

STACATO

MAPP 12675

A foliar applied herbicide for the control of annual and perennial grassland and broad-leaved weeds before sowing or planting all crops.

For use pre-emergence and pre-harvest in cereals and certain other crops, destruction of grassland, and in set-aside, stubbles, orchards, forestry, industrial, amenity and non-crop areas.

For use on hard surfaces (including railway ballast).

This product is an soluble concentrate containing 360 g/l glyphosate present as 480 g/l (41.1% w.w.) of the isopropylamine salt of glyphosate and polyoxyethylene amine surfactant

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work

Contents e XX litres

PROTECT FROM FROST



HARMFUL



Dangerous for the environment

HARMFUL BY INHALATION

RISK OF SERIOUS DAMAGE TO EYES.

TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

WEAR EYE FACE PROTECTION

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER & SEEK MEDICAL ADVICE.

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY.

USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION.

Sipcam UK Limited

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Safety Data Sheet available for the professional user on request

To avoid risks to man and the environment, comply with the instructions for use.

Lot number/production date:

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COMPLIANCE WITH THE FOLLOWING CONDITIONS OF USE AND ALL SAFETY PRECAUTIONS MARKED* IS A LEGAL REQUIREMENT

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/INDUSTRIAL/FORESTRY HERBICIDE

Crops/situations:

Wheat, barley, oats, combining pea, vining pea, field bean;
Oilseed rape, mustard, linseed;
Sugar beet, swede, turnip, bulb onion, leek, asparagus;
All edible crops (stubble), all non-edible crops (stubble);
All edible and non –edible crops (destruction, before sowing/planting);
Grassland;
Apple, pear, plum, cherry, damson;
Green cover on land not being used for crop production;
Natural surfaces not intended to bear vegetation, permeable surfaces overlying soil, hard surfaces;
Amenity vegetation;
Forest nursery, forest (weed control, stump application and chemical thinning).

Maximum individual dose:	}
Maximum number of treatments:	} Full details are given in Statutory Area
Latest time of application:	} on the attached leaflet
Other specific restrictions:	} (see Crop Specific Information - marked #)

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS FOR USE BEFORE USE

SAFETY PRECAUTIONS

Operator protection

* Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

*WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACE-SHIELD) when handling the concentrate and when handling contaminated surfaces.

*WEAR SUITABLE PROTECTIVE CLOTHING (COVERALL), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using hand-held sprayers and hand-held rotary atomisers.

*WEAR SUITABLE PROTECTIVE CLOTHING (COVERALL), SUITABLE PROTECTIVE GLOVES, RUBBER BOOTS AND FACE PROTECTION (FACESHIELD) when using weed wiper equipment, making cut stump treatments and using stem injection equipment.

* However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WHEN USING, DO NOT EAT, DRINK OR SMOKE.

WASH HANDS AND EXPOSED SKIN before eating and drinking or smoking and after work.

Environmental protection

DO NOT CONTAMINATE SURFACE WATERS OR DITCHES with chemical or used container *[do not clean application equipment near surface water/avoid contamination via drains from farmyards and roads]*.

Storage and disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS.

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinse three times. Add washings to sprayer at time of filling and dispose of safely.

Medical advice

Medical guidance is available on a 24 hour basis for doctors from the National Poisons Information Service on 0870 600 6266.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

Warnings

EXTREME CARE SHOULD BE TAKEN TO AVOID SPRAY DRIFT AS THIS CAN SEVERELY DAMAGE.

DO NOT MIX, STORE OR APPLY STACATO IN GALVANISED OR UNLINED STEEL CONTAINERS OR SPRAY TANKS.

DO NOT leave spray mixtures in tank for long periods and make sure tanks are WELL VENTED.

Restrictions

A period of at least 6 hours and preferably 24 hours rain-free must follow application of Stacato.

Do not spray onto weeds which are naturally senescent or where growth is impaired by drought, high temperatures, a covering of dust, flooding or frost, at or immediately after application otherwise poor control may result.

Do not spray in windy conditions as drift onto desired crops or vegetation could severely damage or destroy them.

After application, large concentrations of decaying foliage, stolons, roots or rhizomes should be dispersed or buried by thorough cultivation before crop drilling.

Applications of lime, fertiliser, farmyard manure and pesticides should be delayed until 5 days after application of Stacato.

