



Company Name: UPL AUSTRALIA LIMITED
Product Name: Fist HydroCap Herbicide
APVMA Approval No: 80856/108404



Label Name:	Fist HydroCap Herbicide
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Signal Headings:	CAUTION KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING
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Constituent Statements:	ACTIVE CONSTITUENT: 456 g/L PENDIMETHALIN
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Mode of Action:	GROUP D HERBICIDE
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Statement of Claims:	FOR THE CONTROL OF WIREWEED, ANNUAL GRASSES (INCLUDING ANNUAL RYEGRASS) AND CERTAIN BROADLEAF WEEDS IN VARIOUS CROPS AS SPECIFIED IN THE DIRECTIONS FOR USE TABLE.
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Net Contents:	20 L, 60 L, 100 L, 110 L, 200 L, 1000L Bulk
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Restraints:	DO NOT use in irrigation channels or drains UNLESS ALL irrigation tailwater and rainfall can be captured and held on farm. DO NOT sow sensitive summer crops such as sorghum and millets within 12 months of application of FIST HydroCap HERBICIDE. DO NOT apply to a poorly prepared seedbed. DO NOT use FIST HydroCap HERBICIDE mixed with atrazine on heavy clay soils. DO NOT apply FIST HydroCap HERBICIDE where waterlogging is likely to occur. DO NOT apply using aerial equipment. DO NOT apply to areas of publicly accessible turf.
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Directions for Use:	This section contains file attachment. File Name: Fist Hydrocap Herbicide DfU 1215.doc File Size: 142336 bytes
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Other Limitations:	NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.
Withholding Periods:	WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED
Trade Advice:	
General Instructions:	This section contains file attachment. File Name: Fist HydroCap Herbicide GenInstr 231215.pdf File Size: 121110 bytes
Resistance Warning:	GROUP D HERBICIDE FIST HydroCap HERBICIDE is a member of the dinitroaniline group of herbicides. FIST HydroCap HERBICIDE has the inhibition of tubulin formation mode of action. For weed resistance management, FIST HydroCap HERBICIDE is a Group D herbicide. Some naturally-occurring weed biotypes resistant to FIST HydroCap HERBICIDE and other Group D 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 FIST HydroCap HERBICIDE or other Group D herbicides. Since the occurrence of resistant weeds is difficult to detect prior to use, UPL Australia Limited accepts no liability for any losses that may result from the failure of FIST HydroCap HERBICIDE to control resistant weeds.
Precautions:	<ul style="list-style-type: none"> • Do not enter treated areas until the spray has dried for low exposure activities (described in the table above), unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use. • Do not enter treated areas to perform medium to very high exposure activities for the days indicated in the table above unless wearing cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use.
Protections:	PROTECTION OF CROPS, NATIVE AND OTHER NON-TARGET PLANTS DO NOT apply under meteorological conditions or from spraying equipment that could be expected to cause spray to drift onto nearby susceptible plants, adjacent crops, crop lands or pastures. PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT Dangerous to fish and other aquatic life. DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply or allow spray to drift onto adjacent aquatic areas (ponds, streams, lakes, rivers and waterways). Allow sufficient buffer distances between downwind water bodies and the sprayed area.
Storage and Disposal:	Store in the closed, original container in a dry, cool, well ventilated area. Do not store for prolonged periods in direct sunlight. Triple rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler

or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant local, state or territory government regulations. Do not burn empty containers or product.

Refillable Containers: Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

Safety Directions:

May irritate eyes. Avoid contact with eyes. When opening the container and preparing spray wear cotton overalls over normal clothing, buttoned to the neck and wrist, a washable hat, and elbow-length chemical-resistant gloves. When using the prepared spray wear cotton overalls over normal clothing, buttoned to the neck and wrist, and elbow length chemical-resistant gloves. Wash hands after use. After each day's use wash gloves and contaminated clothing.

First Aid Instructions:

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

First Aid Warnings:

NOTE: For all crops listed in the double incorporation table below:
 Incorporate FIST HydroCap HERBICIDE into the soil within 24 hours of application. Refer to the Notes on Incorporation under the heading General Instructions. Where a range of application rates are provided, use the higher rate on heavy textured soils or those high in organic matter and the lower rate on light to medium textured soils. Application to soil types with poor structural characteristics or that are poorly worked may result in insufficient and uneven incorporation and, subsequently less than satisfactory weed control. Heavy soils, which are cloddy or have a surface crust or surface seal, are to be avoided. Attempting to incorporate FIST HydroCap HERBICIDE when soils are very wet or very dry may also result in poor weed control due to insufficient mixing. Refer to the General Instructions, especially “Cereal Seed Dressings” and “Weather Conditions at Planting” for further information on emergence.

CROP	WEEDS CONTROLLED	STATE	RATE/TREATED ha	CRITICAL COMMENTS
1. PRE-PLANT INCORPORATED TREATMENT (DOUBLE INCORPORATION)				
Cotton	See Weed Table A	Qld and NSW only	2.2 L/ha	Incorporate into the soil within 24 hours of application. Use a combine with trailing harrows and chain or offset or tandem discs or Lilliston cultivators, set to work to a depth of 2-5 cm. Subsequent planting operations in irrigated cotton may remove the treated soil from hills leaving an untreated band over the row, requiring a further application of FIST HydroCap or other herbicides in that band. When the seedbed is rough, a second incorporation is necessary. FIST HydroCap may be applied by ground spraying. Use the higher rate on heavy textured soils or those high in organic matter and the lower rate on light to medium textured soils.
Cow Peas, Mung Beans, Navy Beans, Peanuts, Pigeon Peas, and Soybeans		Qld, NSW, ACT and NT only	1.8 to 2.2 L/ha	
Sunflowers		Qld, NSW, ACT, Tas, Vic and SA only		
Wheat and Barley	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>), Suppression only of Wild oats (<i>Avena</i> spp.)	All States	870 mL/ha	Incorporate into the soil within 24 hours of application. (Refer note (a) under “Incorporation”). Use weighted harrows at 8 to 13 km/hr, followed by a cross working with a combine set to work at a depth of 2 to 5 cm at 8 to 13 km/hr. Wheat and barley seed must be sown approximately 1 cm beneath the chemically treated band or reduced emergence may occur. If wild oats are expected to be a problem use a wild oat herbicide.
Field Peas		Southern NSW, Vic, Tas, SA and WA only	1.5 L/ha	
Chickpeas, Faba Beans, Lentils, Lupins and Safflower.		Qld, Northern NSW and Tas* only	1.8 to 2.2 L/ha	

