ACTIVE CONSTITUENT: 750g/kg ISOXAFLUTOLE

GROUP H HERBICIDE

For the control and suppression of various broadleaf weeds and grasses in sugarcane and chickpeas as specified in the Directions for Use table.

IMPORTANT: READ THOROUGHLY BEFORE OPENING OR USING THIS PRODUCT.
**DIRECTIONS FOR USE**

**RESTRAINTS**

**All crops:** DO NOT apply by aircraft.

**Sugarcane:** DO NOT apply with wetting agents, crop oils or other adjuvants.

DO NOT apply to poorly drained soils, e.g. soils prone to waterlogging, sodic soils or soils affected by physical compaction.

DO NOT apply to crops with poor root development or to crops under stress from waterlogging, drought, nutrient deficiency or disease.

DO NOT apply to soils of cation exchange capacity (C.E.C.) below 4.5meq/100g.

DO NOT apply to soils with organic carbon content of 1.0% or less, unless the cation exchange capacity (C.E.C.) is above 9.5meq/100g. These values should be determined through soil analysis prior to using TITAN Isoxaflutole 750 WG Herbicide.

**Critical Comments**

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

**WITHHOLDING PERIODS**

**Sugarcane**

Harvest: DO NOT HARVEST FOR 19 WEEKS AFTER APPLICATION.

Grazing: DO NOT GRAZE ANIMALS ON TREATED CROPS.

**Chickpeas**

Harvest: NOT REQUIRED WHEN USED AS DIRECTED.

Grazing: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 6 WEEKS AFTER APPLICATION.

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**CROP** | **WEEDS CONTROLLED** | **STATES** | **RATE** | **CRITICAL COMMENTS**
--- | --- | --- | --- | ---
**Sugarcane** | Pre weed emergence: Barnyard Grass, Billygoat Weed (Blue Top), Blackberry Nightshade, Crowfoot Grass, Green Summer Grass, Guinea Grass, Summer Grass, Thick Head | QLD, NSW, WA only | 200g/ha | General: TITAN Isoxaflutole 750 WG Herbicide can be applied to hot and dry soils, without the risk of breakdown by sunlight. For effective weed control, incorporation by rainfall or irrigation to the weed root zone is required, but immediate soil incorporation is not critical due to the ultraviolet stability of TITAN Isoxaflutole 750 WG Herbicide. See ‘Crop Safety’ and ‘Application’ under General Instructions.

Pre to early post-emergence of plant cane: May be applied as a broadcast or band spray ‘over the top’ of plant cane from planting up to the 3 to 4 leaf crop stage. ADD paraquat at label rates where green cane leaf has emerged at application, even if no weeds have emerged. DO NOT apply as a broadcast or band spray after the 4 leaf stage of plant cane. Beyond this stage, TITAN Isoxaflutole 750 WG Herbicide must only be applied as a directed spray (see Prior to the ‘out-of-hand’ stage of plant and ratoon cane below). DO NOT apply to unconsolidated soil in the cutaway situation, where rainfall or irrigation may cause soil movement into the planting drill. DO NOT apply to shallow planted cane (eg. less than 60mm soil cover above the sett). A greater depth of soil cover is recommended where soils have a high infiltration rate.

After harvest of ratoon cane: May be applied ‘over the top’ of cane as a broadcast or band spray up to the two-leaf crop stage. TITAN Isoxaflutole 750 WG Herbicide can be applied to burnt or trash blanketed ratoon cane. Avoid soil disturbance, eg. soil splitting, after application. If weeds have emerged at application, add paraquat at the appropriate label rate to provide improved weed knockdown.

Prior to the ‘out-of-hand’ stage of plant and ratoon cane: Apply as a directed inter-row spray (eg. Irvin leg) to the soil surface after the last working. Best results are obtained where the mound surface has consolidated to minimise soil and herbicide movement. Direct the spray to minimise contact with sugarcane foliage. DO NOT apply to sugarcane less than 0.75m in height. If weeds have emerged at application, add paraquat at the appropriate label rate to provide improved weed knockdown.

