









A BOTANICAL OVERVIEW OF THE MOST COMMON SPONTANEOUS GRASS COVER CROP SPECIES IN OLIVE ORCHARDS

A mix of natural brome grasses is commonly used as spontaneous cover crops in olive farms of southern Spain. The species *Bromus madritensis*, *Bromus hordeaceus* and *Bromus diandrus* are annual plants that emergence in autumn-winter comprising a band of 2 meters wide in the inter-row spacing of the olive orchards. These species are self-seeded every year and they dry naturally after seed production. The first stages of growth do not allow a distinction between species, but their inflorescences and different morphology of caryopses enable their identification.

DID YOU KNOW?

Chemical or mechanical killing methods are often not necessary in southern Spain to control spontaneous grass cover crops because they dry out naturally due to high temperatures in late spring



			
	COMPACT BROME	SOFT BROME	GREAT BROME
Scientific name	<i>Bromus madritensis</i>	<i>Bromus hordeaceus</i>	<i>Bromus diandrus</i>
Bloom	March-May	March-June	March-May
Stem	Up to 60 cm high, glabrous under the panicles	Up to 70 cm high, from minutely to densely pubescent	Up to 110 cm, rough and hairy
Blades	Downy or slightly hairy. Leaf blades are 4–20 cm long and 1–5 mm wide. Glabrous ligules are 1.5–2 mm long	Smaller pubescent leaf blades 2.2–18 cm long and 1–5.3 mm wide. The membranous, erose and glabrous ligules are 1–2.6 mm long	Rough and hairy leaf blades 2–20 cm long and 10 mm wide. The membranous ligules are prominent (3–5 mm long) with spiky hairs
Inflorescences	Ellipsoid panicles are 3–12 cm long. The spikelets are longer than the panicle branches (4–6 cm long) and slightly denser. They vary in colour from green to purplish-red. Subequal and lightly hairy glumes taper at their ends with translucent margins. Glabrous and rough lemmas are 1.5–2 cm long. The awns are 12–23 mm and slightly curved	Panicles are 2.5–14 cm long. Ovate-lanceolate spikelets are smaller than the other species (1.7–3 cm long). The subequal glumes are minutely to densely pubescent and the keels are serrated. The lemmas are shorter than other species (7.5–9 mm long). The awns are 4–7.6 mm long, shorter than the lemma	Wide panicles are 10–25 cm long. Large spikelets (4.5–6 cm long) laterally compressed with a very long awn (>5 cm). Subequal, subulate and scarious glumes shorter than spikelets. The lanceolate lemmas are 2.5–3 cm long, much thinner on the margins with apex dentate. The straight awns are 35–60 mm long
Morphology of caryopses	Linear, 8–13 mm long x 1.8 mm wide with a scarred linear hilum	Fusiform to oblanceolate, edges weakly inrolled and 4.5–7 mm long x 1.5–2 mm wide	Linear, 11–14 mm long x 1–2.8 mm wide with long straight edges
			

Caryopsis' pictures source: Fernando Bastida Milián (University of Huelva, Spain)

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