

## sumup

- Faster uptake and symptoms
- Highest levels of long-term weed control
- Greater consistency in a wider range of weather conditions
- Rainfast in just 1 hour on annuals and Common Couch
- Turnaround in 6 hours for annuals and 2 days for Common Couch
- No hazard symbols – safer for the operator and the environment
- Powerful formulation with 25% more glyphosate per litre
- Less packaging, handling and waste than 360 formulations
- Packed in easy-pour, 'anti-glug' containers

## backup

- For further information contact the Monsanto Technical Helpline on 01954 717575, e-mail [technical.helpline.uk@monsanto.com](mailto:technical.helpline.uk@monsanto.com) or visit our website at [www.monsanto-ag.co.uk](http://www.monsanto-ag.co.uk)

## Roundup Ace

Quick guide to weed control



# startup

## Cross compliance and environmental schemes 3

---

## Grassland – renewal and selective weed control 4

---

## Pre-harvest 5

---

## Stubbles and cultivated land 8

---

## Selective weed control and tank mixes 9

---

## X-Change 10

---

## Crop specific information 11

## Cross compliance and environmental schemes

Cross compliance requirements apply to anyone who receives direct payments under Common Agricultural Policy (CAP) support schemes or receives payments under certain Rural Development schemes. Compliance with both European legal requirements, known as Statutory Management Requirements (SMRs) and with domestic legal requirements requiring land be kept in Good Agricultural and Environmental Condition (GAEC) is required and any breach may result in reductions of EU payments.

### **SMR9 & SMR11: Relate to the use of Plant Protection Products**

SMR9 states users must use approved PPPs in accordance to the approval, the label and the Code of Practice for Using Plant Protection Products. There are also requirements for record keeping under SMR11. Following the recommendations in this Quick guide should ensure you do not breach SMR9.

### **GAEC 11: Relates to weed control**

Farmers are required to take all reasonable steps to prevent the spread on their land and on to adjoining land of 'injurious' weeds listed under the 1959 Weeds Act; Common Ragwort, Spear Thistle, Creeping Thistle, Field Thistle, Broad-leaved Dock and Curled Dock; and of the 'invasive' weeds; Rhododendron, Japanese Knotweed, Giant Hogweed and Himalayan Balsam.

### **GAEC12: Relates to the management of non-cropped land**

Although a cover should be established asap after March 1st in the year after the land was last cropped, there are few restrictions on the use of herbicides. In general Roundup Ace can be used on non-cropped land at any time under GAEC 11 or to clear vegetation in preparation for the next crop with a maximum of 4.8 l/ha of Roundup Ace used in any one year. However, non-cropped land designated for management as 'Bare fallow' can only be sprayed with certain selective graminicides, so Roundup Ace should not be used on bare fallow.

### **GAEC14: Relates to the management of hedgerow and watercourse buffer strips**

Buffer strips apply for 2 metres from the centre of any hedgerow, watercourse or field ditch, (including those which are temporarily dry) and land within 1m of the top of the bank of a ditch or watercourse. (There are some exceptions, refer to Cross Compliance handbook for details). Since management of the buffer strips involves maintenance of a green cover and prohibits the use of fertilisers and pesticides, the use of Roundup Ace is only allowed for spot treatment under GAEC 11 to control invasive and injurious weeds. Roundup Ace can be used for spot treatment to control any of these weeds without being in breach of GAEC 14. Any damage to cover surrounding the treated weeds can be re-sown with grass or other cover from 5 days after application.

Roundup Ace can be used through weed-wipers or through hand held sprayers, For advice on rates and timing for these weeds see pages 4, 5 and 9.

### **Over Wintered Stubbles**

Farmers who enter land into overwintered stubble options under the ELS will need to be careful to comply with restrictions to the use of herbicides laid down in the ELS Handbook.

***The use of Roundup Ace is not allowed as a pre-harvest desiccant or to clean up the stubble over the autumn and Roundup Ace can only be applied after 15th February in preparation for a spring crop.***

Caution: Perennial weeds like Docks, Thistles and Couch grass are not at a very susceptible stage in early spring and Roundup Ace treatment will give good suppression to allow the crop to grow away but not the high levels of control associated with pre-harvest or stubble treatment.