* **Lupins:** in Tasmania, use **only** on the species *Lupinus angustifolius*. DO NOT use on *L. albus*.

SITUATION / CROP	WEEDS CONTROLLED	STATE	RATE/ TREATED ha	CRITICAL COMMENTS
2. PRE-PLANT APPLICATION (INCORPORATION DURING SOWING)				
Wheat and Barley (including crops with undersown lucerne)	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>) Suppression only of Wild oats (<i>Avena</i> spp.)	All States	1.3 L/ha	<p>Barley and wheat (including crops where lucerne is undersown): Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply this product up to 24 hours prior to sowing. Incorporate with the combine set to sow to a depth of 3-5 cm. Use trailing harrows. (Refer note (a) under "Incorporation".) In minimum till situations, only light incorporation will occur due to soil displaced by the points. Trailing harrows should be used to provide better incorporation and weed control. Avoid heavy trash situations which may result in uneven application and incorporation, leading to reduced weed control. Wheat and barley seed must be sown at least 1 cm beneath the chemically treated band or reduced emergence may occur. Refer sections "Cereal Seed Dressings" and "Weather Conditions at Planting", under GENERAL INSTRUCTIONS, for further information on emergence.</p> <p>CAUTION: Ensure thorough incorporation to maximise safety to undersown lucerne.</p> <p>Canola (including crops where lucerne is undersown): Apply FIST HydroCap HERBICIDE up to 24 hours prior to sowing. Incorporate with the combine set to sow the seed below the chemical band. Use the higher rates on medium to heavy textured soils and the lower rates on light textured soils.</p> <p>NOTE: Development in water-logged conditions after the application of FIST HydroCap HERBICIDE may retard the emergence of canola.</p> <p>If wild oats are expected to be a problem use wild oat herbicide. Application to heavier soil types that have poor structural characteristics or are poorly worked may result in insufficient and uneven incorporation and unsatisfactory weed control. Heavy soils that are cloddy or have a surface crust or surface seal should be avoided. Attempting to incorporate FIST HydroCap HERBICIDE when soils are very wet or very dry may also result in insufficient mixing and therefore poor weed control.</p> <p>CAUTION: Ensure thorough incorporation to maximise safety to undersown lucerne.</p> <p>Where full (double) incorporation is impractical and where the seedbed tilth is fine and free of large stones and trash, apply this product or in the case of lupins, this product plus simazine, up to 24 hours prior to sowing. Incorporation with the combine set to sow to a depth of 3-5 cm. Use trailing harrows. (Refer note (a) under "Incorporation"). Application to heavier soil types which have poor structural characteristics or are poorly worked may result in insufficient and uneven incorporation and unsatisfactory weed control. Heavy soils which are cloddy or have a surface crust or a</p>
Canola (including crops with undersown lucerne)	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>), Suppression only of Wild oats (<i>Avena</i> spp.)	Southern NSW, Vic, Tas, SA, and WA only	1.3 to 2.2 L/ha	
	Suppression only of Silvergrass (<i>Vulpia</i> spp.)		1.5 to 2.2 L/ha	
Chickpeas, Faba Beans, Field Peas, Lentils, Lupins and Safflower.	Annual Ryegrass (<i>Lolium rigidum</i>), Wireweed (<i>Polygonum aviculare</i>)	Southern NSW, Vic, SA and WA only	1.5 to 2.2 L/ha	
Lupins	Suppression only of Silver Grass (<i>Vulpia</i> spp.) and Wild Oats (<i>Avena</i> spp.)	WA only	1.5 L/ha plus simazine at 500 g a.i/ha	

