPA) or the local irrigation authority.

AERIAL SOWN RICE - FLOODED BAY - SINGLE APPLICATION

DIRECTIONS FOR USE (For use in NSW and Vic only)

Restraint

DO NOT use Saturn where muddy water can be expected.

CROP	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
Rice (aerial sown into flooded bay)	Barnyard grass (<i>Echinochloa</i> spp.), dirty Dora (<i>Cyperus difformis</i>)	3.75 L	Apply Saturn when barnyard grass is at the 0 to 3 leaf stage and dirty Dora is at the 0 to 2 leaf stage. Apply by air or SCWIIRT to flooded bays only, once the rice has developed to the secondary (fibrous) root stage. Do NOT apply to floating rice or rice that has not developed to the fibrous root (secondary root) stage. (See comments also under Application and Water Management).

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WITHHOLDING PERIOD NOT REQUIRED WHEN USED AS DIRECTED.

GENERAL INSTRUCTIONS

Flood area to be sown quickly and sow within 7 days of commencement of filling of flat bays. Sow **pre-germinated** rice seed (not dry rice seed) in the normal way maintaining full water coverage on high sides of bay. Apply Saturn only when the fibrous (secondary) roots of the rice seedling are developing and are attached to the soil surface. At this stage the rice seedling is normally in the 1 to 2 leaf stage. This stage normally occurs 7 to 20 days after sowing depending upon temperature conditions (See diagram below). Do NOT apply to rice prior to the development of fibrous roots or to floating rice as crop damage may occur.

Water movement should cease 6 to 12 hours before application and water should be held for a minimum of 3 days. Refer to **Water Management** below.

Application

Aerial Application

Apply Saturn to flooded bays.

Use flat fan nozzles or AU 5000 rotary atomisers delivering a minimum of 20 to 40 L spray volume/ha with a droplet size of 200 to 350 µm to ensure thorough, even distribution of Saturn.

Alternatively, apply through solid stream nozzles i.e. a Bickley boom with the following setup;

- Two nozzles mounted on droppers, one either side with droppers positioned just outside the first boom hanger (28 – 35% of wingspan).
- Dropper length approximately 40-60 cm or lower below the trailing edge of the wing.
- Solid stream nozzles with bore sufficient to apply desired volume at a pressure of 240 to 310 kPa (35 to 45 psi).
- Nozzles orientated rearwards and parallel to the airstream.
- Check valves (Spraying Systems diaphragm type 12328, ¾ inch) located behind nozzle to eliminate “trailing” after shut off.

For Bickley boom application spray at a maximum wheel height of 2 m above the water surface and at a maximum swath width of 25 m. Ensure a minimum water depth of 10 cm on the high side of bays prior to treatment. A minimum application volume of 20 L/ha is recommended.

Before applying Saturn to contoured bays evaluate the layout of the bays to be treated and select the optimum flight pattern to ensure all bays receive the recommended rate of Saturn.

Thoroughly mix the required amount of Saturn with a similar quantity of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

Do NOT over spray headlands.

SCWIIRT Application

Soluble Chemical Water Injection In Rice Technique (SCWIIRT) involves metering herbicide concentrates directly into flooded fields and relying on aqueous dispersion of the chemical across the field. Four-wheel drive vehicles or helicopters are adapted to meter chemical diluted in a small quantity of water directly into flooded bays. In this use situation Saturn is best applied in a SCWIIRT system with a total application volume of 6.5 L/ha. Thoroughly mix the required amount of Saturn with the majority of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

Water Management

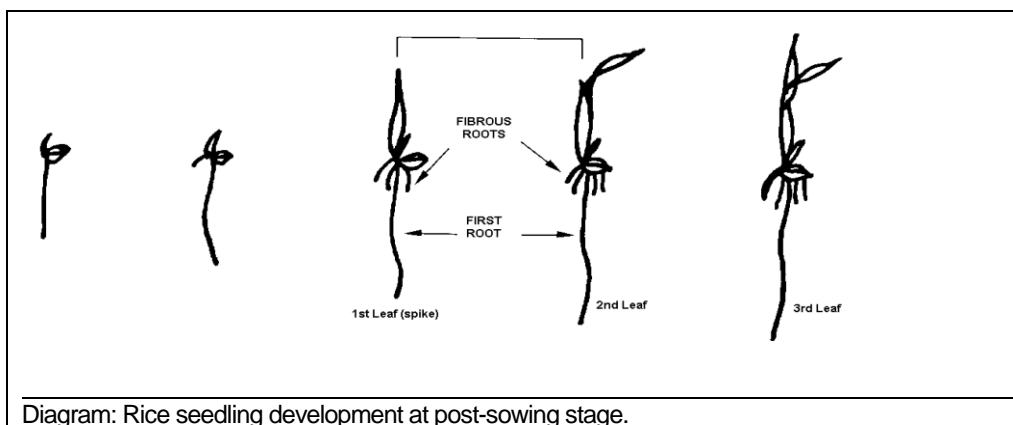
After a minimum of 3 days following application, bays may be topped up as necessary for normal water management.