Weeds controlled

Stacato is a foliar acting herbicide which controls annual and perennial grasses and most broad-leaved weeds when used as directed. It is important that all weeds are at the correct growth stage when treated, otherwise some re-growth may occur and this will need re-treatment.

Apply Stacato herbicide once grasses and broad-leaved weeds have emerged and they have ACTIVELY GROWING green leaves

- PERENNIAL GRASSES must have a full emergence of healthy, green leaf. (Common Couch, for example, becomes susceptible at the onset of tillering and new rhizome growth commences which usually occurs when plants have 4-5 leaves, each with 10-15cm of new growth).

- PERENNIAL BROAD-LEAVED WEEDS are most susceptible around the flowering stage.
- ANNUAL GRASSES AND BROAD-LEAVED WEEDS should have at least 5 cm of leaf, or 2 expanded true leaves, respectively. In set-aside, annual grasses are best treated at full ear emergence, or before stem elongation. Application during stem extension phase of annual grasses e.g. Black-grass and Brome species on set-aside between the end of April and end of May, may result in poor control and require re-treatment.
- BRACKEN should be treated after frond tips are unfurled, but pre-senescence.
- OTHER SPECIES - recommendations for specific Areas of Use are given in the Recommendation Tables, pages xx-xx. *Printers note: insert page no.s*
- This product will not give an acceptable level of control of Horsetails (*Equisetum arvense*) – repeat treatment will be necessary.

Following Crops

Upon soil adsorption the herbicidal properties of Stacato are lost permitting the drilling of crops 48 hours after application.

Planting of trees, shrubs etc may take place 7 days after application. Grass may be sown from 5 days after treatment.; see the 'Recommendation tables' for specific restrictions on direct drilled crops.

#Crop specific information

COMPLIANCE WITH THE FOLLOWING CONDITIONS OF USE AND ALL SAFETY PRECAUTIONS MARKED* IS A LEGAL REQUIREMENT			
Crops/situations:	Maximum individual dose (litres product/ hectare):	Maximum total dose (litres of product/ Hectare)	Latest time of application:
Pre-harvest of winter wheat, winter barley, winter oats, spring wheat, spring barley, spring oats, durum wheat, combining peas, field beans	4.0	4.0 l/ha/crop	7 days before harvest
Post planting and pre-emergence of listed cereals, oilseed rape, combining peas, vining peas, field beans, mustard, linseed, sugar beet, swedes, turnips, bulb onions, leeks	1.5	1.5 l/ha/crop	Pre-emergence
Asparagus	5.0	5.0	Pre-emergence
Pre-harvest of oilseed rape and linseed	4.0	4.0 l/ha/crop	14 days before harvest
Pre-harvest of mustard	4.0	4.0 l/ha/crop	8 days before harvest
Stubbles (of all crops) Either:	4.0	4.0 l/ha/year	5 days before drilling or planting of the following crop
	or: 1.5	1.5 l/ha/year	2 days before the drilling or planting of the following crop or 24 hours before cultivating
Permanent grassland (destruction) Rotational grass (destruction)	6.0	6.0 l/ha/year	5 days before harvest, grazing or drilling
Apple and pear orchards	5.0	5.0 l/ha/year	After harvest but before green cluster stage
Cherry, plum and damson orchards	5.0	5.0 l/ha/year	After harvest but before white bud stage
All edible and non-edible crops (destruction, before sowing/planting).	5.0	5.0 l/ha/year	5 days before drilling or planting of the following crop For applications up to 1.5L/ha: 2 days before the drilling or planting of the following crop or 24 hours before

			cultivating
Green cover on land temporarily removed from production	6.0	6.0 l/ha/year	24 hours before cultivating
Natural surfaces not intended to bear vegetation, permeable surfaces overlaying soil, hard surfaces	5.0	-	-
Amenity vegetation	5.0	-	-
Forestry, forest nursery: Weed control Stump application Chemical thinning (by injection)	10.0 200ml/litre of water (20% solution of product in water) 2 ml per 10cm diameter (or less) of tree		

Other specific restrictions:

For hydraulic knapsack sprayers the maximum individual dose must not exceed 22.5g/l glyphosate.

When applying through rotary atomisers the spray droplet spectra produced must be of a minimum Volume Median Diameter (VMD) of 200 microns.

Weed wipers may be used in any crop where the wiper or chemical does not touch the growing crop.

