

Achieving a good level of control of brome requires utilising a fully-inclusive control strategy. Depending on the species of brome present, the method to achieve the best control will vary. The considerations to be made are outlined in this topic sheet. Tailor your programme towards the most prominent of the grassweeds present. When choosing a herbicide, select a product that is known for its high levels of control for a wide range of grassweeds- such as Broadway Star, the leading product for ryegrass, brome, oats and broad-leaved weeds.

Dow AgroSciences has been looking into maximising grassweed control on farm at a cross-rotational trial in Warwickshire, which has been running since autumn 2011. Key findings from this trial are summarised below to help you consider the best on-farm methods to minimise the grassweed burden, and maximise the control achieved using a fully inclusive herbicide programme.

### Cultural Control Considerations

#### Stubble Cultivations

Stubble cultivation post-harvest is important for making the most of any glyphosate applications, to promote a stale seedbed. The two types of brome require a different approach post-harvest for best results. If you have a mixed population of brome, you should identify the predominant species, and work your control programme to maximise the control of that target species.

**Meadow, Rye and Soft Brome** (*Bromus* species): With *Bromus* populations, the seed is often under-ripe at harvest. For this reason, burial immediately after harvest induces dormancy, and therefore increases seed survival in the soil. The best practice is to let the seed ripen on the soil surface for a minimum of a month. Then encourage the seed to chit with a shallow cultivation, before spraying off with glyphosate. This should provide an effective stale seedbed.

**Sterile and Great Brome** (*Anisantha* species): With *Anisantha* populations, exposure to light after harvest induces seed dormancy. If there is not a good cover of chopped straw covering seeds on the soil surface, shallow cultivate as soon as possible after harvest, to reduce light exposure, and encourage the seed to chit before the application of glyphosate.

#### Rotation (*All grassweed populations*)

Having a varied rotation on farm is not only good agricultural practice, but also can reduce the grassweed burden. Break crops, such as oilseed rape, provide a good opportunity to use chemistry with alternative modes of action, thus reducing the risk of resistance build up. Spring cropping also provides the chance to make use of a stale seedbed approach.

#### Cultivation Type (*All grassweed populations*)

The primary cultivation used will have an impact on the grassweed burden. In the long term cross-rotational trial, we have found that ploughing before cereal crops consistently provided the highest level of grassweed control, when compared with shallow cultivation practices. In order to see the benefits of ploughing, it is essential that care is taken to ensure the land is ploughed well, with a complete inversion of the soil. Shallow cultivations before oilseed rape enable you to make the most out of the opportunity for Kerb Flo 500/ASTROKerb.

#### Where Ryegrass is the target grassweed

Ryegrass thrives in autumn sown crops, and is highly competitive. Ryegrass control is becoming more of a concern for UK farmers, with some field populations unable to be controlled with herbicides alone. For this reason, cultural control of ryegrass is now an important consideration.

The use of stale seedbeds via light cultivation will reduce the population. Italian ryegrass has little innate dormancy, typically germinating within 2-3 weeks once moisture is present. Ploughing is also an effective method of control; ensure a complete inversion of the soil. Ploughing will increase the risk of bringing up the seed that was buried the previous year, but when dealing with high populations of ryegrass, this will have little effect on the population level and therefore is still the best cultural control

**Application advice**

**Pre/Peri-Emergence**

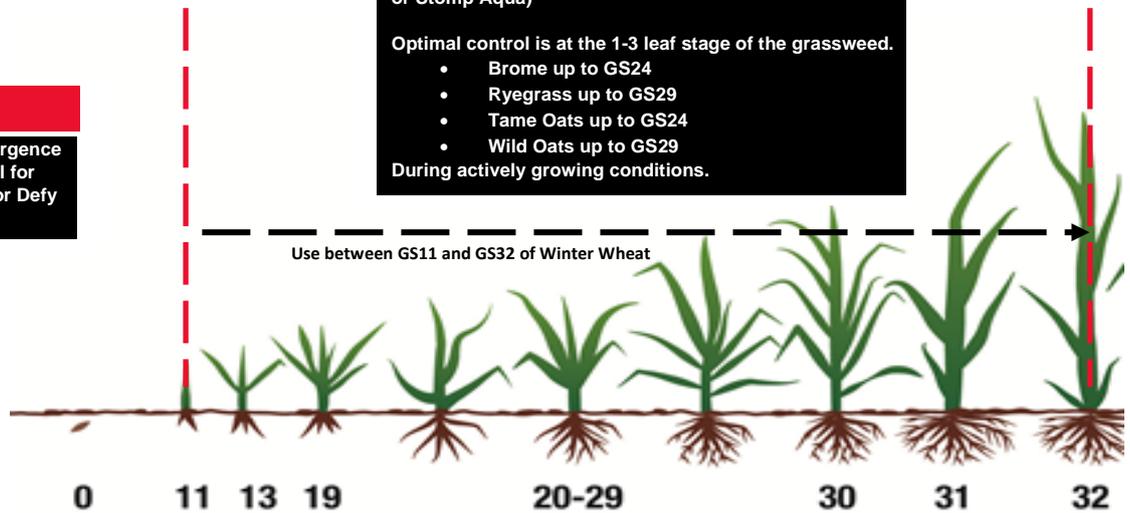
Apply an appropriate pre-emergence herbicide (e.g. 4.0 L/ha Crystal for Sterile brome and Ryegrass, or Defy 4.0-5.0 L/ha for Ryegrass)