		NSW, Vic and SA only	1.5 L/ha plus simazine at 1.5 kg a.i/ha	surface seal should be avoided. Attempting to incorporate this product when soils are very wet or very dry may also result in insufficient mixing and therefore poor weed control. Refer to section on "Weather Conditions at Planting", under GENERAL INSTRUCTIONS, for further information on emergence. If wild oats are expected to be a problem, use a wild oat herbicide. Use the higher rates on medium to heavy textured soils and the lower rates on light textured soils.
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SITUATION / CROP	WEEDS CONTROLLED	STATE	RATE/ TREATED ha	CRITICAL COMMENTS
3. POST-PLANT PRE-EMERGENCE (OR POST EMERGENCE, ONION ONLY) SURFACE APPLICATION (OVERALL BAND SPRAYING): NON-MECHANICAL INCORPORATION				
Cotton	See Weed Table B	Qld and NSW only	3.3 L/ha	COTTON: Where incorporation prior to sowing is impractical and where the seedbed tilth is fine and free of large stones and trash, FIST HydroCap HERBICIDE should be applied within 48 hours after sowing. SUNFLOWERS: Where incorporation prior to sowing is impractical and where the seedbed tilth is fine and free of large stones and trash, FIST HydroCap HERBICIDE should be applied after sowing and before the emergence of the crop and weeds. Where Fat Hen or Blackberry Nightshade is expected to be a major problem, pre-plant incorporation (No. 1 application method), is preferred. Refer to the relevant sections under the heading "Incorporation" in "General Instructions".
Sunflowers		Qld, NSW, ACT and SA only		
Maize	See Weed Table B	Qld, NSW, ACT and NT only	3.3 L/ha	Where grasses are expected to be the major problem, this treatment is recommended – FIST HydroCap alone. Apply FIST HydroCap after planting and before emergence of crop and weeds. DO NOT incorporate this treatment. Avoid application in dry weather as this may cause pruning of aerial roots and lodging. Refer to the relevant sections under "Incorporation" in the "General Instructions".
	See Weed Table C		2.2 L/ha plus atrazine at 1.0 kg a.i./ha	
Carrots	See Weed Table D	Qld, NSW, ACT, Vic, SA, WA and Tas only	1.5 to 2.2 L/ha	MINIMUM PLANTING DEPTH: Carrots: 15 mm, Processing peas and French beans: 30 mm Seed should be sown with press wheels or rollers behind the planter in order to ensure coverage of the seed and compaction of the seedbed. Apply FIST HydroCap HERBICIDE to a fine firm seedbed free of ridges, clods and trash within 2 days after sowing. Use the higher rates on heavier textured soils or those with a higher organic matter content. Incorporate with 12 to 25 mm of spray irrigation or rainfall applied within one day of application for optimum performance. DO NOT disturb the soil by rolling or harrowing after FIST HydroCap HERBICIDE has been applied. DO NOT apply where heavy rainfall or irrigation is likely to lead to water logging. DO NOT use FIST HydroCap HERBICIDE on soils with an organic matter content above 6% as inconsistent weed control may occur. FRENCH BEANS: For Qld, use in the Lockyer and Fassifern Valleys only. DO NOT apply to French beans sown during the autumn, winter or early spring or which are likely to be stressed by cold weather.
	Weed Table D plus Wild Radish (<i>Raphanus raphanistrum</i>), and Sowthistle (<i>Sonchus oleraceus</i>)		1.5 L/ha plus linuron at 1.0 kg a.i./ha	
Processing Peas	See Weed Table D	Qld, Vic only	1.5 to 2.9 L/ha	
French beans		Tas only	2.9 L/ha	
		Qld only	2.2 to 2.9 L/ha	
Broad beans	Poppies, Wireweed (<i>Polygonum aviculare</i>)	Tas only	2.9 L/ha	

SITUATION / CROP	WEEDS CONTROLLED	STATE	RATE/ TREATED ha	CRITICAL COMMENTS
3. POST-PLANT PRE-EMERGENCE (OR POST EMERGENCE, ONION ONLY) SURFACE APPLICATION (OVERALL BAND SPRAYING): NON-MECHANICAL INCORPORATION (continued)				
Onions	Hogweed (Wireweed) (<i>Polygonum aviculare</i>)	Tas only	550 to 730 mL/ha	Apply in conjunction with other herbicides as advised by a qualified crop adviser to ensure that an adequate level of weed control is achieved in adverse conditions. Pre-emergence: DO NOT use on sandy soils. MINIMUM PLANTING DEPTH: 15 mm. Apply from immediately after sowing until just prior to emergence. Apply FIST HydroCap HERBICIDE to a fine, firm seedbed free of clods and trash. Use the higher rates on heavy textured soils or those with a high organic content. For optimum performance, incorporate with no more than 12 mm of spray irrigation within one day of application. DO NOT exceed 550 mL/ha if soil conditions are wet and cold.
			730 mL to 1.45 L/ha	Post-Emergence: Apply FIST HydroCap HERBICIDE from the first true leaf until the 3-leaf stage. Repeat applications may be made after the 1 leaf up to the 3-leaf stage providing total usage of FIST HydroCap HERBICIDE on crop does not exceed 2.2 L/ha. Avoid applying FIST HydroCap HERBICIDE to areas where water logging is likely to occur.
		NSW, ACT, VIC, SA and WA only		Apply in conjunction with other herbicides as advised by a qualified crop adviser to ensure that an adequate level of weed control is achieved in adverse conditions. Depth of sowing is critical. Onions must be sown to a depth of at least 15mm with press wheels or rollers behind planter to ensure coverage and compaction. DO NOT disturb the soil by rolling or harrowing after application. For optimum performance, incorporate with spray irrigation within a day of planting. However, DO NOT water heavily (no more than 12 mm irrigation) for at least 5 days after application. AVOID application to areas where water logging is likely to occur. DO NOT apply if heavy rain is likely within a week of application, as crop damage may result. DO NOT exceed 550 mL/ha if soil conditions are wet and cold. DO NOT apply more than 3 times per season. DO NOT apply more than 2.2 L/ha per season.
			550 mL to 730 mL (see Critical Comments)	Light/sandy soils DO NOT apply pre-emergence. Application to moist soil is best. Apply 550-730 mL/ha post emergence at the 4-5 leaf stage, with 1-2 further applications of 550-730 mL/ha as needed throughout the season (approx 3-4 weeks apart).