For weed wiper applications, the maximum concentrations must not exceed the following:

Weed wiper Mini	1:2 dilution with water	} Refer to weed wiper guidance under 'Mixing & Spraying' section
Other wipers	1:1 dilution with water	

For stump application, the maximum concentration must not exceed 200 ml of product per litre of water (i.e., a 20% solution).

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS FOR USE BEFORE USE

RECOMMENDATION TABLES

AREA OF USE	TARGET WEEDS/ USAGE	CROP/ SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE			
PRE-HARVEST ARABLE CROPS	Common Couch	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	1 to 25 shoots/m ²	2.0 (+)	80-250 l/ha*	Grain/seed moisture must not exceed 30% at spraying. Harvest intervals: CEREALS, PEAS, BEANS 7+ days OILSEED RAPE 14-21 days LINSEED 14-28 days MUSTARDS 8-10 days			
			Up to 75 shoots/m ²	3.0					
			Over 75 shoots/m ²	4.0					
		OILSEED RAPE AND MUSTARDS	Up to 75 shoots/m ²	3.0			100-250 l/ha#		
			Over 75 shoots/m ²	4.0					
	COMBINING PEAS AND FIELD BEANS	Up to 75 shoots/m ²	3.0	80-250 l/ha*					
		Over 75 shoots/m ²	4.0						
	LINSEED	Up to 75 shoots/m ²	3.0	80-250 l/ha*					
		Over 75 shoots/m ²	4.0						
	Perennial broad-leaved weeds, other perennial grasses	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	All levels of all species	4.0	80-250 l/ha*	Desiccate LINSEED when seeds are light brown and capsules brown; stems/leaves may be yellow/green. Effects on brewing and baking have not been tested. Consult grain merchant or processor before use. At Harvest management rates, ANNUAL NETTLE, VOL. POTATO, ROSEBAY WILLOW HERB and POLYGONUM WEEDS will not be susceptible. WHEAT crops, WHEAT VOLUNTEERS and BROAD-LEAVED WEEDS may require up to 14 days before harvest.			
OILSEED RAPE AND MUSTARDS			All levels of all species	4.0			100-250 l/ha#		
			COMBINING PEAS FIELD BEANS	All levels of all species				4.0	80-250 l/ha*
				LINSEED				All levels of all species	

AREA OF USE	TARGET WEEDS/ USAGE	CROP/ SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
PRE-HARVEST ARABLE CROPS (continued)	Harvest management	WINTER and SPRING WHEAT, DURUM WHEAT, WINTER and SPRING BARLEY and WINTER and SPRING OATS	Annual grasses, crop stems and leaves Annual broad leaved weeds	1.0 (+) 1.5 (+)	80-250 l/ha*	* Rotary atomisers may be used at a water volume of 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns. # Use higher volumes for dense canopies DO NOT TREAT CROPS GROWN FOR SEED.
	Crop desiccation and annual weeds prior to direct combining	OILSEED RAPE AND MUSTARDS	All levels/species	3.0	100-250 l/ha#	
		LINSEED	All levels/species	3.0	80-250 l/ha	

AREA OF USE	TARGET WEEDS/ USAGE	CROP/ SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
ALL EDIBLE AND NON EDIBLE CROPS (DESTRUCTION, BEFORE PLANTING)	-	Vegetation management	Annual weeds Perennial grasses Perennial broad-leaved weeds	1.5 4.0 5.0	80-250 l/ha* or hand-held equipment (p.XX)	DO NOT USE UNDER POLYTHENE OR GLASS Apply the annual weed dose at least 2 days before sowing/planting. Apply the perennial weed dose at least 5 days before sowing/planting. *Rotary atomisers may be used at a water volume of 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns Do not use in or alongside hedgerows
POST SOWING/ PLANTING, PRE-EMERGENCE OF THE CROP	Volunteer cereals and annual weeds	LISTED CEREALS, OILSEED RAPE, MUSTARD, LINSEED, PEAS, FIELD BEANS, SUGAR BEET, SWEDE, TURNIP, BULB ONION and LEEK	All levels/species	1.5	80-250 l/ha*	CAUTION - Ensure that spraying precedes ANY crop emergence. *Rotary atomisers may be used at a water volume of 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.
	Annual weeds	ASPARAGUS	All levels/species	1.5		CAUTION - Ensure that spraying precedes ANY new spear emergence
	Perennial grasses			4.0		
	Perennial broad-leaved weeds			5.0		