**Chickpeas** | **Weeds controlled** Capeweed, Crassula, Indian Hedge Mustard, Medic, Prickly Lettuce, Sowthistle, Turnip Weed, Wild Radish | QLD, NSW, ACT, VIC, SA, WA only | 100g/ha | Pre weed emergence: Application can be made to dry or damp soil. Application should be made as soon as possible after planting prior to emergence of the crop. If applied during the planting operation ensure TITAN Isoxaflutole 750 WG Herbicide is applied after furrow closure. Failure to thoroughly close and firm the seed furrow may allow herbicide to directly contact the seed which may cause crop injury. If sowing with knife points or disc openers, ensure that herbicide cannot be concentrated in the sowing furrow by soil wash. Either close the furrow with harrows, or stabilise the furrow with press wheels. Mechanical incorporation is not recommended. Use a nozzle configuration to achieve a medium to coarse spray pattern. A minimum spray volume of 50 L/ha is recommended. Application of TITAN Isoxaflutole 750 WG Herbicide post-sowing pre-emergent to chickpeas planted in sandy or gravelly soils, or soils low in clay or organic matter may result in crop damage. Heavy rains after the application of TITAN Isoxaflutole 750 WG Herbicide may cause crop damage, particularly in sandy or gravelly soils. TITAN Isoxaflutole 750 WG Herbicide is not recommended for use on Yorker chickpeas. See “Crop Safety” in the GENERAL INSTRUCTIONS section below.

**Weeds Suppressed** Deadnettles, Slender Celery

DO NOT apply to soils of cation exchange capacity (C.E.C.) below 4.5meq/100g.

**Weeds Suppressed** Saffron Thistle, Spiny Emex, Wireweed

DO NOT apply to poorly drained soils, e.g. soils prone to waterlogging, sodic soils or soils affected by physical compaction.

TITAN Isoxaflutole 750 WG Herbicide + simazine in sandy or gravely soils may result in severe crop damage.

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

**WITHHOLDING PERIODS**

**Sugarcane**

Harvest: DO NOT HARVEST FOR 19 WEEKS AFTER APPLICATION.

Grazing: DO NOT GRAZE ANIMALS ON TREATED CROPS.

**Chickpeas**

Harvest: NOT REQUIRED WHEN USED AS DIRECTED.

Grazing: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 6 WEEKS AFTER APPLICATION.
GENERAL INSTRUCTIONS

RESISTANT WEEDS WARNING

TITAN Isoxaflutole 750 WG Herbicide is a member of the isoxaflutole group of herbicides. TITAN Isoxaflutole 750 WG Herbicide is a herbicide which inhibits 4-hydroxyphenyl-pyruvate dioxygenase (4-HPPD). For weed resistance management TITAN Isoxaflutole 750 WG Herbicide is a Group H herbicide. Some naturally-occurring weed biotypes resistant to TITAN Isoxaflutole 750 WG Herbicide, and other Group H 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 TITAN Isoxaflutole 750 WG Herbicide or other Group H herbicides.

Since occurrence of resistant weeds is difficult to detect prior to use, TITAN AG Pty Ltd accepts no liability for any losses that may result from the failure of TITAN Isoxaflutole 750 WG Herbicide to control resistant weeds.

CROP SAFETY

**Chickpeas**

Application of TITAN Isoxaflutole 750 WG Herbicide PSPE to chickpeas planted in soil or on gravely soils, or soil low in clay or organic matter may result in crop damage. Heavy rains after the application of TITAN Isoxaflutole 750 WG Herbicide may cause crop damage, particularly in sandy or gravelly soils. Application of TITAN Isoxaflutole 750 WG Herbicide + simazine in sandy or gravelly soils may result in severe crop damage.

Varietal tolerance

TITAN Isoxaflutole 750 WG Herbicide is not recommended for use with the chickpea variety Yorker. Application of TITAN Isoxaflutole 750 WG Herbicide post-sowing pre-emergence to crops of Yorker variety chickpeas can result in unacceptable crop damage and may result in yield loss.