			<p>730 mL to 1.45 L (see Critical Comments)</p>	<p>Heavy/high organic matter soils Application to moist soil is best. Apply 730 mL-1.45L/ha pre-emergence within 2 days of planting. Apply to a fine firm seed bed free of ridges, clods and trash. For furrow irrigated crops, application to a dry seed bed, followed by irrigation within 5 days is optimal. An application of 730 mL-1.1L/ha post emergence may be made at the 2 leaf stage. (Application at this stage may cause yellowing of onions).</p>
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SITUATION / CROP	WEEDS CONTROLLED	STATE	RATE/ TREATED ha	CRITICAL COMMENTS
4. POST-PLANT, PRE-EMERGENCE TREATMENT (INCORPORATED OR NON-INCORPORATED)				
Sugar cane	Awnless Barnyard Grass (<i>Echinochloa colona</i>), Crowsfoot Grass (<i>Eleusine indica</i>), Green Summer Grass (<i>Brachiaria subquadripara</i>), Guinea Grass (<i>Panicum maximum</i> c.v. <i>Hamil</i> and c.v. <i>Guinea</i>), Summer Grass (<i>Digitaria ciliaris</i>),	Qld, NSW and WA only	2.2 to 3.3 L/ha	FIST HydroCap HERBICIDE should be applied as soon as possible after planting and before sugarcane and weed emergence. Consolidation (cutaway operation) of the planting furrow prior to application, to prevent soil movement into the base of the drill, is recommended. Expect poor grass control in soils, which contain a high percentage of organic matter. (Refer to "Incorporation" under "General Instructions"). Use the higher rate where longer weed control is required, or where incorporation by irrigation or rainfall is likely to be delayed more than 5 days. NOTE: INCORPORATION: Under dry conditions or where some cultivation is expected after application FIST HydroCap HERBICIDE should be thoroughly incorporated by finger rakes to a shallow depth. In subsequent tillage operations, cultivation depth should not exceed the depth of incorporation. WATER INCORPORATION: Incorporate using 12 to 25 mm of spray irrigation or rainfall. Incorporate as soon as possible and within 3-5 days after application. The area should not be disturbed by cultivation for the expected duration of weed control when this method of application is used. If excessive irrigation or rainfall occurs after the application of FIST HydroCap HERBICIDE, resulting in the movement of soil from the top to the bottom of the planting drill, weed control will be reduced. Flood irrigation may not incorporate this product adequately if soils in the treatment area are variable or difficult to wet. For other broadleaf weeds higher rates of atrazine or diuron can be tank mixed with FIST HydroCap HERBICIDE – see the relevant atrazine or diuron labels for details.
	Blue Top (Blue Billygoat Weed) (<i>Ageratum houstonianum</i>)		2.2 L/ha plus atrazine at 1.5 kg a.i./ha or diuron at 1.5 kg a.i./ha	

	<p>Barnyard grass (<i>E. crus-galli</i>), blackberry nightshade (<i>Solanum nigrum</i>), blue top (blue billygoat weed) (<i>Ageratum houstonianum</i>), common sida (<i>Sida rhombifolia</i>), giant/black pigweed (<i>Trianthema portulacastrum</i>), glossy nightshade (<i>Solanum americanum</i>), green amaranth (<i>Amaranthus viridis</i>), Ipomoea spp., liverseed grass (<i>Urochloa panicoides</i>), milkweed (Mexican fire plant) (<i>Euphorbia heterophylla</i>), pigweed (<i>Portulaca oleracea</i>)</p>		<p>2.2 L/ha plus 400 mL/ha imazapic 240 g/L herbicide</p>	<p>Incorporate into the soil either by overhead irrigation, rainfall or mechanical incorporation, to a minimum depth of 5 cm. Incorporate as soon as possible and within 3-5 days after application. Read all directions for use in sugarcane on the Imazapic 240 Herbicide label.</p>
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CROP	WEEDS CONTROLLED	STATE	RATE/TREATED ha	CRITICAL COMMENTS
5. POST PLANT AND FLUSHING				
Combine sown rice	Barnyard grass (<i>Echinochloa</i> spp.), Silvertop Grass (Brown Beetle Grass) (<i>Diplachne reptatrix</i>), Starfruit (<i>Damasonium minus</i>)	Qld, NSW and NT only	2.2 L/ha plus propanil at 1.8 kg a.i/ha	Apply tank mixture up to the 2-leaf stage of Barnyard Grass and 1-leaf stage of Silvertop by ground rig in 70 to 100 L/ha total spray volume. WATER MANAGEMENT: Flush immediately after sowing to enable a good even germination of rice and to ensure the soil surface is sealed. Apply a second flush or permanent flood after 2 days but no later than 5 days after application. To assist in the control of Barnyard Grass, permanent water should be applied as soon as the rice can tolerate it and levels maintained for optimum growth. RICE STAGE: After the first flushing irrigation, the stage of rice at application of this tank mixture is not critical. Timing should be based on the stage of weed growth and water management. However, DO NOT apply to rice in a weakened condition as a result of soil salts, moisture stress, over watering, or any other cause. Some transient leaf burn of the rice may result after application but no long-term effects will result. Rice seed should be covered with at least 1 cm of water after the first flushing irrigation before FIST HydroCap HERBICIDE plus propanil is applied to the germinating rice seed.
Combine sown rice and pasture sod sown rice	Barnyard grass (<i>Echinochloa</i> spp.), Silvertop Grass (Brown Beetle Grass) (<i>Diplachne reptatrix</i>), Starfruit (<i>Damasonium minus</i>) plus Suppression of Annual Sedges (<i>Cyperus</i> spp.)	Qld, NSW and NT only	2.2 or 3.3 L/ha plus paraquat at 200 g a.i/ha	Use the higher rate when sowing into pasture sod sown rice for Annual Sedge control, or when more than 10 days is expected between treatment and permanent water. Apply up to the 3-leaf stage of Barnyard Grass, Silvertop and Sedges, before rice emergence. Apply by ground rig in 70 to 100 L/ha of water total spray volume. WATER MANAGEMENT: Flush immediately after sowing to enable a good even germination of rice. The soil surface must be sealed by a flushing irrigation or rainfall before the application of FIST HydroCap HERBICIDE plus paraquat. Apply a second flush or permanent flood after 1 day but not later than 5 days after the application of FIST HydroCap HERBICIDE plus paraquat. To assist in the control of Barnyard Grass, permanent water should be applied as soon as the rice can tolerate it and levels maintained for optimum growth of rice. RICE STAGE: After the first flushing irrigation, FIST HydroCap HERBICIDE plus paraquat must be applied before rice emergence. DO NOT apply to rice in a weakened condition from causes such as soil salts, moisture stress, over-watering, or any other cause.