**ALWAYS REFER TO THE CURRENT CROSS COMPLIANCE HANDBOOK OR ENVIRONMENTAL SCHEME DETAILS**

# Grassland renewal

Where permanent pasture may be classed as semi-natural areas, e.g hay meadows, they may be subject to the Environmental Impact Assessment Regulations, 2006. If in doubt consult Natural England before destroying permanent pasture. For spot treatment of grassland weeds see page 9.

## Grassland rate

Situation	Roundup Ace rate l/ha	Application timing and guidance
Short rotation Rye-grass	2.4	Treat <b>either</b> before grazing/mowing with annual weeds in June–October, when growth is 30–60cm, not dense and lacking mature seeds, <b>or</b> after 3 weeks re-growth after grazing/mowing.
Leys 2–4 years old with perennial grass weeds	3.2	<b>Only</b> direct drill grass and clover <b>either</b> into 1- to 2-year leys without mat, 5+ days after spraying, <b>or</b> long leys with some mat, in the spring following autumn application.
Long leys 4–7 years old with perennial broad-leaved weeds	4.0	Select the application rate which controls/destroys the least susceptible weed and grass species present in the sward from the grassland species table.
Permanent pasture	4.8	Treated grass can be utilised as normal for grazing or conservation. For perennial broad-leaved weeds apply at the start of flowering but before seed is set. Provided seeds have not matured, treated seeds will be killed and will ensure minimum seed return.

## Grassland species

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

\* At full frond expansion. † White Clover is best cut in June and sprayed 1 month later.

## Grassland application guidance

Application details	Water volume Droplet size (BCPC definition)	150–250l/ha Medium–coarse
Grazing/Cultivation intervals	Annuals Perennials	6 hours 5 days
Rainfastness	Annuals (lower figure relates to grasses and seedling blw)	1–4 hours
	Perennials – Common Couch – Other perennials	1 hour 4 hours

### Important Note:

Poisonous weeds (including Ragwort, Hemlock, Hogweed, Water Dropwort and Bracken) can become palatable as they die back after treatment and must be removed or allowed to completely degenerate before re-grazing or conserving.

# Pre-harvest

**Do not use on any crops where seed may be saved for re-sowing.**



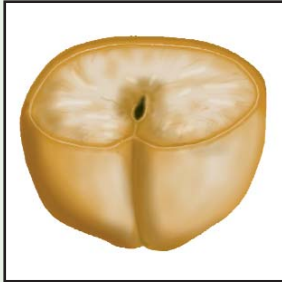
## Pre-harvest rate and application guidance

	Roundup Ace rate l/ha
<b>Harvest management – cereals:</b> Crop stems, leaves and annual grasses, Above annual broad-leaved weeds – <b>Standard rate</b>	0.8 1.2
Above plus difficult annual broad-leaved weeds – Annual Sow-thistle, Cut-leaved Cranesbill, Fat-hen, Orache, Fool's Parsley, Redshank, Pale Persicaria, Knotgrass and Black Bindweed High weed density	2.4 2.4
<b>Desiccation – oilseed rape, mustard and linseed:</b> Desiccation plus control of annual weeds and medium levels of Common Couch	2.4
<b>Weed control – peas and beans:</b> (Unsuitable for crop desiccation) Control of annual weeds and low–medium levels of Common Couch	2.4
<b>Weed control – Common Couch:</b> Low levels of Common Couch (<25 shoots/m <sup>2</sup> ), cereals only	1.6
Medium levels of Common Couch (26–75 shoots/m <sup>2</sup> )	2.4
High levels of Common Couch (>75 shoots/m <sup>2</sup> )	3.2
<b>Other perennials in all crops:</b> Perennial broad-leaved weeds, other perennial grasses	3.2

## Pre-harvest application guidance

<b>Application details</b>	Water volume oilseed rape All other crops Droplet size (BCPC definition)	<b>200–250l/ha</b> <b>80–250l/ha</b> <b>Medium–coarse</b>
<b>Harvest intervals</b>	Cereals, peas, beans Oilseed rape Linseed Mustard	<b>7+ days</b> <b>14-28 days</b> <b>14-21 days</b> <b>8-10 days</b>
<b>Rainfastness</b>	Annuals (lower figure relates to grasses and seedling blw)	<b>1–4 hours</b>
	Perennials – Common Couch – Other perennials	<b>1 hour</b> <b>4 hours</b>
<b>Timing</b>	Grain/seed moisture 30% or less (see below and page 7)	