Ensure full coverage of soil with enough water depth to enable distribution of product throughout the bay. Occasionally crop effects may be observed after the 3 day lock up period. Reducing the water level will assist crop recovery. Contact Bayer CropScience for further advice.

DO NOT drain rice water into regional drains within the withholding period after Saturn application as defined by the NSW Environment Protection Authority (EPA) or the local irrigation authority.

Compatibility

Saturn is compatible for use with Londax® in a resistance management strategy. Consult the Department of Agriculture Information Bulletin for further information on this strategy.



AERIAL SOWN RICE - FLOODED BAY - SPLIT APPLICATION

DIRECTIONS FOR USE (For use in NSW and Vic only)

Restrictions

DO NOT use Saturn where muddy water can be expected.

DO NOT use Saturn if contours of bays exceed 10 cm (4 inches).

CROP	WEEDS CONTROLLED	RATE/ha	CRITICAL COMMENTS
Rice (aerial sown into flooded bay) - excluding long grain varieties and Paragon variety	Barnyard grass (<i>Echinochloa</i> spp.), dirty Dora (<i>Cyperus difformis</i>)	1.0 to 1.5 L	1st Application - Pre-sowing Apply by air or SCWIIRT to newly flooded bays prior to weed germination. Use the low rate only under situations of low anticipated weed pressure. The higher rate will provide more reliable control where some weeds may have commenced germination or where weed levels are expected to be high. (Note: Application to bays in which weed germination has occurred may result in unsatisfactory weed control.)
		2.75 L	2nd Application - Post-sowing Apply as soon as possible after secondary (fibrous) root attachment, by air or SCWIIRT to flooded bays. Apply Saturn when barnyard grass is at the 0 to 3 leaf stage and dirty Dora is at the 0 to 2 leaf stage. Do NOT apply to floating rice or rice that has not developed to the fibrous root (secondary root) stage. (See comments also under Application and Water Management)
Rice (aerial sown into flooded bay) - Langi variety and Paragon variety only		1.0 L	The Split Application technique should be used in Langi and Paragon variety rice, only in situations of low anticipated weed pressure. 1st Application - Pre-sowing Apply by air or SCWIIRT to newly flooded bays prior to weed germination. (Note: Application to bays in which weed germination has occurred may result in unsatisfactory weed control.)
		2.75 L	2nd Application - Post-sowing Refer to Critical Comments above, for "Rice - excluding long grain varieties and Paragon variety".

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WITHHOLDING PERIOD NOT REQUIRED WHEN USED AS DIRECTED.

GENERAL INSTRUCTIONS

In using the Split Application technique it is essential that both the 1st and 2nd applications are applied. The 1st (pre-sowing) application suppresses weed germinations allowing the rice to develop to the secondary root stage at which time the 2nd (post-sowing) application is required for the control of emerging weeds, completing the herbicide program. If one application is applied without the other the technique will result in unsatisfactory weed control. If certain conditions prevent the second application of Saturn from being applied at the correct stage, alternative products (eg. molinate or Londax) should be used for post-emergence weed control.

1ST APPLICATION - Pre-Sowing

Flood area to be sown over a period not longer than 7 days.

Apply Saturn to bays within 7 days of commencement of filling and 6 to 12 hours after all water movement has ceased, prior to germination of weeds. Sow pre-germinated rice seed (not dry rice seed) 1 to 3 days after treatment. Refer to **Water Management** below.

Application

Aerial Application

Apply Saturn to newly flooded bays.

Use flat fan nozzles or AU 5000 rotary atomisers delivering 20 to 40 L spray volume/ha with a droplet size of 200 to 350 µm to ensure thorough, even distribution of Saturn.

Alternatively, apply through solid stream nozzles ie. a Bickley boom with the following setup;

- Two nozzles mounted on droppers, one either side with droppers positioned just outside the first boom hanger (28 – 35% of wingspan).
- Dropper length approximately 40-60 cm or lower below the trailing edge of the wing.
- Solid stream nozzles with bore sufficient to apply desired volume at a pressure of 240 to 310 kPa (35 to 45 psi).
- Nozzles orientated rearwards and parallel to the airstream.
- Check valves (Spraying Systems diaphragm type 12328, ¾ inch) located behind nozzle to eliminate “trailing” after shut off.

For Bickley boom application spray at a maximum wheel height of 2 m above the water surface and at a maximum swath width of 25 m. Ensure a minimum water depth of 10 cm on the high side of bays prior to treatment. A minimum application volume of 20 L/ha is recommended.

