

### Irrigated chickpea in CQ

(Compiled by Lance Pendergast. Thanks to Belinda Chase, Dave Palarto & Graham Harris for assistance with this article).

**IRRIGATING:** Waterlogging at flowering or podding can kill the crop or significantly reduce yield, especially at higher temperatures. Drainage must be excellent and watering time as short as possible, preferably less than 8 hrs and definitely less than 24 hrs (especially on flat paddocks in heavy soil). While irrigation using raised beds is more common, sprinkler irrigation can also be use but it can encourage foliar diseases like Botrytis grey mould. Worth noting is the recent experience of a local grower who attributes increased yields to the use of 15 inch spacing.

Schedule irrigations on heavy cracking clay soils before deep cracks develop. Cracking damages roots, increases the risk of soil borne diseases and yield losses from waterlogging. Holding irrigation until pods are setting has been suggested as ideal as it avoids the "large lodging bush thing". The later planting dates suit this timing as water is generally required early in August (less time from planting to irrigation – more water efficient, smaller bush, reduced potential for heavy soil cracking). Irrigation of chickpeas post-podding does not provide a yield advantage and reduces your gross margin. According to Kevin McCosker (QDPI&F) it may only be warranted if you've lost all flowers and pods through a freakish frost or you have a centre pivot on lighter country. Another option that has been suggested is to water very early, within 4 weeks of planting and walk away from irrigation. This does not seem to have the yield potential of the above option but has less risks of waterlogging effects when trying to set a crop.

**SOWING TIME:** Chickpeas are often regarded as secondary to wheat in the winter crop regime, and as a consequence tend to be planted either before, or after wheat planting, and outside of their preferred planting window. The planting date has a major impact on actual crop yields as the flowering date will determine whether or not fertile flowers are produced and pods formed. Chickpeas are very susceptible to cold conditions especially at flowering - it is the average day/night temperature that is critical rather than any specific effects of maximum or minimum temperatures. The critical mean, or average daily temperature for abortion of flowers in most current varieties is below 15°C. Abortion below this temperature occurs because the pollen becomes sterile and reproductive structures do not develop.

Table 1 provides an indication of when flowering is likely to occur given different planting dates. If flowering starts before average temps reach 15°C

then flowers will continue to abort until temperatures increase above this critical value. If sowing date occurs significantly before average daily temp' reach 15°C then the crop continues to grow vegetatively and will use water. Water use efficiencies will decline under such circumstances.

CQ typically experiences average daily temperatures below 15°C in the last week of June through to the last week in July and is fortunate in that we are not as exposed to the risk of frost as southern growers. Whilst a 15-April planting date has a 10% chance of exposure to a minus 10°C frost or colder during late flowering/early pod fill the risk for 1-May and 15-May plantings is reduced to 3% ,and none for later planting dates (based on simulated frost risk for Amethyst plantings by M Robertson, CSIRO).

**Table 1:** Average date for flowering to commence on 50% of plants and maturity (pods brown) on 95% of plants in the paddock in Emerald (cv.Amethyst)

Sowing Date	Flowering date (50% flower)	Maturity Date (90% brown pods)	Days after planting to start of flowering
1-May	30-June	12-Sept	181
15-May	18-July	15-Sept	199
1-June	5-Aug	8-Oct	218
15-June	19-Aug	17-Oct	231
1-July	31-Aug	26-Oct	244
15-July	10-Sept	3-Nov	254

(Source: Certified Chickpea Agronomy Course booklet)

### So...when to plant?

The last quarter of April and the first quarter of May has been considered the preferred planting times for Central Queensland whilst planting in the third quarter of April, or the second and third quarters of May have been regarded as marginal because of increased costs and/or lower yields. Crops planted early in April result in big plants that look great but have a poor harvest index and increased potential for lodging. The same yields can be achieved with May (or maybe June) plantings with less exposure to water deficits and insects. Recent local experience has suggested that mid May to mid June plantings are ideal. Sorry no definitive answers here - perhaps the on-farm trials this season will help clarify further.

### Up Coming Events

- Resistance Roadshow: Emerald 26th May 1pm  
DPI Large Conference Room  
Monitoring, assessment and interpretation of soil for crop nutrition Workshop:
- Emerald: DPI Conference Room ,Tuesday 27th May 08, 9:00 am – 3:00pm
- Theodore:Theodore Hotel, Wednesday 28th May 08 9:00 am – 3:00pm