CROP	WEEDS CONTROLLED	STATE	RATE/TREATED ha	CRITICAL COMMENTS
6. PRE-TRANSPLANT TREATMENT				
Transplanted cabbage, cauliflower, broccoli and processing tomatoes	See Weed Table D	All States	1.5 to 2.2 L/ha	Apply FIST HydroCap HERBICIDE to a firm seedbed free of ridges, clods and trash between 2 to 7 days before transplanting. Use the higher rates on heavier textured soils or those with a higher organic matter content. For optimum performance incorporate with 12 to 25 mm of spray irrigation (or when rainfall is expected within 1 day) and ensure minimal mechanical disturbance of the seedbed at transplanting. DO NOT apply after transplanting as damage will occur. DO NOT apply where water logging is likely to occur after transplanting or crop stunting will result. DO NOT use FIST HydroCap HERBICIDE on soils with an organic matter content above 6% as inconsistent weed control will occur. Propachlor 480 g/L herbicide may be tank-mixed with FIST HydroCap HERBICIDE prior to transplanting or applied separately after transplanting.
	See Weed Table D plus Wild Radish (<i>Raphanus raphanistrum</i>), Indian Hedge Mustard (<i>Sisymbrium orientale</i>), Turnip Weed (<i>Rapistrum rugosum</i>), Wild Turnip (<i>Brassica tournefortii</i>), Potato Weed (<i>Galinsoga paviflora</i>), Sowthistle (<i>Sonchus oleraceus</i>), Dwarf Amaranth (<i>Amaranthus macrocarpus</i>), Green Amaranth (<i>Amaranthus viridis</i>), Winter Grass (<i>Poa annua</i>), Annual Nettles (<i>Urtica</i> spp.)		1.5 to 1.8 L/ha plus 9 L/ha propachlor 480 g/L herbicide	
Transplanted lettuce	See Weed Table D		1.5 to 2.9 L/ha	

PERENNIAL CROPS

CROP	WEEDS CONTROLLED	STATE	RATE/TREATED ha	CRITICAL COMMENTS
7. PERENNIAL CROPS				
Avocadoes, bananas, citrus, deciduous fruits, lychees, macadamia nut, mangoes, nuts, olives (not grapevines)	Dwarf amaranth, Green amaranth, Annual ryegrass, Asthma plant (<i>Euphorbia hirta</i>), Barnyard grass, Chickweed (<i>Stellaria media</i>), Crowsfoot grass, Deadnettle (<i>Lamium amplexicaule</i>), Fat Hen (<i>Chenopodium album</i>), Pigeon grass, Pigweed (<i>Portulaca oleracea</i>), Prickly lettuce (<i>Lactuca serriola</i>), Sowthistle, Summer grass, Winter grass, Wireweed.	All States	6.5 to 8.7 L/ha	FIST HydroCap HERBICIDE alone or FIST HydroCap HERBICIDE plus simazine is likely to affect the emergence and growth of green manure crops such as oats or beans between rows of trees or vines, if they are sown into the treated band within 12 months of application. Use the higher rate on medium to heavy textured soils and the lower rate on light textured soils. Use a directed spray avoiding spray contact with green bark, fruit and foliage. If applied to freshly transplanted trees or vines, soils should be compacted prior to application of FIST HydroCap HERBICIDE to avoid contact with roots. Crop damage and/or reduced weed control may result if this product is not incorporated successfully. If insufficient rainfall follows within 10 days after application the product must be incorporated over the whole surface area treated through the use of overhead sprinklers or by mechanical means, using appropriate equipment to avoid root damage. Drip irrigation is inadequate for this purpose. A minimum of 10-15 mm of rain or sprinkler irrigation is normally required to incorporate this product into the soil. For best results, soil surface should be free of weeds, surface litter and clods at the time of application.
	As above plus Prairie Grass (<i>Bromus unioloides</i>) and Spotted Medic (<i>Medicago arabica</i>)		8.7 L/ha	If small weeds are present at the time of application, this product should be tank mixed with a knockdown herbicide at the recommended rate. CAUTION: Use of simazine mixtures could lead to crop damage on vines younger than 3 years of age. Refer to the simazine label. DO NOT apply tank mixtures of FIST HydroCap HERBICIDE plus simazine to alkaline soils.
Citrus, Deciduous fruits, and Nuts (not grapevines)	As above plus Cobbler's pegs (<i>Bidens pilosa</i>), Curious Weed (<i>Schkuhria pinnata</i>), Stinking Roger (<i>Tagetes minuta</i>)		6.5 L/ha plus simazine at 800 g a.i/ha	
	As above plus Caltrop (<i>Tribulus terrestris</i>)		8.7 L/ha plus simazine at 1 kg a.i/ha	