Before applying Saturn to contoured bays evaluate the layout of the bays to be treated and select the optimum flight pattern to ensure all bays receive the recommended rate of Saturn.

Thoroughly mix the required amount of Saturn with a similar quantity of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

Do NOT over spray headlands.

SCWIIRT Application

Soluble Chemical Water Injection In Rice Technique (SCWIIRT) involves metering herbicide concentrates directly into flooded fields and relying on aqueous dispersion of the chemical across the field. Four-wheel drive vehicles or helicopters are adapted to meter chemical diluted in a small quantity of water directly into flooded bays. In this use situation Saturn is best applied in a SCWIIRT system with a total application volume of 5 L/ha. Thoroughly mix the required amount of Saturn with a similar quantity of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

Water Management

DO NOT top up bays within 3 days after application. After a minimum of 3 days following application, top up water levels to ensure the high side of the bay is adequately covered.

DO NOT drain rice water into regional drains within the withholding period after Saturn application as defined by the NSW Environment Protection Authority (EPA) or the local irrigation authority.

After completion of initial flooding, complete water coverage of rice bays must be maintained to ensure satisfactory weed control throughout the season. If water levels drop to expose the soil surface, reduced weed control may occur.

2ND APPLICATION - Post-Sowing

Apply Saturn as soon as possible after the development of fibrous (secondary) roots of the rice seedlings and their attachment to the soil surface. At this stage the rice seedling is normally at the 1 to 2 leaf stage. This stage normally occurs 7 to 20 days after sowing depending upon temperature conditions (see diagram below). Do NOT apply to rice prior to the development of fibrous roots or to floating rice, as crop damage may occur.

Water movement should cease 6 to 12 hours before application and water should be held for a minimum of 3 days. Refer to **Water Management** below.

Application

Aerial Application

Apply Saturn to flooded bays.

Use flat fan nozzles or AU 5000 rotary atomisers delivering a minimum of 20 to 40 L spray volume/ha with a droplet size of 200 to 350 µm to ensure thorough, even distribution of Saturn.

Alternatively, apply through solid stream nozzles ie. a Bickley boom according to the setup and instructions described under *Aerial Application* for **1st APPLICATION – pre-sowing** above.

Thoroughly mix the required amount of Saturn with a similar quantity of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

Do NOT over spray headlands.

SCWIIRT Application

Soluble Chemical Water Injection In Rice Technique (SCWIIRT) involves metering herbicide concentrates directly into flooded fields and relying on aqueous dispersion of the chemical across the field. Four-wheel drive vehicles or helicopters are adapted to meter chemical diluted in a small quantity of water directly into flooded bays. In this use situation Saturn is best applied in a SCWIIRT system with a total application volume of 5 L/ha. Thoroughly mix the required amount of Saturn with the majority of water before adding the remainder of water to the spray tank while agitating. Re-agitate if the mixture is allowed to stand before use.

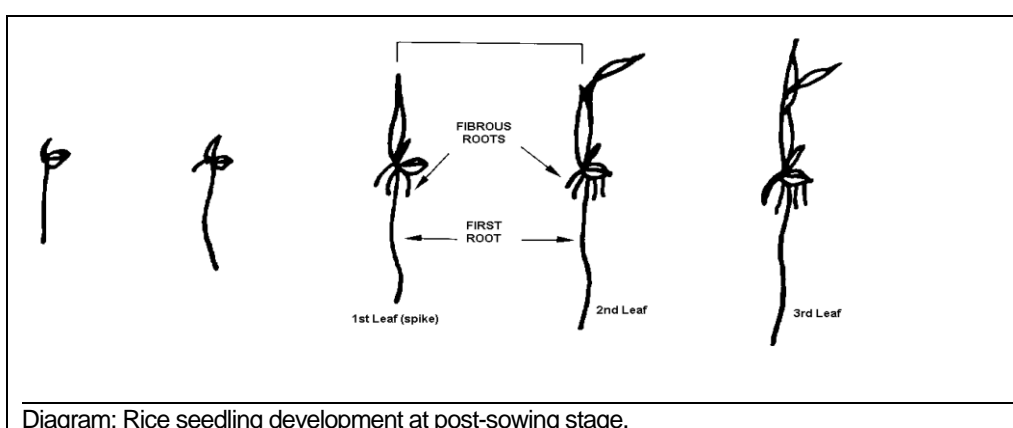
Water Management

After a minimum of 3 days following the second application, bays may be topped up as necessary for normal water management. Ensure full coverage of soil with enough water depth to enable distribution of product throughout the bay. Occasionally crop effects may be observed after the 3 day lock up period. Reducing the water level will assist crop recovery. Contact Bayer CropScience for further advice.

DO NOT drain rice water into regional drains within the withholding period after Saturn application as defined by the NSW Environment Protection Authority (EPA) or the local irrigation authority.

