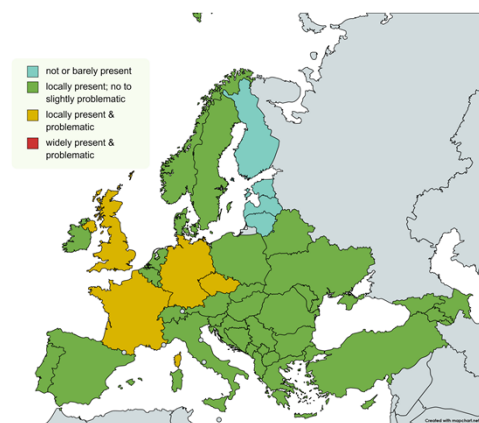


Weed Fact Sheet

Bromus sterilis



Bromus sterilis can be found throughout Europe and South West Asia. While it is not a major weed in agricultural crops in most European countries, it is important as it can be present in high densities, and competes with a large portion of winter sown annual crops.



Weed Biology

EPPO-codes (Latin and common names)	BROST - <i>Bromus sterilis</i> (<i>Anisantha sterilis</i>); sterile or barren brome
Life cycle	Annual
Germination window	July-November
Max. generation/year	1
Occurrence in crop or cultivation system	Field margins, hedgerows, headlands of arable fields, non-inversion tillage
Yield loss	10 plant/m ² = 8 % yield loss in wheat 120 plants/m ² = 35-47 yield loss in wheat and 8-14 % in barley
Preferred environmental conditions	Thrives in minimum cultivation systems; it tends to germinate rapidly & prolifically under moist chopped and spread straw

Ploidy	Diploid (2n=14) & polyploid
Pollination	Self and wind
pollen dispersal	By wind
Seed shattering	Before Harvest
Fecundity (seeds/plant)	50-100
Seed dispersal	By wind/ animals
Distance of seed dispersal	Natural – 99% of seed within 1m of parent plant. Mechanical up to 53 m
Dormancy	Low
Seed bank longevity	< 5 years
Seed decline per year	85-90%

Impact of Agronomic measures on Occurrence and Spread

Germination & dormancy

- Germination predominantly in September to November
- Dormancy is normally short & shallow cultivations encourage emergence
- Leaving seed on the surface can enforce dormancy

Soil cultivation

- Thrives in minimum cultivation systems
- Ploughing seed to a depth of 15-20 cm can be effective in controlling BROST.
- A fallow period including 2 autumn seasons should deplete the seed bank

Crop sowing date & Seed set

- Delayed drilling or stale seedbed preparation possible
- Seed can be viable within 7 days of anthesis
- Therefore plants should not be allowed to set seed.

Crop rotation and competitiveness

Crop rotation with alternation of winter and summer crops, competitive crop varieties and any measure which favour good crop establishment are useful control tools

Weed Fact Sheet

Bromus sterilis



Observed Resistance in Europe

- Resistance to post emergence herbicides is starting to develop
- Countries where resistance is developing; Germany, Czech Republic, France and UK (data current for 2022)
- Cross-resistance between ALS-inhibitors has been reported
- Cross-resistance between ACCase herbicides, has also been reported
- Increased tolerance to glyphosate has been reported in the UK

Mode of Action	HRAC	Resistance level
ACCase	1 (A)	+
ALS	2 (B)	+

+ = low

Target-site Resistance (TSR)

- to ALS-inhibitors, to date no TSR has been documented.

Non Target-Site Resistance (NTSR)

- A UK population has been found to contain enhanced amounts of an orthologue of the glutathione transferase phi (F) class 1 (GSTF1) protein indicating NTSR resistance.

Best Management Practices



- to prevent and mitigate resistance development, follow the [Guideline to the Management of Herbicide Resistance](#) published by GHRAC
- Rotate herbicides from different modes of action on the same weed target throughout the crop rotation and apply them when the plants are small (BBCH11-13)
- Integrate sequential application of soil residual and post-emergence herbicides to reduce selection pressure on post-emergence herbicides
- monitor results of herbicide applications to allow a timely adjustment of weed control strategies when necessary
- Integrate non-chemical methods:
 - Ploughing down seeds to a depth of 15 -20 cm is an effective weed control method.
 - Do not let plants set seed as they become viable within 7 days of anthesis.
 - Fallowing the land for a period which includes two autumn seasons can deplete the seed bank.

Weed Fact Sheet

Bromus sterilis



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