Touchdown® Quattro

syngenta®

GROUP	9	HERBICIDE

Product registration number: PCS No. 06143

TOUCHDOWN® Quattro is a soluble concentrate containing 360 g/l glyphosate, a surfactant and water conditioning system.

A systemic herbicide for the control of a wide range of annual and perennial weeds pre-harvest in wheat, barley, oats, oilseed rape, linseed, asparagus, forestry, apples, pears, cherries, plums and combining peas, in stubbles, green cover on land not being used for crop production and natural surfaces not intended to bear vegetation, before drilling or planting any crop, post drilling or planting and pre-crop emergence and the destruction of grassland.

In case of toxic or transport emergency ring +44 (0) 1484 538444 any time.

PROTECT FROM FROST
MIX THOROUGHLY BEFORE USE

This container should be handled only by mechanical means.

Approval Holder
Syngenta UK Ltd CPC4, Capital Park, Fulbourn, Cambridge, CB21 5XE Tel: +44 (0)1223 883400
Marketing Company
Syngenta Ireland Ltd. Block 6, Cleaboy Business Park, Old Kilmeaden Road, Waterford, Ireland Tel: (051) 377203

FOR PROFESSIONAL USE ONLY

To avoid risks to human health and the environment comply with the instructions for use.

Soluble concentrate containing 360 g/L glyphosate, a surfactant and water conditioning system.

Warning
Toxic to aquatic life with long lasting effects.
Collect spillage.
Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

PCS No. 06143

Lxxxxxxx IREL/02C PPExxxxxxx

20 litres

SAFETY PRECAUTIONS
(a) Operator Protection

WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate
and applying through hand held equipment.
WASH HANDS AND EXPOSED SKIN before eating, drinking or smoking and after work.
IF YOU FEEL UNWELL, seek medical advice (show label where possible).

(b) Environmental protection

KEEP LIVESTOCK OUT OF TREATED AREAS.
Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.
Extreme care must be taken to avoid spray drift onto non-crop plants outside of the taregt area.

(c) Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.
RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

DO NOT USE OR KEEP TOUCHDOWN QUATTRO IN GALVANISED OR UNLINED MILD STEEL SPRAY TANKS OR CONTAINERS.
DO NOT LEAVE SPRAY MIXTURE IN TANK FOR LONG PERIODS AND MAKE SURE TANKS ARE WELL VENTED.

IMPORTANT INFORMATION
FOR USE ONLY AS AN AGRICULTURAL / HORTICULTURAL / INDUSTRIAL HERBICIDE
For use on:

Crops/situations	Maximum individual dose (litres product/ha)	Maximum total dose (litres/ product/ha)	Latest time of application
Wheat, barley, oats, combining pea	4	4 per crop	7 days before harvest. May only be applied when crop is past BBCH 87 and grain/seed moisture is less than 30%
Oilseed rape, linseed	4	4 per crop	14 days before harvest. May only be applied when crop is past BBCH 87 and grain/seed moisture is less than 30%
Stubbles including the destruction of cover crops, green cover for land not being used for production (setaside/fallow)	4	4 per year	2-5 days pre-cultivation/ drilling/ planting
Wheat, barley, durum wheat, oats, oilseed rape, sugar beet, leek, linseed, mustard, bulb onion, combining pea, vining pea, swede, turnip, field bean	1.33	1.33 per crop	Post planting and pre-emergence
Asparagus	5	5	Pre-emergence
Cherries, Plums	5	5 per year	After leaf fall/ before white-bud stage
Apples, Pears	5	5 per year	Post-harvest before green cluster stage
Non-cropped areas (hard and permeable surfaces)	5	5 per year	
Forestry (pre- and post-planting)	4	4	
Grassland destruction	4	4 per year	5 days before cutting/grazing

Other specific restrictions:
Livestock must be kept out of treated areas until poisonous weeds such as ragwort have died and become unpalatable.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE.
FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

This leaflet is part of the approved Product Label.

DIRECTIONS FOR USE

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

CONDITIONS FOR OPTIMUM USE

TOUCHDOWN® QUATTRO applied to foliage is translocated throughout the plant, controlling all parts including roots, rhizomes or stolons. After treatment, discolouration of the leaves is seen first on grass weeds but takes longer to appear on broad-leaved weeds. The time for complete kill of weeds depends on species and growing conditions, and may vary from a few days to a few weeks.