Crop rotation recommendations

TITAN Isoxaflutole 750 WG Herbicide may be applied to chickpea crops where the following crop will be chickpeas, or where the land will be left fallow. The following recropping instructions apply to following crops other than chickpeas.

- Prolonged dry periods or cold conditions may result in extended re-cropping intervals, even if rainfall exceeds the required amount (listed in the table below). If in doubt, contact your local TITAN AG representative.
- Heavy rainfall after an extended dry period may result in the reactivation of TITAN Isoxaflutole 750 WG Herbicide. This can lead to transient bleaching or crop stunting.
- Use on soils with a pH less than 7.0 has not been extensively tested, and may result in extended recropping intervals.
- Cultivation is recommended prior to recropping.
- Minimum recropping intervals apply for all crops following TITAN Isoxaflutole 750 WG Herbicide application. For advice on recropping intervals contact TITAN AG Pty Ltd.

**CROP**

**MINIMUM RECROP**

**MINIMUM RAINFALL**

<table>
<thead>
<tr>
<th>CROP</th>
<th>INTERVAL</th>
<th>REQUIREMENT*</th>
</tr>
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<tbody>
<tr>
<td>Wheat</td>
<td>10 weeks*</td>
<td>100 mm</td>
</tr>
<tr>
<td>Barley</td>
<td>10 weeks*</td>
<td>100 mm</td>
</tr>
<tr>
<td>Oats</td>
<td>10 weeks*</td>
<td>100 mm</td>
</tr>
<tr>
<td>Canola</td>
<td>9 months</td>
<td>350 mm</td>
</tr>
<tr>
<td>Faba beans</td>
<td>9 months</td>
<td>250 mm</td>
</tr>
<tr>
<td>Field peas</td>
<td>9 months</td>
<td>250 mm</td>
</tr>
<tr>
<td>Lentils</td>
<td>21 months</td>
<td>500 mm</td>
</tr>
<tr>
<td>Clover</td>
<td>21 months</td>
<td>500 mm</td>
</tr>
<tr>
<td>Lucerne</td>
<td>9 months</td>
<td>350 mm</td>
</tr>
<tr>
<td>Medic</td>
<td>21 months</td>
<td>500 mm</td>
</tr>
<tr>
<td>Maize</td>
<td>10 weeks*</td>
<td>100 mm</td>
</tr>
<tr>
<td>Mung beans</td>
<td>7 months</td>
<td>250 mm</td>
</tr>
<tr>
<td>Sorghum</td>
<td>7 months</td>
<td>250 mm</td>
</tr>
<tr>
<td>Soybeans</td>
<td>7 months</td>
<td>250 mm</td>
</tr>
<tr>
<td>Sunflowers</td>
<td>7 months</td>
<td>250 mm</td>
</tr>
<tr>
<td>Cotton</td>
<td>7 months</td>
<td>350 mm</td>
</tr>
</tbody>
</table>

* Minimum rainfall total from TITAN Isoxaflutole 750 WG Herbicide use until planting of the subsequent crop. **DO NOT include flood or furrow irrigation in the minimum rainfall requirement.

**If TITAN Isoxaflutole 750 WG Herbicide has been tank-mixed with simazine, observe the recropping interval for simazine for wheat, barley, oats and maize.**

**Sugarcane**

There are 3 key guidelines for maintaining crop safety when using TITAN Isoxaflutole 750 WG Herbicide in sugarcane.

