



NORTHERN PULSE CHECK

Mungbean Update January 2020



After the rain, what options

It has been a long time between drinks and now it has come in its usual summer way – patchy - some have had good rain with neighbours much less. Now that mid-January has arrived it will lead to questions about how best to utilise the moisture that's available.

A big question will be “Do I plant now or save for winter crop?” if the answer is Yes to planting now, the next question is “what do I plant?”

The vast majority of paddocks are devoid of cover and will be a priority for many to establish some cover in the form of millets or sorghum. This will be important to maximise capture of follow up rain and limit erosion from heavy rain. However, this does not generate cash flow which also needs to be considered.

Options for cash flow could be a forage crop of sorghum or corn for silage/hay. Consideration needs to be given to the amount of nutrient removed in the forage and possibly compaction issues. Millet and sorghum for grain are a longer shot, especially with the risk of ergot with late season sorghum.

A good candidate for quick cash flow is mungbeans. They are a relatively short season crop and the current market prices are very favourable.

This is not to suggest that a late January plant is ideal for southern Queensland or northern New South Wales and the yields would not be expected to be at full potential, however the good prices and prospects for a harvest would make them a choice to strongly consider for cash flow.



Will they make it?

Mungbeans as a short season crop of around 90 days duration. The length of season is driven mainly by temperature and is influenced by the number of hours of sunlight during the day.

The estimated time to maturity can be estimated by using thermal time (growing degree days). Mungbeans require approximately 1200 day degrees (°Cd) and can be calculated using the average of the daily maximum and minimum temperatures minus a base

temperature of 8°C. (*NB The variety Celera II has a lower requirement and will be quicker to maturity than large seeded varieties.)

Eg max temp 34°C and min 17°C = (34+17)/2 = 20.5 minus 8 = 12.5°Cd

If every day was the same as the example then it would take the crop 96 from plant to maturity. Every day is not the same and will be different for all locations as can be seen in Table 1. The below table is based on planting after this rain event on the 25th of January based purely on thermal time and has no allowance for shortening day length, it would be assumed that actual days to maturity will be somewhat longer.

	Average Temp (°C)	Jan	Feb	Mar	Apr	May	Days to Maturity
Thangool	Max	33.8	33.0	32.1	29.6	26.3	68
	Min	19.7	19.8	18.0	14.1	10.0	
Dalby	Max	32.6	31.7	30.3	27.3	23.3	76
	Min	18.8	18.5	16.6	12.5	8.3	
Surat	Max	34.3	33.5	31.8	28.2	23.6	67
	Min	20.8	20.3	18.0	13.2	8.8	
Mungindi	Max	35.6	34.2	32.0	27.8	23.2	66
	Min	20.7	20.3	17.7	12.9	8.8	
Toowoomba	Max	28.4	27.6	26.2	23.3	19.9	93
	Min	17.6	17.6	16.5	13.4	10.0	
Inverell	Max	30.9	30.2	28.4	24.8	20.6	111
	Min	15.5	14.8	12.3	7.6	3.6	
Moree	Max	34.2	33.3	31.2	27.4	22.6	70
	Min	20.4	19.7	17.4	12.8	8.3	
Narrabri	Max	34.9	33.8	31.1	27.1	22.5	70
	Min	20.5	19.6	16.8	12.5	7.5	

Table 1 Average minimum and maximum temperatures for locations and days to maturity for mungbeans planted on the 25th of January (Source: www.bom.gov.au)

Using the estimates of time to maturity in Table 1 you can make some educated guesses as to whether the crop will make it through before the first frosts and cooler overnight temperatures leading into March and April.

The current Bureau of Meteorology long term forecast that was released on the 16th of January 2020 suggest that there is a higher chance of above average temperatures for the next 3 months and in particular it is the minimum temperatures that are likely to exceed the median temperatures (Figure 1). With minimum temperatures more likely to be above the median this would bode well for Mungbeans which have a critical minimum temperature of 15°C, temperatures below this will retard growth.



There is a risk that leading into the cooler months that the mean temperature (maximum and minimum) will be below 28-30°C which may lead to shorter internode lengths and overall plant height. This will need to be a consideration with regards to paddock selection.