TOUCHDOWN QUATTRO is quickly deactivated and degraded in soil. Once a sufficient interval for translocation into the weeds has elapsed (as specified below), any crop can be safely drilled or planted. A slight growth check may occasionally be seen, particularly where herbicide traces remain in decaying trash from previously treated crops or weeds. Disperse or bury such decaying matter by thorough cultivation.

To allow TOUCHDOWN QUATTRO to translocate to maximum effect, it is important that perennial weeds are not broken up before treatment, so do not cultivate before spraying. In order to allow full translocation of TOUCHDOWN QUATTRO, do not apply other pesticides, lime, fertilizer or farmyard manure either before or within 5 days after application of this product.

Extreme care must be taken to avoid spray drift as this can severely damage neighbouring crops or non-crop plants outside the target area. Do not spray in windy weather, especially if applying a spray with smaller droplet size.

In good growing conditions TOUCHDOWN QUATTRO is rainfast within 6 hours. Where weed growth and uptake is slowed by adverse conditions, a rain-free period of up to 24 hours following spraying may be necessary. For best results, TOUCHDOWN QUATTRO should be applied to a dry target.

WEEDS CONTROLLED

OPTIMUM CONTROL OF WEEDS

For best control, apply TOUCHDOWN QUATTRO to weeds which are actively growing, with enough leaf to absorb the product. Weeds are less susceptible to this product when growth is restricted by natural senescence or by factors such as drought, waterlogging, frost or high temperature. Such conditions at, or soon after, spraying may result in reduced control.

Where a range of dose rates is given for control of Common Couch (marked #), the full rate of 4.0 litres per hectare will give the best and most reliable control. Rates may be reduced within the range indicated where weed growth is suitable and in good growing conditions. Reduced rates may give less than optimum levels of control, and should only be used where such control may be tolerated, as in the case of maintenance control of lower weed populations.

The TOUCHDOWN QUATTRO formulation has been fully optimised such that additional tank mix adjuvants are not required when applying at the rates recommended on this label.

Strains of some annual grasses (e.g. black-grass, wild oats and Italian rye-grass) have developed resistance to herbicides which may lead to poor control. A strategy for preventing and managing such resistance should be adopted. Guidelines have been produced by the Weed Resistance Action Group and copies are available from the AHDB, CPA, your distributor, crop advisor or product manufacturer.

TIMING FOR OPTIMUM CONTROL OF WEEDS

Common Couch and other perennial grass weeds	Treat only when a full emergence of actively growing green leaf is reached. Common Couch reaches this susceptible stage of growth from the beginning of tillering and new rhizome growth, usually when plants have 4 or 5 leaves with at least 10 cm of new growth.
Perennial broad-leaved weeds	Best treated when actively growing and at or near flowering, but before senescence begins.
Annual weeds	Must be actively growing, with sufficient leaf area for uptake of the spray. Annual grasses should have at least 5 cm of leaf and annual broad-leaved weeds at least 2 expanded true leaves before spraying. Annual weeds emerging after treatment will not be controlled.

CROP SPECIFIC INFORMATION
PRE-HARVEST USE IN WHEAT, BARLEY ,OATS, OILSEED RAPE, LINSEED, COMBINING PEAS

CROPS
All varieties of wheat, barley, oats, oilseed rape, linseed and combining peas may be treated to control annual weeds and perennial weeds such as Common Couch in following crops. TOUCHDOWN QUATTRO may be applied to all cereals to be used for feed, to wheat crops intended for milling, to barley crops intended for malt and to oilseed rape and linseed for crushing. DO NOT treat crops grown for seed, or undersown crops. Consult your grain merchant before treating any crop being grown on a contract.

CONDITIONS FOR USE
CEREALS
Apply to wheat, barley or oats at least 7 days before harvest. Crops must be past BBCH growth stage 87 and cereal grain must be under 30% moisture content. If dull weather persists after application allow up to 14 days before harvest particularly on broadleaved weeds.

OILSEED RAPE
Apply to oilseed rape at least 14 days before harvest. Crops must be past BBCH growth stage 87 and seeds must be under 30% moisture content. Apply to oilseed rape 14-21 days before harvest. DO NOT treat laid crops with significant levels of green growth, or crops with areas of uneven ripening due to factors such as bird damage or poor drainage.