AREA OF USE	TARGET WEEDS/ USAGE	CROP/ SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE		
STUBBLES PRE-SOWING and PRE-PLANTING	Common Couch	BEFORE ALL CROPS EXCEPT ORCHARDS	Up to 75 shoots/m ²	3.0	80-250 l/ha*	<p>Do not cultivate immediately before spraying.</p> <p>For PERENNIAL weed control, allow:</p> <ul style="list-style-type: none"> - 21+ days growth before spraying in spring - VOLUNTEER POTATOES to make ample top growth - 5 days before cultivating or drilling <p>For ANNUAL weed control, allow:</p> <ul style="list-style-type: none"> - 24 hours before cultivating - 48 hours before drilling <p>Allow 7 days before planting trees</p> <p>* Rotary atomisers may be used at a water volume of 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.</p>		
	Other perennial grasses, volunteer potatoes (autumn only)		Over 75 shoots/m ²	4.0			All levels of all species	4.0
	Volunteer cereals and annual weeds		All levels of all species	1.5 (+)			All levels of all species	5.0
	Perennial broad leaved weeds		All levels of all species	5.0			All levels of all species	5.0
	Perennial grasses and broad leaved weeds	BEFORE ORCHARD PLANTING	Arable weeds	4.0			Pasture weeds	5.0

AREA OF USE	TARGET WEEDS/ USAGE	CROP/ SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
GREEN COVER ON LAND NOT BEING USED FOR CROP PRODUCTION EG "SET ASIDE"	Common Couch	BEFORE or DURING REMOVAL FROM PRODUCTION e.g. prior to growing a set aside mixture	Up to 75 shoots/m ²	3.0	80-250 l/ha* or Hand-held equipment (p.X) or Tractor mounted weed wiper (p.XX)	Before using on land taken out of production as part of a grant aided scheme, ensure compliance with the management rules of that scheme. Do not 'top' or cultivate immediately before application. For PERENNIAL weed control, allow:- - 21+ days growth before spraying in spring - 5 days before cultivating or drilling. For ANNUAL weed control, allow: - 24 hours before cultivating. Do not direct drill after set-aside. Avoid applications during stem elongation as reduced control and re- spray is likely *Rotary atomisers may be used at a water volume of 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns. Best control of annual grasses is achieved between full ear emergence and senescence. + Only for weeds listed as per grassland destruction application rate table below.
	Perennial broad- leaved weeds and other perennial grasses		Over 75 shoots/m ²	4.0		
	Annual weeds - Early autumn/spring - Late spring/summer		All levels/species	4.0		
			All levels/species All levels/species	1.5 3.0		
	Natural regeneration and cover crop destruction	AFTER SHORT ROTATION or LONG TERM REMOVAL FROM PRODUCTION	Annual weeds only	3.0	150-250 l/ha*	
		Perennial grasses	4.0			
		Perennial broad- leaved weeds	5.0			
		Perennial broad- leaved weeds as listed below.	6.0+			

AREA OF USE	TARGET WEEDS/ USAGE	CROP/SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
PERMANENT GRASSLAND (DESTRUCTION)	Short rotation Ryegrass, longer leys and permanent pasture	GRASS	Short rotation Ryegrass with annual weeds	3.0	150-250 l/ha*	Treat EITHER before grazing/mowing in June-Oct, when growth is 30-60 cm, not dense and lacking mature seeds, OR regrowth after grazing/mowing.
ROTATIONAL GRASS (DESTRUCTION)			Leys 2-4 years old with perennial grass weeds	4.0		Select the application rate which controls/destroys the least susceptible weed and grass species present in the sward.
			Long leys 4-7 years old with perennial broad- leaved weeds	5.0		Grass may be conserved or grazed by cattle, dairy cows or sheep 5+ days after spraying. REMOVE POISONOUS PLANTS BEFORE GRAZING/MOWING.
			Permanent pasture	6.0		ONLY direct drill grass and clover EITHER into 1-2 year leys without mat, 5+ days after spraying, OR long leys with some mat, in the spring following autumn application.
			See weed table below			* Rotary atomisers may be used at a water volume of 40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.