CROP	WEEDS CONTROLLED	STATE	RATE/TREATED ha	CRITICAL COMMENTS
7. PERENNIAL CROPS (continued)				
Established lucerne seed crops only	Fat Hen (<i>Chenopodium album</i>), Summer Grass (<i>Digitaria anguinalis</i>)	NSW, ACT and SA only	2.2 L/ha	During the spring months prior to irrigation, the lucerne stand should be grazed down hard to produce a low trash soil surface. Apply FIST HydroCap HERBICIDE and incorporate treatment by 12 to 25 mm of spray irrigation or rainfall within one day of application.
	As above plus Pigeon Grass (<i>Setaria</i> spp.)		3.3 L/ha	
Eucalypt forestry plantations	Amaranthus (<i>Amaranthus</i> spp.), annual rye grass, asthma plant (<i>Euphorbia hirta</i>), barnyard grass (<i>Echinochloa crus-galli</i>), chickweed (<i>Stellaria media</i>), crowsfoot grass (<i>Eleusine indica</i>), deadnettle (<i>Lamium amplexicaule</i>), fat hen (<i>Chenopodium album</i>), pigeon grass (<i>Setaria</i> spp.), pigweed (<i>Portulaca oleracea</i>), prickly lettuce (<i>Lactuca serriola</i>), stagger weed (<i>Stachys arvensis</i>), sow thistle (<i>Soncus oleraceus</i>), summer grass (<i>Digitaria ciliaris</i>), winter grass (<i>Poa annua</i>), wireweed (<i>Polygonum aviculare</i>)	All states	6.5 L to 8.7 L/ha	PRE-PLANTING: Apply 2-7 days prior to transplanting. Use the higher rate on heavier textured soils or soils with higher organic matter. Mechanical disturbance should be minimised during planting to optimise performance. POST-PLANTING: Apply immediately following planting, before emergence of weeds. Repeat applications may be made as directed sprays to provide pre-emergence control of weeds. Emerged weeds should be controlled with carefully directed applications of a non-selective herbicide or over-the-top application of a selective herbicide. If applied to freshly transplanted trees, soils should be compacted prior to application to avoid contact with roots. Weed control may be reduced if rainfall or irrigation does not occur within 10 days of application. Flood irrigation may reduce control.
Pyrethrum Pre-emergence crops	See Weed Table D	Tas only	1.5 to 2.2 L/ha	Apply this product to seedbed within 10 days of sowing, prior to pyrethrum emergence. Apply at the lower rates on sandy soils. Incorporate with 12-25 mm of rainfall or irrigation within 1 day of application for optimum performance.
Pyrethrum Post-emergence crops			1.5 to 3.6 L/ha	Apply this product prior to weed germination at any stage of pyrethrum growth from 2 true leaf stage to pre-flowering, as advised by qualified crop advisor. Seek advice from qualified crop advisor before applying follow up applications in any one year. Incorporate with 12-25 mm of rainfall or irrigation within 1 day of application for optimum performance.

<p>Teatree (<i>Melaleuca alternifolia</i>)</p>	<p>Weed Table B Plus Dwarf Amaranth, Green Amaranth, Annual Ryegrass, Barnyard Grass, Chickweed (<i>Stellaria media</i>), Crowsfoot grass, Deadnettle (<i>Lamium amplexicaule</i>), Fat Hen, Pigeon Grass, Pigweed, Prickly Lettuce (<i>Lactuca serriola</i>), Sowthistle, Summer Grass, Winter Grass, Wireweed</p>	<p>NSW, ACT, QLD, SA, and NT only</p>	<p>3.3 to 6.5 L/ha</p>	<p>DO NOT tank mix with simazine as crop damage may result. For best results the soil surface should be free of weeds, surface litter and clods at the time of application.</p> <p>PRE-TRANSPLANTING: Apply 2 to 7 days prior to transplanting seedlings. Use the higher rates on heavier textured soil or soils with higher organic matter. Mechanical disturbances should be minimised during planting to optimise performance. Avoid contact of treated soil with seedling roots.</p> <p>POST-PLANTING: Apply immediately following planting and pre-emergence of weeds. If applied to freshly transplanted trees, soils should be compacted prior to application of FIST HydroCap HERBICIDE to avoid contact with the roots. Weed control may be reduced if rainfall or irrigation does not occur within 10 days of application. Flood irrigation may reduce control.</p>
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CROP	WEEDS CONTROLLED	STATE	RATE/TREATED HA	CRITICAL COMMENTS
8. ESTABLISHED TURF				
Turf Warm Season Species: Bahia Grass, Buffalo Grass, Couch, Kikuyu, Salt water Couch, and Zoysia Grass Turf	Crowsfoot (Crab Grass) (<i>Eleusine indica</i>), Summer Grass (<i>Digitaria anguinalis</i>), Winter Grass (<i>Poa annua</i>)	All States	3.3 L/ha or 33 mL/100 m ²	Incorporate by 10 to 15 mm of spray irrigation or rainfall as soon as possible within one day of application. Apply once every 10 weeks from early September to the end of February.
Queensland Blue Couch, Hybrid Couch c.v. Tifdwarf			2.2 L/ha or 22 mL/100 m ²	
Turf Cool Season Species: Kentucky Blue Grass			3.3 L/ha or 33 mL/100 m ²	The product should be incorporated by 10 to 15 mm of spray irrigation or rainfall as soon as possible within one day of application.
Bent Grass, Perennial Ryegrass			2.2 L/ha or 22 mL/100 m ²	Apply FIST HydroCap HERBICIDE only once per year to control weeds in Perennial Rye Grass and Bent Grass.

CROP	WEEDS CONTROLLED	STATE	RATE/TREATED HA	CRITICAL COMMENTS
9. IRRIGATION CHANNELS				
Cotton Irrigation Banks, Channels and Drains	Barnyard Grass (<i>Echinochloa</i> spp.), Silvertop Grass (Brown Beetle Grass) (<i>Diplachne reptatrix</i>)	Qld and NSW only	3.3 to 6.5 L/ha	Use the lower rate when short-term control is required. Apply in late winter or early spring after regrading or clearing channels. The soil should be loose and free of large clods. If 25 to 50 mm of rainfall has not fallen within 14 days of application the channel should be filled with water and allowed to stand for 1 day. The water in the channel should then be drained off and used to pre-irrigate cotton fields. DO NOT use water in channel to irrigate or pre-irrigate susceptible crops.
			4.4 L/ha plus diuron at 8.1 kg a.i./ha	Use this mixture where long term control is required or a broader weed spectrum is present. See diuron label for details. Water in the channel should NOT be used to irrigate or pre-irrigate susceptible crops.