LINSEED
Apply to Linseed when crop seeds have less than 30% moisture content, at least 14 days before harvest. A delay of up to 28 days may be necessary prior to combine harvesting.

COMBINING PEAS
Apply to combining peas when crops have past BBCH growth stage 87 and seeds have less than 30% moisture content, at least 7 days before harvest. If dull weather persists after application allow up to 14 days before harvest particularly on broadleaved weeds.
Straw may be chopped and incorporated, or used for all purposes except as a horticultural mulch or growing medium. Normal cultivation may be made after straw removal. Direct drilling may be used in fields suitable for this technique. Allow at least 14 days after spraying TOUCHDOWN QUATTRO before cultivating or direct drilling.

RATES OF USE - WEED CONTROL
Weeds are controlled by TOUCHDOWN QUATTRO at rates shown. Select the lowest rate which controls all required weeds.

Weed / Use	Crop	Rate: litres per hectare	Notes On Use
Common Couch.	Cereals Oilseed rape Linseed	2.0* to 4.0#	For best control use the full rate. Rates may be reduced as shown in good growing conditions, and where weed growth stage is suitable#.
	Peas for dry harvesting	4.0#	Longer term control of common couch may be reduced#.
Other perennial grassweeds. Perennial broad-leaved weeds.	Cereals Oilseed rape Linseed	4.0	All infestation levels.
	Peas for dry harvesting	4.0#	Longer term control of perennial grass weeds and perennial broad-leaved weeds may be reduced#.
Annual broad-leaved weeds[1].	Cereals Oilseed rape	1.5	All infestation levels.
Annual grasses.	Linseed Peas for dry harvesting	1.5	All infestation levels.
[#] See 'Optimum Control Of Weeds'			
[1] CAUTION: Volunteer Potatoes, Small Nettle, Rosebay Willowherb and *Polygonum* spp. will not be controlled at these lower application rates.			

APPLICATION
Apply TOUCHDOWN QUATTRO pre-harvest in the following water volumes:

Wheat, barley, linseed, combining peas: 80-250 litres per hectare
Oilseed Rape: 200-250 litres per hectare

200-250 litres per hectare is the preferred volume where crop or weeds are dense and good coverage is necessary.

WEED CONTROL IN STUBBLES INCLUDING DESTRUCTION OF COVER CROPS, GREEN COVER FOR LAND NOT BEING USED FOR PRODUCTION (SET ASIDE/FALLOW)
CONDITIONS FOR USE
For Couch control in stubbles, applications made from late September up to mid November give the best results. In some years, performance can be reduced during this period by insufficient foliage re-growth, and/or reduction of growth activity due to onset of cold conditions e.g. frost before or soon after application.
In spring, allow at least 3 weeks of weed growth before spraying with TOUCHDOWN QUATTRO. Retreatment may be necessary preharvest or in the autumn to control any further weeds emerging after treatment.
DO NOT CULTIVATE BEFORE SPRAYING. Direct drilling may be used in fields suitable for this technique.
When TOUCHDOWN QUATTRO is to be applied to land taken out of production as part of a grant aided scheme, users must ensure that use complies with the management rules of that scheme.
DO NOT USE in hedgerows, or allow drift into hedgerows.
DO NOT USE in covered areas such as glass houses or under polythene.
Exclude stock from treated fields. Livestock may not graze or be fed the treated forage, nor may it be used for hay, silage or bedding.
Allow 14 days after spraying before cultivating, drilling or planting.

RATES OF USE
Weeds are controlled by TOUCHDOWN QUATTRO at rates shown. Select the lowest rate which controls all required weeds.

Weed / Use	Rate: litres per hectare	Notes For Use	Latest time of application
Common Couch	4#	For best control use the full rate. Rates may be reduced as shown in good growing conditions, and where weed growth stage is suitable#.	5 days before cultivation, drilling or planting of the following crop
Other perennial grasses. Volunteer potatoes (autumn only).	4	Ensure plenty of active top growth before treatment, especially for volunteer potatoes.	
Annual broad-leaved weeds. Annual grasses. Volunteer cereals.	4	All infestations of all species.	2 days before drilling or planting of the following crop, or 24 hours after cultivating
# See 'Optimum Control Of Weeds'			

APPLICATION
Water volume: **80-250 litres per hectare**
200-250 litres per hectare is the preferred volume where crop or weeds are dense and good coverage is necessary.