APPLICATION RATES FOR GRASSLAND DESTRUCTION

3.0 l/ha		4.0 l/ha		5.0 l/ha		6.0 l/ha	
Annual Meadow-grass	Meadow Fescue	Black Bent	Creeping Soft-grass	Bracken**	Red Clover	Common Ragwort	Nardus (Mat grass)
Common Chickweed	Meadow Foxtail	Broad-leaved Dock	Curled Dock	Common Sorrel	Sedges	Hard Rush	Red Fescue
Common Mouse-ear	Rough Meadow-grass	Cock's Foot	Perennial Rye-grass	Common Nettle	Sheep's Sorrel	Heath Rush	White Clover*
Dock seedlings	Speedwell species	Common Bent	Plantains	Creeping Buttercup*	Soft Rush	Jointed Rush	Yellow Rattle
Italian Rye-grass	Timothy	Common Couch	Soft Brome	Creeping Thistle	Spear Thistle	Molinia (Purple Moor-grass)	Sheep's Fescue
Mayweed species		Creeping Bent	Yorkshire Fog	Daisy	Tufted Hair-grass		
				Dwarf Thistle	Yarrow		
				Perennial Sow-thistle			

* White Clover is best cut in June and sprayed one month later.

** At full frond expansion

AREA OF USE	TARGET WEEDS/USAGE	CROP/SITUATION	WEED INFESTATION	APPLICATION RATE l/ha	WATER VOLUME	APPLICATION TIMING AND GUIDANCE
NATURAL SURFACES NOT INTENDED TO BEAR VEGETATION, PERMEABLE SURFACES OVERLYING SOIL, HARD SURFACES	Including roadsides, paths, hard surfaces (including railway ballast) and along fences and walls	Vegetation management	Annual weeds	1.5	80-400 l/ha*	Use areas include: Roadsides, paths, hard surfaces and along fences and walls and total weed control on industrial sites. Hydraulic sprayers, rotary atomisers or weed wipers may be used. DO NOT USE IN OR ALONGSIDE HEDGEROWS. * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns. Do not use under polythene or glass.
			Perennial grasses and broad leaved weeds	4.0- 5.0		
AMENITY VEGETATION	Vegetation management	Areas of semi-natural or ornamental vegetation including trees. Areas of bare soil around ornamental plants or areas intended for ornamental planting.	Annual weeds	1.5	80-400 l/ha*	Hydraulic sprayers, rotary atomisers or weed wipers may be used DO NOT USE IN OR ALONGSIDE HEDGEROWS. * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns. Do not use under polythene or glass.
			Perennial grasses and broad leaved weeds	4.0 - 5.0		
ORCHARDS	Perennial grasses and broad-leaved weeds	WITHIN ORCHARDS OF APPLE, PEAR, PLUM ,CHERRY OR DAMSON	All levels of most species	5.0	200-400 l/ha	Trees must have been established for 2 years before spraying. Spray AFTER autumn leaf-fall and BEFORE: Apples, pears - green cluster stage Stone fruit - white bud stage Avoid contact with tree branches and trunks above 30 cm from the ground. Treat suckers in late spring only.
	Root suckers	-	All species	5.0		

Forestry weed control

Stacato can be used for site preparation and for weed control in planted out trees.

AREA OF USE	TARGET WEEDS/USAGE	WEED INFESTATION	APPLICATION RATE L/HA.	WATER VOLUME	APPLICATION GUIDANCE
Forestry: - Pre-planting	Arable land, planting, replanting, & grassland areas	Arable weeds	4.0	80-250 l/ha *	All tree species may be planted 7 days or more after treatment * Rotary atomisers may be used at a water volume of 10-40 l/ha. Ensure droplet diameter falls within the range 200-300 microns.
		Grassland weeds	5.0		
Forestry: - Post-planting (directed) in conifers & broad-leaved trees	Clean-up around trees with knapsack applications.	Annual/perennial grasses and broad-leaves	4.0	Knapsack sprayers 200:250 l/ha	It is ESSENTIAL to use a TREE GUARD for all applications made in the growing season. Treat bracken after frond tips are unfurled but before senescence. Treat heather late August to end September. All other woody weeds are treated June-August, before leaf senescence (but after new growth of crop has hardened).
		Woody weeds: Bracken/Beech Brush/Brambles Sycamore/Oak Hazel/Willow/Ash	3.0		
		Heather (peat soils) Heather (mineral soils)	4.0 6.0		
		Rhododendron (*)	10.0	250l/ha	