**Autumn Application**

Apply **Broadway Star** + adjuvant + residual (e.g. Sterile Brome: 1.7 L/ha Stomp Aqua + adjuvant. Ryegrass: Defy or Stomp Aqua)

Optimal control is at the 1-3 leaf stage of the grassweed.

- Brome up to GS24
  - Ryegrass up to GS29
  - Tame Oats up to GS24
  - Wild Oats up to GS29
- During actively growing conditions.



- Nozzles:
  - Pre-tillering : Conventional Flat-fan or Defy
  - Tillering: Conventional Flat-fan, Twin-fluid, or Billericay Bubble Jets
- Water volume:
  - 100-200 L/ha (optimally 130-150 L/ha)
- FINE – MEDIUM spray quality

**Grassweed control with Broadway Star**

WEED	SIZE CONTROLLED	WEED	SIZE CONTROLLED
Bromes - <b>Sterile</b> & Great brome spp. *	<b>GS24</b>	<b>Ryegrass</b>	<b>GS29</b>
Bromes – Meadow, rye and soft spp.	GS24	<b>Wild oats</b>	<b>Optimal up to GS29</b>
Loose silky bent	GS30	Volunteer tame oats**	GS24

Key: **Bold** - label weeds. Non-label weeds listed as an indication of the effect that would be expected to be achieved based on limited data.

\*Sterile and great brome are optimally controlled in the autumn. \*\* Volunteer tame oats optimally controlled prior to tillering, mid-tillering at latest. Varietal differences in sensitivity exist. Consult Dow AgroSciences.

**Broad-leaved weed control with Broadway Star**

WEED	SIZE CONTROLLED	WEED	SIZE CONTROLLED
Black bindweed	4 etl	Hemp-nettle	4 etl
Bur chervil	8 etl	Knotgrass	2 etl (MS up to 6 etl)
<b>Charlock</b>	<b>6 etl</b>	<b>Ivy-leaved speedwell</b>	<b>6 etl</b>
<b>Chickweed</b>	<b>100 mm</b>	<b>Mayweeds</b>	<b>8 etl</b>
<b>Cleavers</b>	<b>150 mm</b>	Mugwort	MS up to 150 mm
<b>Common field speedwell</b>	<b>6 etl</b>	<b>Poppy</b>	<b>6 etl</b>
Common vetch	6 etl	Pale persicaria	6 etl
Corn marigold	4 etl	Redshank	6 etl
Creeping thistle (from seed)	MS up to 6 etl	Shepherd's needle	BFSE
Docks ( from seed)	MS	Shepherd's purse	6 etl
<b>Field pansy</b>	<b>4 etl</b>	Volunteer beans	BFBV
Forget-me-not	BFSE	Volunteer linseed	6 etl
Geranium spp.	8 etl	<b>Volunteer oilseed rape</b>	<b>6 etl</b>
Groundsel	BFBV	Wild radish	6 etl

Key: **Bold** - label weeds, Susceptible unless specified otherwise; etl - established true leaves; BFSE - Before stem extension; BFBV - Before flower buds visible; MS - Moderately susceptible.

Non-label weeds listed as an indication of the effect that would be expected to be achieved based on limited data.

Use plant protection products safely. Always read the label and product information before use. For further information including warning phrases and symbols refer to label. Dow AgroSciences Limited, CPC2 Capital Park, Fulbourn, Cambridge, CB21 5XE. Tel: +44 (0) 1462 457272. Technical Hotline: 0800 689 8899 UKHotline@dow.com | <http://uk.dowagro.com/> | ©TM Trademark of the Dow Chemical Company ("Dow") or an affiliated company of Dow. All other brand names are trademarks of other manufacturers for which proprietary rights may exist. Broadway Star® contains pyroxsulam and florasulam.