WEED CONTROL POST DRILLING OR PLANTING AND BEFORE CROP EMERGENCE: WHEAT, BARLEY, DURUM WHEAT, OATS, OILSEED RAPE, SUGARBEET, LEEKS, LINSEED, MUSTARD, BULB ONION, COMBINING PEA, VINING PEA, SWEDE, TURNIP, FIELD BEANS, ASPARAGUS
CONDITIONS FOR USE
For Couch control post drilling or planting and pre emergence, applications made from late September up to mid November give the best results. In some years, performance can be reduced during this period by insufficient foliage re-growth, and/or reduction of growth activity due to onset of cold conditions e.g. frost before or soon after application.
In spring, allow at least 3 weeks of weed growth before spraying with TOUCHDOWN QUATTRO. Retreatment may be necessary preharvest or in the autumn to control any further weeds emerging after treatment.
DO NOT CULTIVATE BEFORE SPRAYING. Direct drilling may be used in fields suitable for this technique.
Where using post drilling or planting and pre crop emergence ensure application is complete before ANY crop has emerged.

RATES OF USE
Weeds are controlled by TOUCHDOWN QUATTRO at rates shown. Select the lowest rate which controls all required weeds.

Weed / Use	Rate: litres per hectare	Notes For Use	Latest time of application
Common Couch	1.33#	For best control use the full rate. Rates may be reduced as shown in good growing conditions, and where weed growth stage is suitable#.	Pre emergence, ensuring spraying precedes any crop emergence.
Other perennial grasses. Volunteer potatoes (autumn only).	1.33	Ensure plenty of active top growth before treatment, especially for volunteer potatoes.	

Weed / Use	Rate: litres per hectare	Notes For Use	Latest time of application
Annual broad-leaved weeds. Annual grasses. Volunteer cereals.	1.33	All infestations of all species.	Pre emergence, ensuring spraying precedes any crop emergence.
# See 'Optimum Control Of Weeds' Applications to asparagus may be made up to 5 l/ha per crop.			

APPLICATION
Water volume: **80-250 litres per hectare**
200-250 litres per hectare is the preferred volume where crop or weeds are dense and good coverage is necessary.

GRASSLAND DESTRUCTION
CROPS
After grazing or cutting, allow a re-growth period varying from 3 to 6 weeks before spraying with TOUCHDOWN QUATTRO:

Short rotation grasses and annual broad-leaved species:
Treat at any time of year when growth is active, grass plants have at least 5 cm of new leaf growth and annual broad-leaved weeds have at least 2 true leaves.

Perennial grasses in 2-4 year old leys:
Treat when rhizome, stolon or tiller growth is active and grass plants have at least 5 leaves with 10 to 15 cm of new leaf growth. The listed perennial broad-leaved weeds will often be susceptible at times when perennial grasses are suitable for treatment.

Perennial broad-leaved weeds in long leys:
Treat when these weeds have produced a flowering stem which is up to the stage of flowering but before seeds are set. The period of treatment can range from early June to late August and is influenced by location, climate and sward management.

Well established perennial weeds in permanent pastures:
These pastures may contain many fine-leaved grasses and many broad-leaved weeds. Take care to identify the species present and spray only at their sensitive stage of growth.

CONDITIONS OF USE
Allow at least 14 days after spraying perennial grasses and weeds, after which normal cultivations for the next crop can be made as usual. Alternatively, there are two situations where grass may be direct drilled:

a) Following a 1-2 year old ley - without mat.
It is essential to remove or destroy all surface trash once desiccation is complete. Grass and clover may be direct drilled once all trash is cleared.

b) Following a long ley - with some surface mat.
Spray the ley in the autumn. Delay direct drilling until the following spring to give the surface mat time to decompose. Destruction of any remaining trash, followed by harrowing to break the soil surface to the depth of decaying roots and rhizomes, will aerate the soil, speed breakdown of the organic mat and reduce the risk of toxins being present when grass seeds are drilled in the spring.

RATES OF USE
Weeds are controlled by TOUCHDOWN QUATTRO at rates marked 'S'. Select the lowest rate which controls all required weeds, and will destroy all grass species present in the sward. Well established swards and permanent pasture will need higher doses.