AREA OF USE	TARGET WEEDS/USAGE	WEED INFESTATION	APPLICATION RATE L/HA.	WATER VOLUME	APPLICATION GUIDANCE
Forestry: - Post-planting (overall application in dormant season in certain conifers – conifer release)	Grass weeds - Lowland areas - Upland areas Bracken Beech & Birch Brambles	Black Bent, Cock's-foot, Common Couch, Creeping Soft-grass, False Oat-grass, Fescues, Meadow-grasses, Other Bent species, Purple Moor-grass, Sweet Vernal-grass, Tufted Hair-grass, Wavy Hair-grass, Wood Small-reed (Bush grass) All levels of all species All levels of all species All levels of all species	1.5 2.0 2.0 2.0 3.0	Hydraulic sprayers: 200-250 l/ha or Hand-held equipment - see 'Mixing and Spraying' section	DO NOT OVERALL SPRAY trees being grown for ORNAMENTAL PURPOSES, including CHRISTMAS TREES. Species safe to spray when fully dormant and leader growth has hardened: Corsican, Lodgepole and Scots Pines, Norway Spruce, Sitka Spruce, Lawson Cypress, Western Red Cedar. Species safe to spray when fully dormant and leader growth has hardened but NOT in spring: Douglas Fir and Noble Fir If overall application takes place after the optimum timing weed control may be reduced. It is advisable to spray a limited area of forest to test crop safety under local conditions before widespread overall application in subsequent years. These recommended application rates refer to forestry usage only. Inadequate control may result if used in other areas. <u>Caution:</u> The timing of hardening of leader growth varies considerably between locations and between seasons. It may occur as early as the end of July or be delayed to October or later. To avoid damage to Lammas growth, sprays should be directed away from leaders.

AREA OF USE	TARGET WEEDS/USAGE	WEED INFESTATION	APPLICATION RATE L/HA.	WATER VOLUME	APPLICATION GUIDANCE
Forestry: - Stump application for chemical thinning	Deciduous trees Coniferous trees	All species All species	10% solution of Stacato in water 20% solution of Stacato in water		Apply the solution to saturate the rim of the newly cut surface, with a suitable adapted clearing saw, spot gun or paintbrush. Treat as soon as possible (within a week) after felling, in the period November to March. Do not apply in the period of active sap flow in the spring/early summer. Do not cut trenches or drill holes and fill with the solution or use undiluted product. Note: for ease of identification of treated areas a suitable, commercially available, water-soluble dye may be added to the prepared spray solution.
Forestry: - Chemical thinning by injection of tree stems	Coniferous and deciduous species	-	2 ml neat Stacato per cut per 10 cm diameter (or less) tree		Use a hatchet to cut one notch in trees up to 10cm diameter and apply 2 ml of the solution to each cut. Use two or three notches in trees over 10cm diameter. Do not treat in the period of active sap flow in the spring/early summer.

NOTES: For all rotary atomizer uses the minimum water volume is 40l/ha.

Mixing and spraying

Stacato mixes readily with water and can be applied in spray volumes ranging from 80-400 l/ha using tractor mounted, knapsack, rotary atomisers and hand-held sprayers. Specialised application equipment such as weed wipers, stem injection and spot gun applicators may be used where indicated.

All applications using hydraulic sprayers (including knapsack sprayers) to be as MEDIUM or COARSE spray quality (BCPC definition).

Correctly calibrate all sprayers under field or use conditions prior to application.

a) Tractor mounted and powered sprayers

These should be capable of applying accurately 80-400 l/ha within a pressure range of 1.5-2.5 bars (20-35 psi).

Half fill the spray tank with clean water, start gentle agitation, and then add the correct amount of Stacato. Top up the tank with water to the required level. To avoid foaming do not use top tank agitation. Use of a defoamer may be necessary.

Medium Volume application (150-300 l/ha)

Avoid high water volumes (>300 l/ha) which may lead to run-off from the treated vegetation, resulting in reduced control. Low drift nozzles such as air induction and pre-orifice types producing a medium or coarse spray (BCPC definition) should be used to minimise the risk of drift.

Low Volume Application (minimum 80 l/ha)

Low volume application can be achieved by reducing pressure and the appropriate nozzle selection. Low drift nozzles which produce a medium spray quality (BCPC definition) should be used to minimise the risk of drift.

b) Knapsack sprayers

Recommended delivery range is 80 - 300 l/ha. Half fill the spray tank with clean water, add the correct amount of Stacato and top up with water. Fill according to best practice as given on the CPA's Voluntary Initiative website (www.vounaryinitiative.org.uk)