WEED TABLE A

IN COTTON, COW PEAS, MUNG BEANS, NAVY BEANS, PEANUTS, PIGEON PEAS, SOYBEANS, SUNFLOWERS– with pre-plant incorporated treatment (double incorporation)

The following weeds are controlled:

Barnyard grass (*Echinochloa* spp.), Button grass (*Dactyloctenium radulans*), Common heliotrope (*Heliotropium europaeum*), Crested goosefoot (*Chenopodium cristatum*), Crowsfoot grass (*Eleusine indica*), Dwarf amaranth (*Amaranthus macrocarpus*), Early spring grass (*Eriochloa* spp.), Fat Hen (*Chenopodium album*), Green amaranth (*Amaranthus viridis*), Liverseed grass (*Urochloa panicoides*), Mexican clover (*Richardia brasiliensis*), Mossman River grass (*Cenchrus echinatus*), Native millet (*Panicum decompositum*), Pale pigeon grass (*Setaria glauca*), Paspalidium (*Paspalidium* spp.), Pepper grass (*Panicum whitei*), Pigweed (*Portulaca oleracea*), Queensland blue grass (*Dichanthium sericeum*), Red Flinders grass (*Iseilema vaginiflorum*), Scarlet pimpernel (*Anagallis arvensis*), Small burr grass (*Tragus australianus*), Stink grass (*Eragrostis cilianensis*), Weeping love grass (*Eragrostis parviflora*), Wireweed (*Polygonum aviculare*)

Useful suppression of the following weeds is also obtained.

Blackberry nightshade (*Solanum nigrum*), Caltrop (*Tribulus terrestris*), Common verbena (*Verbena officinalis*), Mintweed (*Salvia reflexa*), Peppergrass (*Lepidium* spp.), Stagger weed (*Stachys arvensis*)

WEED TABLE B

IN COTTON, SUNFLOWERS, TEATREE AND MAIZE – with post-plant pre emergence surface treatment (FIST HydroCap HERBICIDE alone)

The following weeds are controlled:

Barnyard grass (*Echinochloa* spp.), Button grass (*Dactyloctenium radulans*), Common heliotrope (*Heliotropium europaeum*), Crested goosefoot (*Chenopodium cristatum*), Crowsfoot grass (*Eleusine indica*), Dwarf amaranth (*Amaranthus macrocarpus*), Early spring grass (*Eriochloa* spp.), Green amaranth (*Amaranthus viridis*), Liverseed grass (*Urochloa panicoides*), Mexican clover (*Richardia brasiliensis*), Mossman River grass (*Cenchrus echinatus*), Native millet (*Panicum decompositum*), Pale pigeon grass (*Setaria glauca*), Paspalidium (*Paspalidium* spp.), Pepper grass (*Panicum whitei*), Pigweed (*Portulaca oleracea*), Queensland bluegrass (*Dichanthium sericeum*), Red flinders grass (*Iseilema vaginiflorum*), Scarlet pimpernel (*Anagallis arvensis*), Small burrgrass (*Tragus australianus*), Stinkgrass (*Eragrostis cilianensis*), Weeping love grass (*Eragrostis parviflora*), Wireweed (*Polygonum aviculare*)

Useful suppression of the following weeds is also obtained.

Caltrop (*Tribulus terrestris*), Common sowthistle (*Sonchus oleraceus*), Common verbena (*Verbena officinalis*), Mintweed (*Salvia reflexa*), Peppergrass (*Lepidium* spp.), Stagger weed (*Stachys arvensis*)

WEED TABLE C

IN MAIZE – with post-plant pre-emergence surface treatment of FIST HydroCap HERBICIDE plus tank mix with atrazine.

The following weeds are controlled in addition to those controlled by FIST HydroCap HERBICIDE alone:

Bathurst burr (*Xanthium spinosum*), Caltrop (*Tribulus terrestris*), Mintweed (*Salvia reflexa*), Noogoora burr (*Xanthium pungens*), Paddy melon (*Cucumis* spp.), Thornapple (*Datura* spp.)

The following weeds are not controlled by FIST HydroCap HERBICIDE or the mixture with atrazine:

Bindweed (*Convolvulus* spp.), Nut grass (*Cyperus rotundus*), Wandering jew (*Commelina* spp.)

WEED TABLE D

IN CARROTS, PROCESSING PEAS, FRENCH BEANS, PYRETHRUM, TRANSPLANTED CABBAGE, CAULIFLOWER, BROCCOLI, LETTUCE, PROCESSING TOMATOES – with pre-emergence surface treatment after planting or before transplanting as directed and incorporated by spray irrigation.

The following weeds are controlled:

Awnless barnyard grass (*Echinochloa colona*), Bittercress (*Coronopus didymus*), Bladder ketmia (*Hibiscus trionum*), Chickweed (*Stellaria media*), Deadnettle (*Lamium amplexicaule*), Fat hen (*Chenopodium album*), Green fat hen (*Chenopodium murale*), Pigweed (*Portulaca oleracea*), Prickly lettuce (*Lactuca serriola*), Shepherd's purse (*Capsella bursa-pastoris*), Wireweed (*Polygonum aviculare*)

Useful suppression only of the following weeds at the lower rates. Higher rates or tank mixtures are required for complete control (see Directions for Use table). Annual nettles (*Urtica* spp.), Blackberry nightshade (*Solanum nigrum*), Common sowthistle (*Sonchus oleraceus*), Fumitory (*Fumaria* spp.), Indian Hedge Mustard (*Sisymbrium orientale*), Turnip weed (*Rapistrum rugosum*), Wild radish (*Raphanus raphanistrum*), Winter grass (*Poa annua*)

GENERAL INSTRUCTIONS:

FIST HydroCap HERBICIDE is selective for the control of most annual grasses and certain broadleaf weeds. As FIST HydroCap HERBICIDE controls weeds by inhibiting seedling development, it will not control established weeds. For the best results, seedbeds should be free of weeds, trash and clods at the time of application. Soils containing a high percentage of organic matter can result in poor control. It is recommended that application to these soils (greater than 6% organic content) should be avoided.

