MONITOR FARM Scotland

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East Lothian

Tackling Grassweeds with Scottish Agronomy

12th June 2025

Tackling Grassweeds

Grass weeds are becoming a significant challenge across many farms, and the key message from the East Lothian Monitor Farm summer meeting was clear: **early and informed action is essential.**

Scottish Agronomy's Stevie Gray outlined practical, field-tested strategies to help farmers get on top of grass weed issues before they begin to affect yields and profitability.

The East Lothian Monitor Farm, at Castleton near North Berwick has an increasing grass weed issue, with farmer Stuart McNicol facing high herbicide costs. Brome has built up on-farm for a variety of reasons, and this is now impacting on crop management decisions.

Stevie said: “Brome is being favoured by the increase in non-inversion tillage as its seeds are no longer being buried; we often find farms several years into a non-inversion tillage system running into problems with grass weed control.

He recommends growers use the Rothamsted Research publication called ‘Which brome is that?’ available on page 5 and 6 to identify which species is on farm.

Grass weed control summary

- ☐ Map grass weed problem areas pre-harvest
- ☐ Accurately identify brome species
- ☐ Use stale seedbeds whenever possible
- ☐ Choose appropriate cultivation method; ploughing will help
- ☐ Consider crop rotation and break crops
- ☐ Take home-saved seed only from clean areas

What to do?-
Advice from Stevie

1 Control should start by considering whether you can go for a stale seedbed in affected areas. It's a really useful cultural control, especially when using non-inversion tillage.

2 Knowing the type of grass weeds present will help achieve the best results from stale seedbeds. Sterile brome, blackgrass and volunteer cereals will chit best after a light, shallow cultivation, which will cover them lightly with soil. Where meadow brome, rye brome, soft brome and/or rat tail fescue are issues, no cultivation is needed as these seeds will germinate successfully on the soil surface.

3 Choose the most appropriate cultivation method for the crop and level of grass weed seeds in the seedbank. "Non-inversion tillage is driving the increase in grass weeds on-farm. Ploughing rotationally gives a great 'leg-up' with all brome species as it buries the seeds and will give a good level of control."

4 Growers may need to factor in lower margin break crops such as winter beans in order to continue to use non-inversion tillage.

5 Any farms considering home-saved seed should be particularly careful to exclude areas with grass weeds from this. “It’s crucial to identify where the grass weeds are before harvest, and to make sure there are no issues in any of the areas you plan to save seed from. Select your seed crops from the cleanest parts of the farm.”

6 Taking these cultural control steps now are crucial as spring herbicides won’t always be successful, he warns. “You won’t get out of a hole with chemicals alone – you have got to use cultural controls. This is the time to start taking control of grass weed problems and making the right choices.”

ROTHAMSTED RESEARCH

Which brome is that?

A concise guide to the identification of five weedy species

Dr Stephen Moss

This is a summarised version of the more detailed four-page 'Identification of Brome grasses' leaflet published in 2015. Electronic versions of both leaflets are available – see links below.

There are **five** species which frequently occur as weeds of arable crops in the UK.

Be aware that at least 10 other brome species exist in the UK, although these are not commonly encountered in arable fields.

Sterile or barren brome (*Bromus sterilis*)
The commonest species.

Great brome (*Bromus diandrus*)
Mainly in East Anglia but probably under-recorded elsewhere.

Soft brome (*Bromus hordeaceus*)
Very common but often confused with meadow and rye brome.

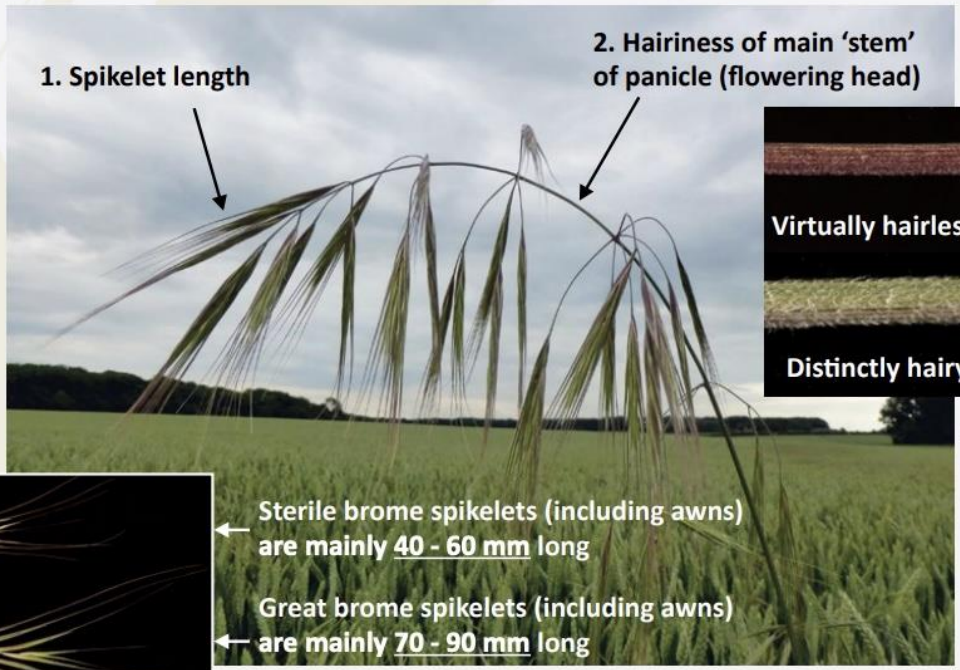
Meadow brome (*Bromus commutatus*)
Mainly in Southern England. Often confused with rye brome.

