

SECTION 4

Plant growth and physiology

For more information, see the *GRDC GrowNotes WHEAT (Northern region)*, Section 4: Plant growth and physiology.

4.1 Germination and emergence

Durum crops grow to about 80 cm at maturity (15–20 cm shorter than bread wheat) depending on seasonal conditions and variety.

Low-density crops tend to have heads flowering over a longer interval. Such a prolonged flowering period may reduce the impact of a frost around flowering. Protracted moist weather at flowering can have an adverse effect on pollination by inhibiting the release of pollen from the anthers. If the female part of the flower (the stigma and ovule) is not fertilised while in its receptive phase, a grain will not develop.

Low-density crops are likely to use available soil moisture reserves at a slower rate than the higher density crops.

Avoidance of moisture stress before and at flowering is critical for satisfactory grain set, as pollen will abort during periods of stress as part of a natural survival mechanism of the plant. Extended flowering could reduce the risk of pollination failure caused by frost or extended moist weather.

The time difference in reaching full maturity between early-flowering and late-flowering tillers is usually small; therefore, the early heads are not likely to be ripe for many days ahead of the later heads. Harvesting should not be delayed significantly.^{1 2}



Figure 1: Early durum heads are not likely to ripen well ahead of later heads.

More information

[J Whish \(2016\), Accessing and using day degrees in field crops as a tool to assist crop management.](#)

¹ R Hare (2006) *Agronomy of the durum wheats Kamilaroi, Yallaroi, Wollaroi and EGA Bellaroi*. Primefacts 140, NSW Department of Primary Industries, http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0007/63646/Agronomy-of-the-durum-wheats---Primefact-140-final.pdf

² J Whish (2016), *Accessing and using day degrees in field crops as a tool to assist crop management*. <https://grdc.com.au/Research-and-Development/GRDC-Update-Papers/2016/02/Accessing-and-using-day-degrees-in-field-crops-as-a-tool-to-assist-crop-management>