Broad-leaved Weeds and Bracken	Rate: litres per hectare	
	3.0	4.0
Amphibious Bistort		S
Bracken[2]		S
Broad-leaved Dock		S
Cleavers	S	S
Colt's-foot		S
Common Chickweed	S	S
Common Mouse-ear		S

Grass Weeds and Rushes	Rate: litres per hectare	
	3.0	4.0
Annual Meadow grass	S	S
Barren Brome	S	S
Black Bent		S
Black-grass	S	S
Cock's-foot		S
Common Bent		S
Common Couch		S

Broad-leaved Weeds and Bracken	Rate: litres per hectare	
	3.0	4.0
Common Nettle		S
Common Ragwort		S
Common Sorrel		S
Creeping Buttercup[1]		S
Creeping Cinquefoil		S
Creeping Thistle		S
Curled Dock		S
Dandelion		S
Dock seedlings	S	S
Ground-elder		S
Hogweeds[1]		S
Japanese Knotweed		S
Mayweed species	S	S
Meadowsweet		S
Mugwort		S
Perennial Sow-Thistle		S
Plantains		S
Red Clover		S
St John's-worts		S
Scotch Thistle		S
Sheep's Sorrel		S
Spear Thistle		S
Speedwell species	S	S
White Clover[1]		S
White Dead-nettle		S
Willowherbs		S
Yarrow		S

[1]Correct stage of growth at treatment is important.
[2]At full frond expansion.

Grass Weeds and Rushes	Rate: litres per hectare	
	3.0	4.0
Common Reed		S
Creeping Bent		S
Creeping Soft-grass		S
Crested Dog's-tail		S
False Oat-grass		S
Hard Rush		S
Italian Rye-grass	S	S
Meadow Fescue		S
Meadow Foxtail		S
Perennial Rye grass		S
Red Fescue		S
Rough Meadow-grass	S	S
Sedges		S
Sheep's Fescue		S
Smooth Meadow-grass	S	S
Soft Brome		S
Soft Rush		S
Timothy		S
Tufted Hairgrass		S
Wild Oats	S	S
Yorkshire Fog		S

APPLICATION
Water volume: **200 litres per hectare**

LAND NOT INTENDED TO BEAR VEGETATION, NON-CROPPED AREAS INCLUDING HARD AND PERMEABLE SURFACES
TOUCHDOWN QUATTRO can be used for vegetation control in a variety of non-cropped areas, such as:
- Creation of sterile strips around field margins.
- Along roads, paths, fences and ditch edges.
- Around buildings and in yards, storage areas and waste ground.
- Root-crop storage areas - including re-growth of roots/tubers which will not be consumed.

DO NOT USE in hedgerows, or allow drift into hedgerows.
DO NOT USE in covered areas such as glass houses or under polythene.
Exclude stock from treated fields. Livestock may not graze or be fed the treated forage, nor may it be used for hay, silage or bedding.
Allow 14 days after spraying before cultivating, drilling or planting.
Application to hard surfaces: Apply this product carefully. Ensure spraying takes place only when weeds are actively growing (normally March to October) and is confined only to visible weeds including those in the 30 cm swath covering the kerb edage and road gulley – do not overspray drains.

RATES OF USE
Weeds are controlled by TOUCHDOWN QUATTRO at rates shown in the previous section on Grassland Destruction. Other weed species should be treated at the rates shown below. Select the lowest rate which controls all required weeds.

Weed	Rate: litres per hectare
Perennial broad-leaved weeds	**5.0**
Perennial grasses ** and volunteer potatoes	**5.0**
Annual weeds	**1.5**

**A reduced dose of 3l product/hectare may provide adequate control of couch grass under optimum application conditions.

APPLICATION
Water volume: **80-250 litres per hectare** through conventional mounted or knapsack sprayers.

200-250 litres per hectare is the preferred volume where crop or weeds are dense and good coverage is necessary.

PACK SIZE - HECTARAGE TABLE
According to rate, a 20L pack will treat the following areas:

Rate of Use	Area Treated
1.5 litres per hectare	13.3 hectares
2 litres per hectare	10.0 hectares
3 litres per hectare	6.66 hectares
4 litres per hectare	5.0 hectares
5 litres per hectare	4.0 hectares

FORESTRY (PRE- AND POST-PLANTING)
For the control of most broad-leaved and grass weeds pre- and post-planting and the moderate control of broad-leaved woody weeds.

Apply to green and actively growing weeds and wait at least 7 days before cultivation or planting. Bracken should be treated after frond tips are unfurled but pre-senescence. Heather should be treated late August to end September. All other woody weeds should be treated June to August before leaf senescence.