1. **DO NOT apply to soils with a low binding potential, that is with a C.E.C. below 4.5meq/100g, or an O.C. of 1.0% or less (unless C.E.C. is greater than 9.5meq/100g).**
2. **DO NOT apply to areas which have poor drainage or poor root development.**
3. **Add parquat to TITAN Isoxaflutole 750 WG Herbicide to minimise foliar damage when applying as a broadcast spray to plant cane.**

TITAN Isoxaflutole 750 WG Herbicide is adsorbed to organic matter and clay particles in the soil. Soils with low organic carbon (O.C.) and cation exchange capacity (C.E.C.) have a reduced capacity to adsorb the herbicide in the soil, which may result in the herbicide leaching past the weed root zone into the cane root zone. Crop root uptake of TITAN Isoxaflutole 750 WG Herbicide may result in phytotoxicity, which is evident as bleaching of leaves. To minimise the risk of crop root uptake, TITAN Isoxaflutole 750 WG Herbicide is not recommended for use on soil with a C.E.C. below 4.5meq/100 g. or an O.C. of 1.0% or less (unless C.E.C. is greater than 9.5meq/100g). These values should be determined through soil analysis prior to using TITAN Isoxaflutole 750 WG Herbicide. Refer to your local reseller or TITAN AG representative to assist you with interpretation of your soil analysis results.

The use of TITAN Isoxaflutole 750 WG Herbicide on newly limed soil could cause severe crop damage, please contact your local TITAN AG representative for advice prior to use of TITAN Isoxaflutole 750 WG Herbicide in this situation. TITAN Isoxaflutole 750 WG Herbicide has been field tested on all important commercial varieties of sugarcane (available up to September 2002) without any evidence of varietal tolerance variation. If you are contemplating the use of TITAN Isoxaflutole 750 WG Herbicide on experimental or minor varieties of sugarcane, small test areas should be treated to establish suitable tolerance before treating large areas. For further information on varietal tolerance please contact your TITAN AG representative.

**MIXING**

Partly fill the spray tank with water. Start agitation. Add the correct amount of TITAN Isoxaflutole 750 WG Herbicide to the spray tank with the agitation system running. When tank-mixing with parquat, ensure that TITAN Isoxaflutole 750 WG Herbicide is added to the spray mixture first, followed by parquat to ensure thorough mixing. Continue agitation while topping up the tank with water and while spraying. Use prepared spray mixture on day of preparation. DO NOT allow spray mixture to stand overnight.

**APPLICATION**

TITAN Isoxaflutole 750 WG Herbicide can be applied to hot and dry soils, without the risk of breakdown by sunlight. This ultraviolet stability removes the need for immediate soil incorporation of the product. TITAN Isoxaflutole 750 WG Herbicide is activated by rainfall or irrigation, which is required to carry the herbicide into the root zone of the germinating weeds. Deep germinating weeds (eg. wild radish) may not be adequately controlled in years where rainfall is low (<15mm). Weed escapes of crops after spraying TITAN Isoxaflutole 750 WG Herbicide if weed germination occurs before the chemical is activated OR carried to the depth of the weed root zone. Under prolonged dry conditions a greater quantity of rainfall or irrigation may be required for effective activation of the product. Under these conditions, shoots of germinating weeds may intercept the TITAN Isoxaflutole 750 WG Herbicide band and appear affected, but may not be controlled. Weeds that do not turn completely white within days of emergence must be sprayed with an appropriate knockdown herbicide. To avoid weed escapes, it is recommended to allow weeds to germinate, and then apply TITAN Isoxaflutole 750 WG Herbicide in tank mixture with parquat at an appropriate label rate to provide additional weed knockdown. Soil movement from irrigation or cultivation may result in poor weed control from TITAN Isoxaflutole 750 WG Herbicide. DO NOT Incorporate TITAN Isoxaflutole 750 WG Herbicide by flood irrigation or with high-pressure water cannons if excessive soil movement is expected, particularly if the soil is in a loose, dry condition. Best results are achieved where rainfall or low pressure overhead irrigation carries the herbicide downward in an even band to the depth of the weed root zone.

**Sugarcane:** Apply in a minimum spray volume of 250L/ha. For best results flat fan nozzles are recommended. Select the lowest pressure (within the recommended nozzle operating range), to reduce drift. Use a nozzle size that delivers a medium to coarse droplet at the selected operating pressure.