## Timing – cereals

		
<p><b>The peduncle test</b> When the peduncle, situated at the top of the stalk, immediately below the ear, starts to lose its green colour and turns brown, the moisture level should be ideal for spraying.</p> <p>This test applies to wheat and barley.</p>	<p><b>The thumbnail test</b> Collect 20 grains from various areas in the crop (taken from the centre of each ear). Carry out the following test: press the thumbnail firmly into the grain; if the indentation holds on all the grains, the crop is ready for spraying.</p> <p>This test applies to wheat, barley and oats.</p>	<p><b>The split grain test</b> Cut the grains in half to confirm moisture content. If 75% of the grains have a dark brown pigment strand in the crease, as illustrated, the grain has reached 30% moisture. If all the grains are marked, moisture is less than 30%.</p> <p>This test applies only to wheat.</p>


## Timing – oilseed rape



1. Select an area of the crop which is representative of the field as a whole. Pick, at random, a total of 20 pods from the middle of the main raceme.
2. Open each pod. If a colour change from green to brown is seen in at least two thirds\* of the seeds per pod in at least 15 of the pods picked, the earliest correct stage for spraying has been reached.
3. Repeat the procedure in other areas of the crop to check that the assessment is applicable to the entire field. Spray within 4 days, unless the weather is very cool, then the window can be extended to 7 days.
4. An interval of 14–21 days is necessary before combine harvesting.

\* If approximately half of the seeds are turning brown, the crop should be ready to spray in 3 days, but repeat the procedure to check that the correct stage has been reached. N.B. Spraying too early will lead to poor desiccation.

## Timing – linseed

 <p>TOO EARLY Seeds white to light green</p>	 <p>JUST RIGHT Seeds light brown</p>	 <p>TOO LATE Seeds dark brown</p>	
<p style="text-align: center;">← colour range →</p> 			

1. Linseed grown for oil production should be desiccated at the brown capsule stage. Seeds are light brown and rubbery, lower leaves are withered but the upper leaves and stem are still green/yellow.
2. Confirm by sampling 40 seeds from four representative points in the field and at least 24 should be in the mid range.
3. An interval of 21-28 days is necessary before combine harvesting.

## Timing - Peas and Beans

1. Crops may be treated when the average moisture of the seeds is below 30%. At this stage pods of both crops will be mature.
2. In peas, the lower and middle pods will be dry and brown and the upper pods yellow and wrinkled, and seed rubbery. In beans, the stems are usually green/brown and the pods are black.
3. A minimum interval of 7days should be allowed before combining.

# Stubbles and cultivated land

## Species susceptibility guide for annuals in stubbles and cultivated land

Weed	Weed size and other comments	Roundup Ace application rate l/ha
<b>Annual grasses:</b> Volunteer cereals, annual grasses Black-grass, Bromes, Meadow grasses, Wild-oats	Spray prior to stem elongation	<b>1.2</b>
<b>Perennial grasses</b> Common Couch 1-75 shoots/m <sup>2</sup> Common Couch >75 shoots/m <sup>2</sup> Other Perennial grasses	Minimum of 10-15cm of new growth	<b>2.4</b> <b>3.2</b> <b>3.2</b>
<b>Most annual broad-leaved species:</b> Charlock, Cleavers, Common Chickweed, Common Fumitory, Common Orache, Common Poppy, Dead Nettles, Fat-hen, Forget-me-not, Field Pansy, Groundsel, Mayweeds, Parsley Piert, Shepherd's Purse, Speedwells	Up to 15cm	<b>1.2</b>
	Greater than 15cm	<b>1.6</b>
<b>'Tough' annual broad-leaved species:</b> Black Bindweed, Knotgrass, Pale Persicaria, Redshank, Small Nettle	Up to 2 true leaves	<b>1.2</b>
	3 true leaves to 15cm	<b>1.6</b>
	Greater than 15cm	<b>2.4</b>
Volunteer oilseed rape	Up to 6 true leaves	<b>1.2</b>
	Greater than 6 true leaves	<b>2.4</b>
Volunteer peas/beans, clover species	These species are not well controlled unless small and non-waxed. Control in the following crop may be necessary, especially if no further cultivations take place	<b>2.4</b>
<b>All perennial broad-leaved weeds</b> Including volunteer potatoes (autumn only)		<b>4.0</b>
<b>Post sowing but Pre-emergence of crop</b> Cereals, oilseed rape, mustard, linseed, peas, field beans, sugar beet, turnip, onion and leek	Tank mix as appropriate	<b>1.2</b>