It is ESSENTIAL to use a tree guard for all applications made in the growing season.

RATES OF USE
Apply at 4 litres per hectare.

APPLICATION
Water volume: 80-250 litres per hectare
250 litres per hectare is the preferred volume for post-planting applications.

APPLE, PEARS, CHERRIES, PLUMS
For the control of most perennial and broad-leaved weeds.

Apply to green and actively growing weeds and spray after autumn leaf-fall. For apples and pears, apply before the green cluster stage. For cherries and plums, apply before the white-bud stage.

Trees must have been established for at least two years. Avoid contact with trees above 30 cm above ground.

RATES OF USE
Apply at 5 litres per hectare.

APPLICATION
Water volume: 200-400 litres per hectare

COMPATABILITY
Touchdown Quattro must NOT be tank mixed with pesticides, fertilizers or adjuvants. Such mixtures may lead to reduced weed control.

MIXING AND SPRAYING

CONVENTIONAL HYDRAULIC SPRAYERS

Apply through a well maintained conventional hydraulic sprayer as a MEDIUM or COARSE spray. Ensure that the sprayer is correctly calibrated before use. Do not leave the spray liquid in the sprayer for long periods (i.e. during meals or overnight).

Ensure that the sprayer boom is adjusted in height so that the spray pattern gives good, even cover. When applying preharvest, a high clearance boom may be necessary, and a narrowwheeled tractor with crop dividers and a wide boom sprayer will minimise crop damage.

Mixing: Ensure that the sprayer is clean and correctly set to give an even application at the required volume. Half-fill the spray tank with clean water and start agitation. Shake the container, if less than 20 litre size whereas use mechanical assistance and add the required amount of Touchdown Quattro to the sprayer using a filling device (e.g. induction bowl or closed transfer unit) or by direct addition to the sprayer tank. Where applicable, unscrew and remove the cap covering the 'anti-glug plug'. Pierce with a screw driver. Wash out containers thoroughly, preferably using an integrated pressure rinsing device, or manually rinse three times. Add washings to the sprayer at the time of filling. Top-up the tank with water to the required level.

APPLICATION - SPOT TREATMENT

Knapsack applicators: TOUCHDOWN QUATTRO may be applied through knapsack sprayers. Use 200 ml TOUCHDOWN QUATTRO in 9.8 litres of CLEAN water to make 10 litres of spray liquid. This quantity will cover 500 square metres at a dose rate equivalent to 4.0 litres per hectare. Cover weed leaves evenly, but do not spray to the point of runoff.

If using the anti glug-plug container:

- Fill the knapsack sprayer 1/3 full of water.
- Unscrew and remove the cap covering the 'anti glug-plug'.
- Pierce with a screw driver.
- Decant the required quantity of 'Touchdown Quattro' into an appropriate measuring container and add to the tank and replace both caps.
- Rinse the measuring device three times with water and add to the tank.
- Add the appropriate amount of adjuvant to the tank and fil lto the required level with water.

AFTER USE

It is essential to clean out thoroughly sprayer tanks, pumps and pipelines between applying this product and other pesticides.

Wash equipment thoroughly immediately after use with a commercial tank cleaner, in accordance with the manufacturer's instructions. Dispose of tank washings safely according to the Code of Practise for using plant protection products .

This product is to be used only in accordance with the recommendations and instructions given on the labels provided with this pack. Use in any other circumstances is entirely at user's risk.

SAFETY DATA SHEET - V11.2

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name: TOUCHDOWN QUATTRO
Design code: A12798QA
Product Registration Number: PCS 06143
Unique Formula Identifier (UFI): AQA0-K0Y4-400P-RWPP

1.2 Product identifier

Use of the Substance/Mixture: Herbicide
Recommended restrictions on use: professional use

1.3 Details of the supplier of the safety data sheet

Company: Syngenta Ireland Limited, Block 6 Cleaboy Business Park, Old Kilmeaden Road, Waterford, Ireland
Telephone: (051) 377203
Telefax: (051) 354748
E-mail address of person responsible for the SDS: cropsales.ie@syngenta.com

1.4 Emergency telephone number

Emergency telephone number: Syngenta +44 1484 538444
Poisons Information Centre of Ireland
Members of Public: +353 (1) 809 2166. (8.00 a.m. to 10.00 p.m. 7 days a week)
Healthcare Professionals: +353 (1) 809 2566 (24-hour service)

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Long-term (chronic) aquatic hazard, Category 2 H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms:

Signal word:	Warning	
Hazard statements:	H411	Toxic to aquatic life with long lasting effects.
Precautionary statements:		
Response:	P391	Collect spillage.
Disposal:	P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty triple rinsed clean containers which can be disposed of as non-hazardous waste.