When used at a walking speed of 1 m/sec to apply a swath of 1 m width, most knapsack sprayers fitted with a Lurmark AN 2.0 or similar nozzle deliver approximately 200 l/ha spray volume (or 10 l per 500 m²). To apply 4.0 l/ha of STACATO, therefore, use a 2.0% solution, i.e. 200ml Stacato made up to 10 litres. Similarly, knapsack sprayers fitted with low volume nozzles such as

Lurmark AN 1.0 typically deliver approximately 100 l/ha spray volume. To apply 4.0 l/ha Stacato therefore, use 40ml of product for each 2 litres of spray liquid required. Similarly, knapsack sprayers fitted with low volume nozzles such as Lurmark AN 1.0 typically deliver 100 l/ha spray volume. To apply 4.0 l/ha Stacato in this case, use 80ml of product for each 2 litres of spray liquid required.

c) Rotary Atomisers

Hand-held machines can be used to apply a spray volume of 10-20 l/ha, e.g. Herbi and Herbaflex. Tractor-mounted boom sprayers are suitable for use in some situations to apply a spray volume of up to 40 l/ha.

When rotary atomisers are used to apply Stacato ensure that the droplet diameter falls within the range 200-300 microns for all uses.

Stir the correct amount of Stacato to control the particular target species into the sprayer bottle half filled with clean water. Top up with water, close the top and shake gently to ensure good mixing.

Do not tank mix Stacato when using rotary atomiser sprayers.

d) Weed Wipers

For ropewick applicators use a concentration of 1 part Stacato to 2 parts of water and add a water-soluble dye if required. Care should be taken to avoid dripping onto wanted vegetation.

For new generation weed wipers, use 1 part Stacato to 10 or 20 parts of water or as directed by manufacturer's instructions. A list of machines is included in the Company Advisory section at the end of this label.

e) Cut Stump Applicators

For cut stump treatment an Enso attachment to rotary saws may be used.

This technique is specific to scrub clearance in forestry. A suitable water soluble dye may be used.

f) Stem injection

Use a hatchet to cut one notch in trees up to 10cm diameter and two to three notches in trees above 10cm diameter. Use 2.0 ml of undiluted Stacato per notch.

g) Spot Gun Applicators

Spot gun applicators are for the treatment of individual weeds. Apply 5 ml of spray to target weed, using a narrow cone TG-3 or TG-5 nozzle.

Spot Diameter (metres)	Amount of Stacato (ml) per 5 litres spray solution for targeted dosages of:		
	3.0 l/ha	4.0 l/ha	5.0 l/ha
0.3	20	28	35
0.6	85	110	140

Compatibility

Consult Sipcam or your distributor before tank mixing with any adjuvants or pesticides.

Stacato is compatible with agitation with n2n Diuron Flowable (MAPP no. 11820). Stacato is also compatible with the adjuvant Mixture B (AO161).

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF SUBSTANCE, PREPARATION AND COMPANY

Product name – Stacato

MAPP – 05892

Use – Herbicide

Formulation type – Soluble Liquid

Supplier – Sipcam UK Limited, 3 The Barn, 27 Kneesworth Street, Royston, Herts SG8 5AB

Emergency phone no – Office 01763 212100

2. COMPOSITION/INFORMATION ON INGREDIENTS

Common name – Glyphosate

CAS/EC no – 38641-94-0, 2540568

Hazard Symbol – Not classified

R phrases –

Concn – 36%

Common name – Ethoxylated Tallow amine

CAS/EC no – 61791-26-2

Hazard Symbol – Xn, N

R phrases – R22, R41, R51/53

Concn – 13-18%

3. HAZARDS IDENTIFICATION

Critical Hazard to man – Not expected to produce significant adverse effects when used as recommended. Not known to be toxic to man.

Critical Hazard to environment – Harmful to aquatic organisms.

4. FIRST AID MEASURES

General advice – Remove from source of exposure.

Remove all contaminated clothing and wash affected area.

Inhalation – Remove the individual from exposure to this product and keep well ventilated with fresh air. Keep at rest. If necessary and if breathing stops, give artificial respiration. Seek medical attention.

Skin contact – Remove contaminated clothing immediately.

Wash affected area thoroughly with soap and water.

Rinse with more water. Seek medical attention.

Eye contact – Rinse immediately with plenty of water for at least 15 minutes and then seek medical attention.

Ingestion – Immediately offer water to drink. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention immediately.

Treatment – Treat Symptomatically. Maintain under medical supervision for at least 48 hours. This product is not an inhibitor of cholinesterase.