### Stubbles and Cultivated land application guidance

<b>Application details</b>	Water volume Droplet size (BCPC definition)	<b>80–250l/ha</b> <b>Medium–coarse</b>
<b>Cultivation intervals</b>	Annuals Couch Other perennials	<b>6 hours</b> <b>2 days</b> <b>5 days</b>
<b>Rainfastness</b>	Annuals (lower figure relates to grasses and seedling blw)	<b>1–4 hours</b>
	Perennials – Common Couch – Other perennials	<b>1 hour</b> <b>4 hours</b>

### Perennials

Allow volunteer potatoes to make ample top-growth before spraying in autumn.

Perennials: Allow at least 21 days of new growth in the spring before spraying. Only partial control of perennials will be obtained in the spring.

### Stale seedbeds

Cultivate top down to conserve moisture and consolidate well. Wait 10–20 days for weed growth. Cultivate immediately after harvest for volunteer oilseed rape, Barren Brome or Great Brome, Black-grass, Meadow-grasses, Wild-oats and cereal volunteers, but leave 1 month before creating a stale seedbed for Meadow Brome, Soft Brome and Rye Brome. To maximise out of crop control of resistant annual grasses encourage several flushes of seedlings and spray with the annual rate up to a total dose of 4l/ha.

### Tank mixes physically compatible with Roundup Ace

Physically compatible	Compatible only with continuous agitation	Physically Incompatible
Afalon 450**, Artist, Blazer, Bullet, Butisan S, Butisan S+Treflan, Centium, Centium + Treflan, Crystal (Ice/Trooper), Crystal + Blazer, Crystal + Stomp, Crystal + Treflan, Crystal + Uranus, Defy + Tolugan, Duplosan KV*, Dursban WG, Firebird, Fiesta T, Flight/Orient, Kerb Flowable, Lexus, Lexus + Crystal, Lexus + Liberator, Lexus + O'Tan, Lexus + Stomp, Lexus + Treflan, Liberator, Liberator + Treflan, Liberator + Stomp, Liberator + Uranus, Linuron500, MCPA*, Newtron, Novall, Omex, PDM 330, Pyramin DF, Ramrod Flowable**, Springbok, Springbok + Centium, Stomp 400, Sumimax, Suspension fertiliser, Treflan, Uranus, Uranus + Stomp, Venzar Flowable, Volcan Combi	Alpha Chlorotoluron 500, Cadou Star, Defy, Defy + Stomp, Goltix Flowable, Katamaran + Treflan, Katamaran Turbo, Nimbus CS, Nirvana, Nirvana + Centium, Novall + Treflan, Stomp 400, Takron, Takron + Goltix Flowable, Tolugan 700	Bacara, Butisan S + Centium, Goltix WG, Katamaran, Katamaran + Centium, Liberator + Tolugan, Liquid Fertiliser, Magnum, Oryx, Skirmish, Stomp 400 + Centium

\*Antagonism when used at high rates \*\* Add tank mix partner to the tank first

This list is valid at the time of printing. Please phone the Technical Helpline to check for any updates.

## Application methods for selective weed control

**Knapsack Sprayers;** A full 20l knapsack sprayer with standard deflector nozzles giving 200l/ha output will cover 1,000m<sup>2</sup> when walking at 1m/sec. Use 20 ml/l water or 400ml/20l water to control perennial weeds. At least 10-15cm of new growth is required.