Additional Labelling
EUH401 To avoid risks to human health and the environment, comply with the instruc-tions for use.
2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioac-cumulative (vPvB) at levels of 0.1% or higher.
Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS
3.2 Mixtures
Components

Chemical Name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
glyphosate-diammonium	69254-40-6 015-184-00-8	Aquatic Chronic 2; H411	>= 30 - < 50
D-Glucopyranose, oligomeric, decyl octyl glycosides	68515-73-1 500-220-1 01-2119488530-36-xxxx	Eye Dam.1; H318	>= 3 - < 10

For explanation of abbreviations see section 16.

SECTION 4. FIRST-AID MEASURES
4.1 Description of first aid measures
General advice: Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
If inhaled: Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest. Call a physician or poison control centre immediately.
In case of skin contact: Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physi-cian. Wash contaminated clothing before re-use.
In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses. Immediate medical attention is required.
If swallowed: If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.
4.2 Most Important symptoms and effects, both acute and delayed
Symptoms: Nonspecific. No symptoms known or expected.
4.3 Indication of any immediate medical attention and special treatment needed
Treatment: There is no specific antidote available. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Extinguishing media - small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires: Alcohol-resistant foam or Water spray

Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

5.3 Advice for fire-fighters:

Special protective equipment for firefighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly. Clean with detergents. Avoid solvents. Retain and dispose of contaminated wash water.

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling: No special protective measures against fire required. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

Further information on storage stability: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

7.3 Specific end uses

Specific use(s): For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
ammonium sulphate	Workers	Dermal	Long-term systemic effects	42.67 mg/kg
	Workers	Inhalation	Long-term systemic effects	11.17 mg/m^3
	Consumers	Oral	Long-term systemic effects	6.4 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1.67 mg/m^3
	Consumers	Dermal	Long-term systemic effects	12.8 mg/kg
D-Glucopyranose, oligomeric, decyl octyl glycosides	Workers	Dermal	Long-term systemic effects	595000 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	420 mg/m^3
	Consumers	Dermal	Long-term systemic effects	357000 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	124 mg/m^3
	Consumers	Ingestion	Long-term systemic effects	35.7 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
ammonium sulphate	Fresh water	0.312 mg/l
	Marine water	0.0312 mg/l
	Intermittent use/release	0.53 mg/l
	Sewage treatment plant	16.18 mg/l
	Fresh water sediment	0.063 mg/kg
	Soil	62.6 mg/kg
D-Glucopyranose, oligomeric, decyl octyl glycosides	Fresh water	0.176 mg/l
	Marine water	0.0176 mg/l
	Fresh water sediment	1.516 mg/kg dry weight (d.w.)
	Marine sediment	0.152 mg/kg dry weight (d.w.)
	Soil	0.654 mg/kg dry weight (d.w.)
	Sewage treatment plant	560 mg/l
	Secondary poisoning	111.11 mg/kg

8.2 Exposure controls

Engineering Measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. The extent of these protection measures depends on the actual risks in use. Maintain air concentrations below occupational exposure standards. Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye protection: No special protective equipment required.

Hand protection

Material: Nitrile rubber
Break through time: > 480 min
Glove thickness: 0.5 mm

Remarks: Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use.
Wear as appropriate: Impervious clothing

Respiratory protection: No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective measures: The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

Environmental exposure controls

Water: Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state: liquid
Colour: light brown to dark brown
Odour: sweetish, weak
Odour Threshold: No data available
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flammability: No data available
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Flash point: Method: Pensky-Martens closed cup, does not flash
Auto-ignition temperature: > 650 °C

Decomposition temperature: No data available
pH: 6.7, Concentration: 100 z%w/v
Viscosity, dynamic: 71 mPa.s (20 °C), 50 mPa.s (40 °C)
Viscosity, kinematic: No data available
Water solubility: No data available
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
Vapour pressure: No data available
Density: 1.268 g/cm^3 (20 °C)
Relative vapour density: No data available
Particle size: No data available

9.2 Other information

Explosives: Not explosive
Oxidizing properties: The substance or mixture is not classified as oxidizing.
Evaporation rate: No data available
Surface tension: 42.6 mN/m, 0.1 %

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions: No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid: No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid: None known.