Crop injury may result if cold wet weather follows planting or if FIST HydroCap HERBICIDE is applied to a poorly prepared seedbed. With the return of favourable growing conditions (warm weather), the crop will usually recover and resume normal growth.

Caution: Prolonged periods of rainfall and/or excessive soil moisture at or following application may delay breakdown of FIST HydroCap capsules, resulting in reduced weed control.

NOTE: FIST HydroCap HERBICIDE may stain (yellow) any objects it contacts. Keep all objects, etc. that are not to be stained well clear of the product and spray.

MIXING

Shake, invert or roll container several times before use. Put half the required volume of water in spray tank and start agitation. When using FIST HydroCap HERBICIDE alone, add FIST HydroCap HERBICIDE to partially filled tank and then add the remainder of water. Mix thoroughly.

When using FIST HydroCap HERBICIDE in tank mixes with atrazine or diuron, mix these products as indicated on the relevant label adding the FIST HydroCap HERBICIDE last, and then complete filling of the tank. Maintain good agitation at all times until spraying is completed. If the spray mixture is allowed to settle, thorough agitation is essential to re-suspend the mixture before spraying is resumed. Note that when tank mixing FIST HydroCap HERBICIDE with paraquat and glyphosate herbicides, the FIST HydroCap HERBICIDE should be thoroughly mixed in the spray tank first, before adding either a paraquat or glyphosate product.

APPLICATION METHOD:

Ground Application:

Use conventional sprayers with either mechanical or by-pass agitation. Flat fan nozzles should be used. Spray equipment should be correctly calibrated to ensure proper application. If applying FIST HydroCap HERBICIDE in tank mix combination with atrazine or diuron, nozzle screens must be no finer than 50 mesh. Apply the recommended quantity of FIST HydroCap HERBICIDE in 50-200 litres of water per hectare. Where pre-emergence surface treatment is used, the higher rates of water per hectare are recommended.

Incorporation:

- a. FIST HydroCap HERBICIDE works best if thoroughly mixed with soil either mechanically or by irrigation or rainfall. The aim of incorporation is to produce an even band of herbicide to intercept germinating weed seeds.
- b. Post-plant pre-emergence surface applications of FIST HydroCap HERBICIDE alone, or as a tank mixture, are most effective in controlling weeds when adequate rainfall occurs or irrigation is applied within 7-10 days after treatment to achieve incorporation. If no rain or irrigation is received within 7-10 days, light mechanical incorporation is required for optimum weed control, except when used on maize, carrots and rice.
- c. Maize is tolerant to FIST HydroCap HERBICIDE either alone or in mixtures with atrazine if the seed germinates below the chemically treated band. Maize, carrots and rice are NOT tolerant to FIST HydroCap HERBICIDE if it is in direct contact with the seed.

Cereal Seed Dressings

Some fungicidal seed dressings can shorten coleoptile length and this can affect emergence particularly if seed is sown too deep. When these cereal seed dressings are used in FIST HydroCap HERBICIDE treated areas it is very important to ensure there is good seed depth control and to sow just below (1cm) the chemically treated band. Consult your local Department of Agriculture Agronomist for further advice.

Weather Conditions at Planting

Crop injury may result if cold weather follows planting. With the return of favourable growing conditions (warm weather), crops usually recover and resume normal growth. In cereal, prolonged cold wet conditions during germination and emergence can result in wheat or barley coleoptiles remaining in the treated band for an extended period. This can reduce emergence.

COMPATIBILITY

FIST HydroCap HERBICIDE is physically compatible with the following herbicides: atrazine, diuron simazine, prometryne, fluometuron, fluometuron plus prometryne, ametryne, paraquat, propanil, linuron, glyphosate and propachlor. If tank mixing, observe the directions under Mixing.

FOLLOWING CROPS

In the event of crop failure the soil should be cultivated to a minimum depth of 15 cm to ensure any residues are evenly dispersed throughout the soil. If a maize crop fails due to weather conditions or some other reason, maize can be replanted the same year without adverse effects but seeding depth must be below the retilled area.

Following Crop	MINIMUM INTERVAL AFTER APPLICATION OF FIST HydroCap HERBICIDE, before sowing		
	2 MONTHS	5 MONTHS	12 MONTHS
Carrots, Celery, French Beans, Parsley, Parsnips, Peas and Potatoes	✓		
Transplanted: Brassicas, Lettuce, Tomatoes and Capsicum	✓		
Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Cucumbers, Lettuce, Leeks, Melons, Onions, Pumpkins, Radish, Sweet Corn, Squash, Turnips		✓	
Beetroot (Red Beet), Poppy, Silver Beet, Spinach			✓

Earliest Day for Re-Entry Post Application of Fist HydroCap Herbicide

Crop	Exposure risk	Activity type	Earliest day for re-entry
Fruit and nut trees	Low	Hand weeding, propping, orchard maintenance	0
	Low/Medium	Transplanting	6
	Medium	Scouting, training	15
Eucalypt forestry	Low	Hand weeding, propping, forestry maintenance	0
	Low/Medium	Transplanting	6
	Medium	Scouting, training	15
	High	Hand held irrigation	26
	Very High	Seedling production	No re-entry before Day 38
Pyrethrum	Low	Hand weeding, thinning	0
	Low-Medium	Transplanting	0
	High	Hand harvesting	12
	High	Hand irrigation	17
Rice	Low	Hand weeding, thinning	0
	High	Scouting	8
Onions (minimum foliage)	Medium	Scouting, thinning	0
	High	Hand weeding	6
	High	Hand held irrigation	9
Established turf		All activities	0