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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.

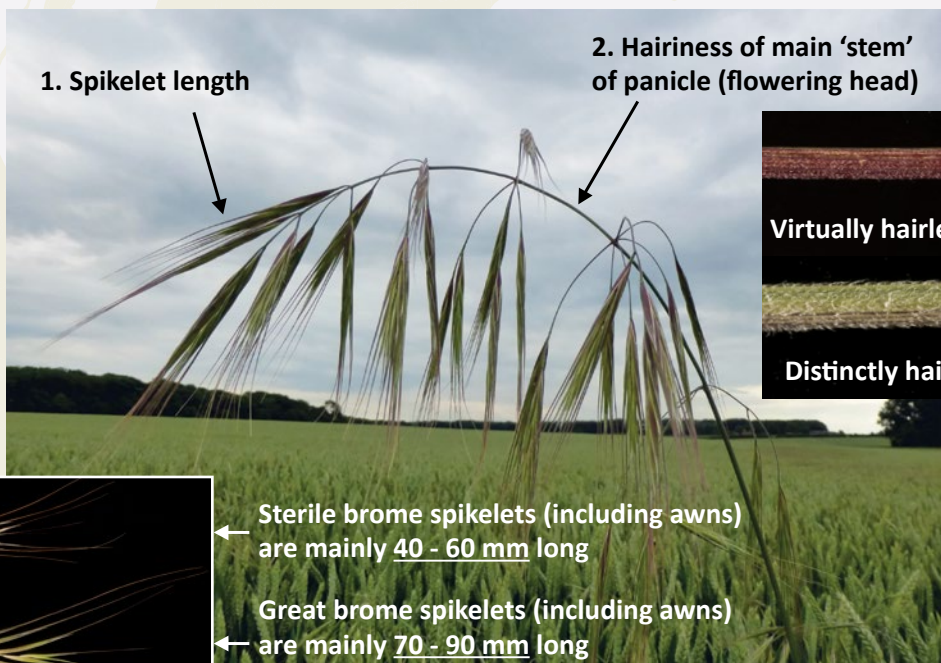


The two key characteristics for distinguishing between Sterile and Great brome are:

1. Spikelet length

2. Hairiness of main 'stem' of panicle (flowering head)

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



Virtually hairless in Sterile brome

Distinctly hairy in Great brome

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

Sterile brome

Great brome

Sterile brome spikelets (including awns) are mainly 40 - 60 mm long

Great brome spikelets (including awns) are mainly 70 - 90 mm long

mm 0 20 40 60 80

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.

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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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