**Weed Wiping;** Weeds must be >10cm taller and the wiper >5cm higher than desired vegetation. Wipe dense populations twice, in opposite directions

- **Hectacare or Microwipe rope types:** 1:1.5 dilution with water or 1:3 in hot dry conditions
- **New generation types** e.g. rotary, carpet, brush or pressure pads: 1:12 to 1:25 dilution

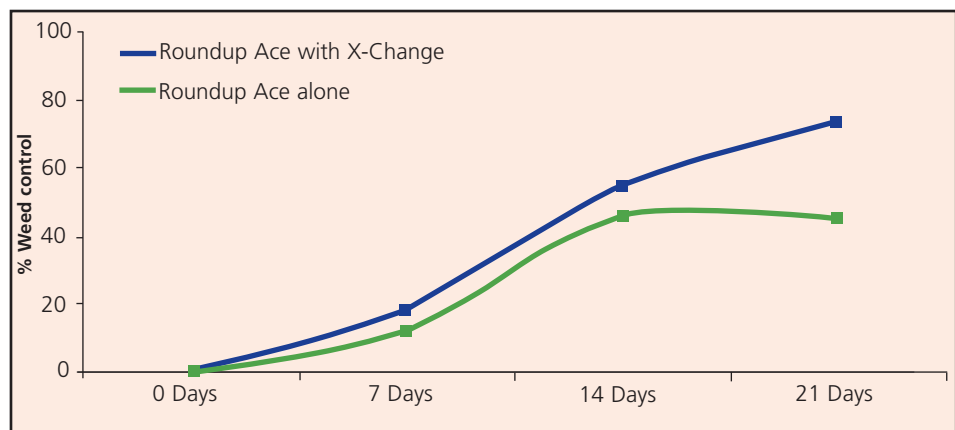
## X-Change



A proprietary blend of water conditioning agents, acidifying agents, pH buffers and an anti-foam. X-Change is fully compatible with Roundup Ace and Monsanto support its use to combat difficult use conditions. X-Change also contains a hygroscopic substance that absorbs water from the air. This retains glyphosate in liquid phase on the leaf for a longer period which helps uptake into the plant.

### Conditioning Hard Water

The activity of glyphosate can be reduced in hard water areas where the dissolved Calcium, Magnesium and other cations bind with the glyphosate. X-Change sequesters these cations leaving the glyphosate free to be taken up by the plant.



Source: Agrochemex trials, 2006. Hard water 380 ppm CaCO<sub>3</sub>, Roundup Ace @ 0.3l-0.6/ha

### How to Check Water Hardness

A test kit is available from De Sangosse. Count the number of red/purple bands to determine the correct rate of X-Change. In the absence of a test, the standard rate is 0.25% of spray volume.

No of Red/Purple Bands (% Spray Volume)	Rate of X-Change
0	0.10%
1	0.10%
2	0.15%
3	0.20%
4	0.25%



Always add X-Change to the tank before adding Roundup Ace  
X-Change is a trademark of De Sangosse Ltd.

- Half fill spray tank and begin agitation.
- Add the correct quantity of X-Change for the final water volume.
- Continue filling the spray tank to the required volume and then add Roundup Ace.



## Crop specific information

Roundup Ace contains 450g/l of glyphosate. MAPP Number 12772

Compliance with the following conditions of use is a legal requirement

Crop or situation:	Maximum individual dose (litres of product/ha):	Maximum total dose (litres of product/ha/crop or situation/annum):	Latest time of application:
Winter wheat, winter barley, winter oats, spring wheat, spring barley, spring oats, durum wheat, combining peas, field beans	3.2	3.2	7 days before harvest
Post planting and pre-emergence of listed cereals, oilseed rape, combining peas, vining peas, field bean, mustard, linseed, S. beet, swede, turnip, bulb onion and leek	1.2	1.2	Pre-emergence
Oilseed rape and linseed	3.2	3.2	14 days before harvest
Mustard	3.2	3.2	8 days before harvest
All edible crops (stubble), all non-edible crops (stubble)	4.0	4.0	5 days before the drilling or planting the following crop. 2 days before the drilling or planting of the following crop or 24 hours before cultivating
	1.2	3.2	
All edible and non-edible crops (destruction, before sowing/planting)	4.0	–	–
Grassland	4.8	4.8	5 days before harvest, grazing or drilling
Apple and pear orchards	4.0	4.0	After harvest but before green cluster stage
Cherry, plum and damson orchards	4.0	4.0	After harvest (post leaf fall) but before white bud stage
Green cover on land not being used for crop production	4.8	4.8	24 hours before cultivating

NB. Each line in the table represents a new situation and where more than one situation occurs for the same crop it can be sprayed once for each situation. For example in winter wheat you can apply up to 1.2l/ha after planting but before emergence, another maximum of 3.2l/ha before harvest and up to a further 4.0l/ha in the autumn on the stubble.