10.6 Hazardous decomposition products

Hazardous decomposition products: No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure: Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity

Product:

Acute oral toxicity:	LD50 (Rat, female): > 5,000 mg/kg
	Remarks: Based on data from similar materials
Acute inhalation toxicity:	LC50 (Rat, male and female): > 5.12 mg/l
	Exposure time: 4 h
	Test atmosphere: dust/mist
	Assessment: The substance or mixture has no acute inhalation toxicity
	Remarks: The toxicological data has been taken from products of similar composition
Acute dermal toxicity:	LD50 (Rat, male and female): > 5,000 mg/kg
	Remarks: Based on data from similar materials

Skin corrosion/irritation

Product:

Species: Rabbit
Result: Mild skin irritation
Remarks: Based on data from similar materials

Serious eye damage/eye irritation

Product:

Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

Components:

D-Glucopyranose, oligomeric, decyl octyl glycosides:

Species: Rabbit
Result: Irreversible effects on the eye

Respiratory or skin sensitisation
Product:
Test Type: Buehler Test
Species: Guinea pig
Result: Does not cause skin sensitisation.
Remarks: Based on data from similar materials
Germ cell mutagenicity
Components:
glyphosate-diammonium:
Germ cell mutagenicity- Assessment: Animal testing did not show any mutagenic effects.
Carcinogenicity
Components:
glyphosate-diammonium:
Carcinogenicity - Assessment: No evidence of carcinogenicity in animal studies
Reproductive toxicity
Components:
glyphosate-diammonium:
Reproductive toxicity - Assessment: No toxicity to reproduction
11.2 Information on other hazards
Endocrine disrupting properties
Product:
Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: ECOLOGICAL INFORMATION
12.1 Toxicity
Components:
glyphosate-diammonium:

Toxicity to fish:	LC50 (Oncorhynchus mykiss (rainbow trout)): 86 mg/l Exposure time: 96 h The value is given in analogy to the following substances: glyphosate (ISO)
Toxicity to daphnia and other aquatic invertebrates:	EC50 (Daphnia magna (Water flea)): 780 mg/l Exposure time: 48 h The value is given in analogy to the following substances: glyphosate (ISO)
Toxicity to algae/aquatic plants:	EC50 (Skeletonema costatum (marine diatom)): 1.3 mg/l Exposure time: 4 d The value is given in analogy to the following substances: glyphosate (ISO) NOEC (green algae): > 1 mg/l The value is given in analogy to the following substances: glyphosate (ISO)
Toxicity to fish (Chronic toxicity):	NOEC: > 25.7 mg/l Species: Fish The value is given in analogy to the following substances: glyphosate (ISO)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):	NOEC: 50 mg/l Species: Invertebrates The value is given in analogy to the following substances: glyphosate (ISO)

Ecotoxicology Assessment
Acute aquatic toxicity: Toxic to aquatic life.
D-Glucopyranose, oligomeric, decyl octyl glycosides:
Toxicity to microorganisms: EC50 (Pseudomonas putida): > 560 mg/l
12.2 Persistence and degradability
No data available
12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil

Components:

glyphosate-diammonium:

Distribution among environmental compartments: Remarks: immobile

12.5 Results of PBT and vPvB assessment

Product:

Assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

glyphosate-diammonium:

Assessment: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties

Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging: Empty remaining contents. Triple rinse containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Waste Code: uncleaned packagings. 150110, packaging containing residues of or contaminated by dangerous substances.

SECTION 14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Remarks: Not classified as dangerous in the meaning of transport regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3 ammonium sulphate (Number on list 65)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).: Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast): Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals: Not applicable

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

E2 ENVIRONMENTAL HAZARDS

Other regulations:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

SECTION 16: OTHER INFORMATION

Full text of H-Statements

H318: Causes serious eye damage.

H411: Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic: Chronic aquatic toxicity

Eye Dam.: Serious eye damage

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Cana-da); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evalua-tion, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:	**Classification procedure:**	
Aquatic Chronic 2	H411	On basis of test data.

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