Consult a Poisons Centre such as;

0171 635 9191 (National Poisons Information Service - London)

(AUTHORISED MEDICAL PRACTITIONERS ONLY)

5. FIRE FIGHTING MEASURES

Suitable extinguishing media – Fight fire with CO₂, dry chemical powder, foam or water spray (in preference to water jet).

Specific hazards – Combustion may generate toxic fumes containing HCL, CO and NO₃. Under certain fire conditions traces of other toxic gases cannot be excluded.

Protective equipment – Wear self-contained breathing apparatus (SCBA).

Specific Methods – Remove undamaged containers from source of

combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal Protective Equipment – Wear protective coveralls, neoprene gloves, rubber boots and faceshield or goggles, covering as much of the body as possible (see section 8).

Environmental Protection – Inform local water plc immediately if spillage enters drains and the National Rivers Authority (England and Wales) or River Purification Boards (Scotland), if it enters surface or ground waters.

Clean up Methods – Contain spillage. Absorb in earth or sand sweep up carefully and shovel sweepings into marked bags or drums. Dispose of through a reputable local waste disposal contractor.

7. HANDLING AND STORAGE

Handling – Use Personal Protective Clothing as specified in Section 8.

Storage – KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

Other – WHEN USING, DO NOT EAT, DRINK OR SMOKE.

WASH SPLASHES from skin or eyes immediately.

AVOID ALL CONTACT BY MOUTH, WITH SKIN AND EYES.

DO NOT BREATHE SPRAY.

WASH HANDS AND EXPOSED SKIN before eating, drinking or smoking and after work.

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS.

KEEP OUT OF REACH OF CHILDREN.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

This product does not contain any materials with operational exposure limits.

Personal Protective Equipment

WEAR SUITABLE PROTECTIVE GLOVES* AND FACE PROTECTION (FACESHIELD) when handling the concentrate. (* neoprene or nitrile at least 0.5mm thick).

WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

Where PPE cannot be cleaned, dispose of as contaminated waste.

9. PHYSICAL AND CHEMICAL PROPERTIES

State – Liquid

Density – 1.17

Colour – Amber brown

Odour – Slightly amine

pH (1% in water) – 4.4-4.9

Solubility – Soluble

n-octanol/water – log Pow <0.000 (ai)

10. REACTIVITY AND STABILITY

Stable under normal use conditions.

11. TOXICOLOGICAL INFORMATION

Acute oral LD50 (rat) – >2,000 mg/kg (formulation)

Acute dermal LD50 (rat) – >2,000 mg/kg (formulation)

Acute inhalation toxicity LC50 (rat) – >5.7 mg/l (4 hrs aerosol)

Irritation to Skin – Irritating

Irritation to Eye – Irritating

Sensitization – not sensitizing

12. ECOLOGICAL INFORMATION

Mobility – Strongly absorbed to soil and practically immobile.

Bioaccumulation – No significant bioaccumulation is expected.

Ecotoxicity

Rainbow Trout LC50 8.2 mg/l (96hr)

Daphnia magna EC50 12.9 mg/l (48hr, static)

Bees LD50 >0.1 mg/bee (48hr, contact)

Bobwhite quail LD50 >5,620 mg/kg diet, 5 days

Earthworm LD50 >5,000 mg/kg dry soil

13. DISPOSAL

Contact Local Authority (Environmental Health Department) or a reputable waste disposal company for collection and disposal of unwanted product or containers.

For further guidance on the disposal of containers, surplus spray solution, tank washings and concentrate, refer to Part 5 (Disposal of Pesticide Waste) of the MAFF/HSE booklet "Pesticides: Code of Practice for the Safe Use of Pesticides on Farms and Holdings".

14. TRANSPORT

UN Number – UN3082

Packaging Group – III

Marine Pollutant –

ADR/RID Classification – Class 9

IMDG/IMO Classification – Not classified

Proper shipping name –

15. REGULATORY INFORMATION

Hazard Symbol

N Dangerous for the environment.

Xn Harmful.

Risk Phrases (R) –

R20 Harmful by inhalation

R41 Risk of serious damage to eyes.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases (S)

S39 Wear eye/face protection

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S35 This material and its container should be disposed of in a safe way.

S57 Use appropriate containment to avoid environmental contamination.

16. OTHER INFORMATION

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

Packaging

Container – 5 Litre HDPE with 63mm neck

Outer – 4x5 in double-wall carton box

Occupational Exposure Limits – There are no OELs for this product

Approval number – M12675