Rye brome (*Bromus secalinus*)
Mainly in southern England but probably under-recorded elsewhere. Often confused with meadow brome.

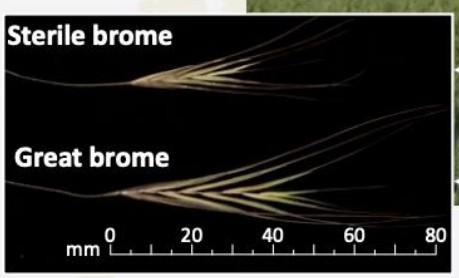
These two species have wedge-shaped spikelets with long spreading awns, so are broader at the tips.

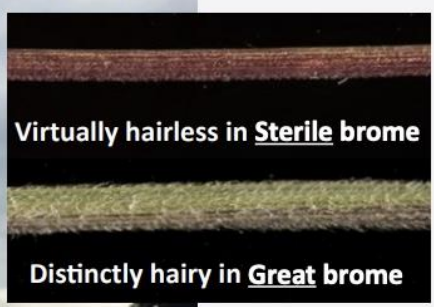
These three species have more oval shaped spikelets with shorter awns and are narrower at the tips.

The <u>two</u> key characteristics for distinguishing between <u>Sterile</u> and <u>Great</u> brome are:



Length of spikelets of both species may vary depending on growing conditions





A hand lens helps in seeing this characteristic – although hairs on Great brome are usually visible to the naked eye.

The four key characteristics for distinguishing between Soft, Meadow and Rye brome are:

Soft brome

1. **Compact panicle.**
2. **Most panicle branches (pedicels) are shorter than the spikelet length.**
3. **Spikelets always distinctly hairy.**

Meadow & Rye brome - panicles look very similar

1. **Looser, spreading panicle.**
2. **Many panicle branches (pedicels) are longer than the spikelet length.**
3. **Spikelets hairless in meadow but either hairy or hairless in rye brome.**

Meadow and rye brome cannot be distinguished reliably at the green panicle stage.

4. **Seed shape:** Rye brome can be distinguished from meadow (and soft) brome by the shape of the cross section of mature seeds. This is by far the most reliable diagnostic test for rye brome. This feature is not always particularly obvious in intact seeds - cutting the seeds definitely helps.

Cross section of mature seed - methodology

- Seeds are best collected by gently shaking panicles (=heads) into a bag so that only fully mature seeds are collected. This is likely to be in late July or in August when panicles are brown and some seeds have already shed.
- This diagnostic will not work reliably on green seeds, or on brown, maturing seeds which have not fully dried out.
- If necessary, let seeds air dry for a few days before assessing.
- Cut fully mature, dry, brown seeds in half cross-wise with a sharp blade and look at the white cross section.

Cutting a seed in half is easy! (Tip – hold ends of seed with fingers while cutting to prevent 'pinging').

Is the cross-section 'saucer' shaped, like this? If so, it's Meadow brome (soft brome is similar).

Or is it a deep 'V' or 'U' shape, like this? If so, it's Rye brome.

Acknowledgements

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CROPROTECT is a knowledge exchange system to support UK growers in sustainable crop protection. See https://croprotect.com (or search for 'CROPROTECT') for more information.

An electronic version of this summary leaflet, and the more detailed four-page 'Identification of Brome grasses' leaflet published in 2015, are available on the CROPROTECT website and at: www.rothamsted.ac.uk/weeds-and-herbicide-resistance

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