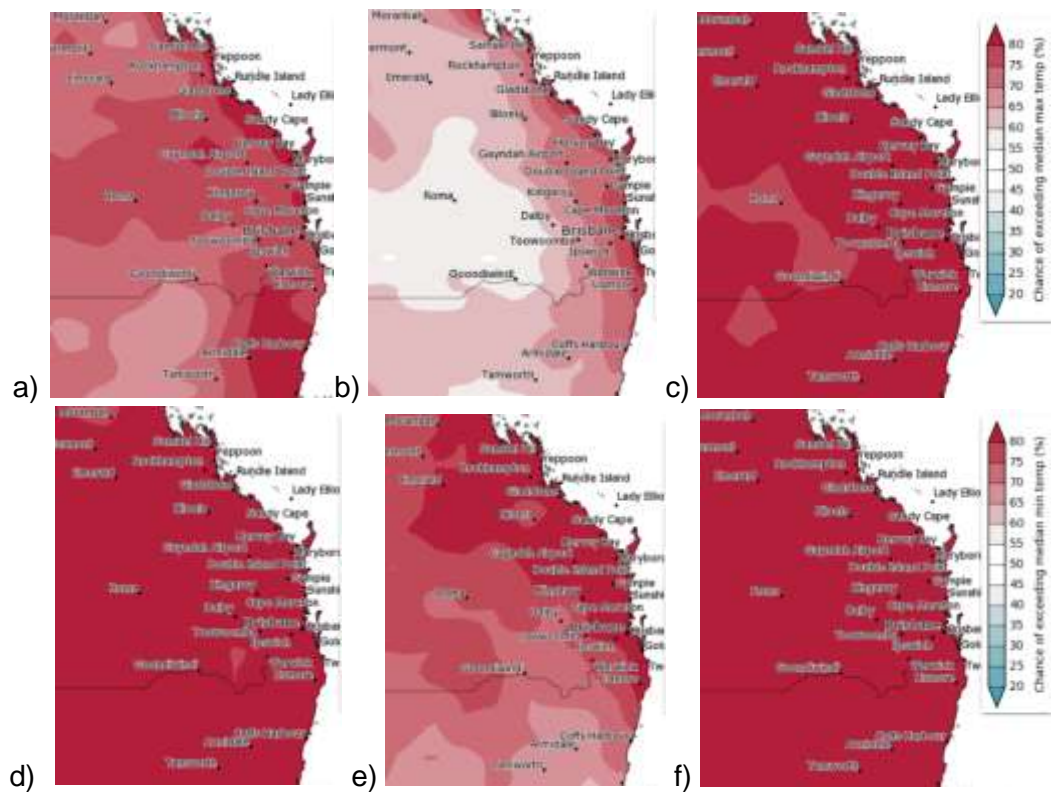


Figure 1 Bureau of Meteorology seasonal temperature forecast issued 16th January 2020, chance of above median - a) February maximums, b) March maximums, c) Feb to April maximums, d) February minimums, e) March minimums, f) Feb to April minimums. (Source: www.bom.gov.au/climate/outlooks/#/overview/summary)

Other Considerations

Some other topics to consider if deciding to plant Mungbeans in late January:

- Plant Available Water, Mungbeans require a minimum of 75mm of PAW in the profile to ensure a crop is harvested, check infiltration after this rain event to determine there is at least this amount or more, and follow up rain is also required.
- Residual herbicides, given the long dry what has been the history of herbicides and has there been sufficient time for risky products to have broken down.
- Long fallow disorder, after a long time with no growth in paddocks there is a risk that AMF (previously known as VAM) levels have dropped which may require increased rates of phosphorous and zinc fertilisers.
- Disease, late planting time may lead to a higher incidence of halo blight in the crop – recommend using approved AMA seed. Powdery mildew will become prevalent late in the season with cooling overnight temperatures, check crop early, regularly and control at first sight.
- Celera II, a small seeded variety, has a quicker maturity than large seeded types and finish up to 2 weeks earlier, however it has a limited market and having contact with a mungbean marketer before choosing this variety is advised.
- Crops may be shorter with a late plant, are you or contractor equipped to harvest shorter crops.
- Weather at maturity, with lower temperatures dry down will be longer leaving the crop at higher risk from rainfall and downgraded seed quality. Use desiccation products if required at recommended rates and timings.

Further Information

GRDC GrowNotes Mungbeans - <https://grdc.com.au/resources-and-publications/grownotes/crop-agronomy/grownotesmungbeansnorthern>

Australian Mungbean Association – Agronomy <http://www.mungbean.org.au/agronomy.html>

Agronomic Strategies to Increase Mungbean Yield in Variable Climates - <https://www.preprints.org/manuscript/201805.0182/v1/download>

Powdery Mildew Management - <https://communities.grdc.com.au/field-crop-diseases/mungbean-powdery-mildew-fungicide/>

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