Compatibility

Saturn is compatible for use with Londax in the 2nd Application of the Split Application, as part of a resistance management strategy. Consult the Department of Agriculture Information Bulletin for further information on this strategy. In Langi rice do not apply Londax in mixture with Saturn at rates greater than 70 g Londax/ha.



COMBINE AND PASTURE SOD SOWN RICE

DIRECTIONS FOR USE

Restraints

DO NOT apply Saturn to germinating or emerging rice (0 to 1.5 leaf stage) if ponding is likely to occur in low areas for more than 3 days.

DO NOT use Saturn where irrigation layouts do not permit complete water coverage of the majority of weed growth.

DO NOT apply Saturn to rice sod sown into burnt stubble.

CROP	WEEDS CONTROLLED	STATE	RATE/ha	CRITICAL COMMENTS
Rice (combine and pasture sod sown)	Barnyard grass (<i>Echinochloa</i> spp.), dirty Dora (<i>Cyperus difformis</i>)	NSW, Vic, WA only	5 L	Apply Saturn when barnyard grass is at the 0 to 3 leaf stage and <i>Cyperus</i> spp. are at the 0 to 2 leaf stage. Apply by ground rig or by aircraft. (See comments under Application).
	Above mentioned species plus <i>Cyperus iria</i>	Qld only		Do NOT apply to rice in a weakened condition from causes such as soil salinity, wilting, over watering or any other cause. Do NOT use when weeds are beyond the leaf stages stated above.
	Barnyard grass (<i>Echinochloa</i> spp.), dirty Dora (<i>Cyperus difformis</i>)	NSW, Vic, WA only	3.8 L Saturn + 4.2 L of Ronacil®	Use this tank mix when barnyard grass is at the 0 to 5 leaf stage and dirty Dora is at the 0 to 2 leaf stage. Do NOT use when weeds are beyond the leaf stages stated. Use of this mixture is especially recommended with slow-to-establish short-strawed rice varieties. Apply by aircraft or ground-rig only

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WITHHOLDING PERIOD NOT REQUIRED WHEN USED AS DIRECTED.

GENERAL INSTRUCTIONS

Where rice is sod sown into pasture, it is advisable to use livestock and/or a knockdown herbicide to control the pasture growth prior to sowing.

Prior to rice emergence, if most of the barnyard grass is in the 5 leaf stage and it is unlikely that permanent water will be applied within 10 to 11 days of treatment, the use of a knockdown herbicide is recommended. Apply Saturn or Saturn plus Ronacil mixture later, to control subsequent germination of weeds. Use of this mixture is especially recommended with slow-to-establish, short-strawed rice varieties.

The rice crop should have been flushed at least once prior to application to ensure sealing of the soil surface. Where rice has established on rainfall moisture alone, sealing may not have occurred. Good drainage after flushing is essential.

Application

Saturn can be applied just before or soon after rice emergence but before permanent water is applied.

Apply at low pressures (to either moist or dry soil surface), using ground sprayers delivering 200 L/ha, or by aircraft using flat fan nozzles or AU 5000 rotary atomisers delivering 20 to 40 L/ha with a droplet size of 200 to 350 µm.

Mixing

Thoroughly mix the required amount of Saturn, or Saturn plus Ronacil, with a similar quantity of water before adding the remainder of water to the spray tank, while agitating. Re-agitate if the mixture is allowed to stand before use.

Water Management

Permanent water may be applied as soon as rice plants are at, or past, the 1.5 leaf stage.

DO NOT drain rice water into regional drains within the withholding period after Saturn application as defined by the NSW Environment Protection Authority (EPA) or the local irrigation authority.

(i) Rice Not Ready for Permanent Water

Flushing irrigations should follow spray application within 5 days in the case of Saturn and after 2 days but not later than 5 days in the case of Saturn plus Ronacil. Flushing water must be held for 2 days at a sufficient depth to completely submerge the majority of weed growth and then be drained from the bays. Repeat flushing as necessary to prevent crusting and drying of soil surface. Apply permanent water not later than 10 to 11 days after spray application.

(ii) Rice Ready for Permanent Water

Permanent water should follow spray application within 5 days in the case of Saturn and after 2 days but not later than 5 days in the case of Saturn plus Ronacil. Permanent water should be maintained at a depth to completely submerge the majority of weed growth.

Salvage Control

Where the rice is ready for permanent water and where the barnyard grass is past the 5 leaf stage and up to the early tillering stage, useful suppression and/or partial control may be achieved by higher rates of the Saturn/Ronacil tank mix, with Saturn up to 5 L/ha plus Ronacil up to 7 L/ha. With this treatment some transient leaf scorch of the rice may occur.

Permanent water must be applied after 2 days, but not later than 5 days after application. Permanent water should be maintained at a depth to completely submerge the weed growth for 3 days after application. After this time normal water coverage should be maintained.