**COMPATIBILITY**

**Sugarcane:** TITAN Isoxaflutole 750 WG Herbicide may be tank-mixed with parquat formulations at the appropriate label rates for each product. TITAN Isoxaflutole 750 WG Herbicide is also compatible with atrazine (900g/kg) and Actril® DS (apply no more than 500mL/ha in combination with TITAN Isoxaflutole 750 WG Herbicide).
Tank Mixtures: Read and follow all label directions including restraints, spray drift restraints, mandatory no-spray zones, critical comments, withholding periods, regional use restrictions and safety directions for the tank mix products.

**Chickpeas**: TITAN Isoxaflutole 750 WG Herbicide should not be tank-mixed with trifluralin.

**SPRAY EQUIPMENT CLEAN-UP**
After using TITAN Isoxaflutole 750 WG Herbicide, empty the tank completely and drain the whole system. Without entering it, thoroughly wash inside the tank using a pressure hose. Alternatively, if the tank is fitted with in-tank nozzles, activate these nozzles to thoroughly rinse the inside of the tank. Drain the tank and clean any tank, pump, line and nozzle filters. Before disassembling nozzles, filters and other parts for cleaning, thoroughly wash down the exterior of the spray equipment with a pressure hose.

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 (e.g. canola, pulses except chickpeas), forage legumes and forage brassicas, wash the tank and rinse the system as above. Quarter fill the tank and add a liquid alkali detergent at 500mL/100L of water or a chlorine bleach (4% chlorine) at 300mL/100L of water and circulate throughout the system for at least fifteen minutes. Drain the whole system. Nozzles, screens, relief valves, dump lines, caps and taps at the end of spray lines, tank lids, flow meters, lines to pressure gauges, external tank indicators, induction hoppers and transfer systems should be removed/pulled apart and cleaned separately. Pay special attention to by-pass lines from pressure relief or dump valves to the main tank. To remove chlorine bleach flush the system with clean water and allow to drain. Finally, flush the system with clean water and allow to drain. Drainage and rinse water should be discharged into a designated disposal area or if this is unavailable, onto unused land away from desirable plants and their roots, and water courses.

**PRECAUTIONS**

**Re-entry period**: DO NOT allow entry into treated areas for 12 hours after treatment. When prior entry is necessary, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day’s use.

**PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**
DO NOT contaminate streams, rivers or waterways with this product or the used containers, as this product may cause injury to non-target plants and vegetation, particularly aquatic plants and algae.

**PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS**
DO NOT apply under weather conditions, or from spraying equipment, which could be expected to cause spray to drift onto nearby susceptible plants/crops, cropping lands or pastures.

**STORAGE AND DISPOSAL**
Store in the closed, original container in a dry, cool, well-ventilated area out of direct sunlight. Single rinse before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on-site. Puncture and bury empty bags in a local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty bags and product should not be burnt. If an approved waste management facility is not available, bury the empty packaging 500mm 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.

**SAFETY DIRECTIONS**
Will irritate the eyes and skin. Avoid contact with eyes and skin. If product in eyes, wash it out immediately with water. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), a washable hat, elbow length chemical resistant gloves and face shield or goggles. When using the prepared spray wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat and elbow length chemical resistant gloves. Wash hands after use. After each day’s use wash gloves, face shield or goggles and contaminated clothing.

**FIRST AID**
If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126.

**SAFETY DATA SHEET**
Additional information is listed in the safety data sheet (SDS). A safety data sheet for TITAN Isoxaflutole 750 WG Herbicide is available from TITAN Ag Pty Ltd on request. Call Customer Service on (02) 9999 6655 or visit www.titanag.com.au

**CONDITIONS OF SALE**: TITAN Ag Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on TITAN Ag’s skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of TITAN Ag Pty Ltd has any authority to add to or alter these conditions.

Additional statements required by Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia: Suspected of damaging fertility or the unborn child. Very toxic to aquatic life with long lasting effects. Precautionary: Wear protective gloves/protection/eye protection/face protection. Avoid release to the environment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. IF exposed or concerned: Get medical advice/attention. Collect spillage. Store locked up. Dispose of contents/container in accordance with local/regional/national regulations.

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TITAN ISOXAFLUTOLE 750 WG HERBICIDE • PAGE 4 OF 4