

Primefact

Langi growing guide

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Langi is a semi-dwarf, long grain variety that has soft cooking (low amylose) properties. It is predominantly grown in the Murrumbidgee Irrigation Area (MIA) and Coleambally Irrigation Area (CIA) and is susceptible to shedding grain once mature.

Yield potential

The yield potential of Langi is 87% of Matilda[Ⓢ] (V071; Table 1).

Table 1. Average grain yield of Langi and Matilda[Ⓢ] from experiments and commercial fields over 5 seasons.

5 year average yield (t/ha)	Langi	Matilda [Ⓢ]
Experiment average	11.2	12.8
Grower average	9.4	11.7

Establishment vigour

Experiments show Langi to have moderate establishment vigour.

Sowing method and date

All sowing methods, i.e. aerial, dry broadcast (DB), drill and delayed permanent water (DPW), are suitable for growing Langi and have the same grain yield potential when managed appropriately.

The recommended sowing and first flush windows for Langi are shown in Table 2.

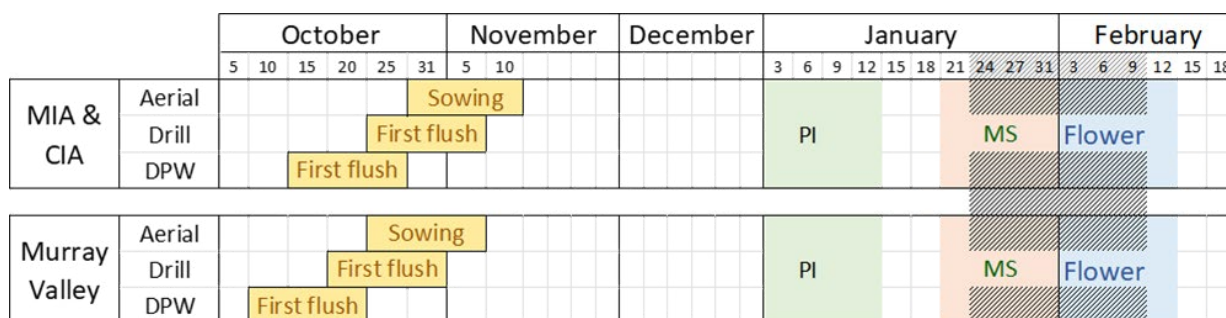
Table 2. Target sowing and first flush dates for Langi for different sowing methods in different regions.

MIA/CIA			Murray Valley		
Aerial/DB	Drill	DPW	Aerial/DB	Drill	DPW
25 Oct–10 Nov	20 Oct–5 Nov	10–25 Oct	20 Oct–5 Nov	15–31 Oct	5–20 Oct

MIA = Murrumbidgee Irrigation Area, CIA = Coleambally Irrigation Area, DB = dry broadcast, DPW = delayed permanent water.

Sowing date recommendations for Langi aim to ensure the critical microspore and flowering phases align with the period of least risk of low temperatures (Figure 1).

Sowing earlier or later than recommended increases the risk of exposure to low temperatures during microspore and flowering, which can reduce grain yield.



MIA = Murrumbidgee Irrigation Area, CIA = Coleambally Irrigation Area, PI = panicle initiation, MS = microspore.

Figure 1. Recommended sowing and first flush dates for Langi and the subsequent panicle initiation (PI), microspore (MS) and flowering timing when sown in the recommended period for each district and sowing method. The hatched area shows the time of least risk of low temperatures.

Sowing rate

It is recommended that Langi be sown at 130 kg/ha for all sowing methods, aiming to establish between 100 and 200 plants/m². Sowing rates can be reduced by 10–20% when drill sowing if the seed is placed at a consistent depth and in good establishment conditions.

Sow a compound fertiliser containing phosphorus and zinc with the seed when drill sowing.

Cold tolerance

Langi has a moderate tolerance to cold stress during the early pollen microspore and flowering periods.

Plant height

Langi has an average height of 90 cm, 10 cm taller than Matilda^Φ.

Lodging potential

Langi has intermediate resistance to lodging, which can be induced by applying excessive nitrogen pre-permanent water (PW). The effect of pre-PW nitrogen application on lodging of Langi is shown in Figure 2.

Langi will also lodge if left in the field once mature for an extended period before harvest.

Grain shattering

Early harvest of Langi is recommended as it is susceptible to shedding grain once the crop is mature. It is the most prone of all current commercial varieties to shattering.

Nitrogen management

Langi nitrogen applications should be **split 70:30 between pre-PW and PI** to reduce lodging and cold susceptibility risks.

It is recommended to apply between **180 and 260 kg/ha urea at pre-PW** to Langi (Figure 2). Fields with a history of legumes might require less nitrogen pre-PW and some continuous-cropped fields with heavy clay soil might require more nitrogen. The yield of Langi with a range of pre-PW urea rates compared to Matilda^Φ is shown in Figure 3.

Any major field variability in nitrogen should be amended pre-PW. Nitrogen uptake maps of previous rice crops grown in the field are a good resource for identifying soil nitrogen variability.

Applying higher than required rates of nitrogen pre-PW increases a rice crop's susceptibility to cold stress more than extra nitrogen applied at panicle initiation.

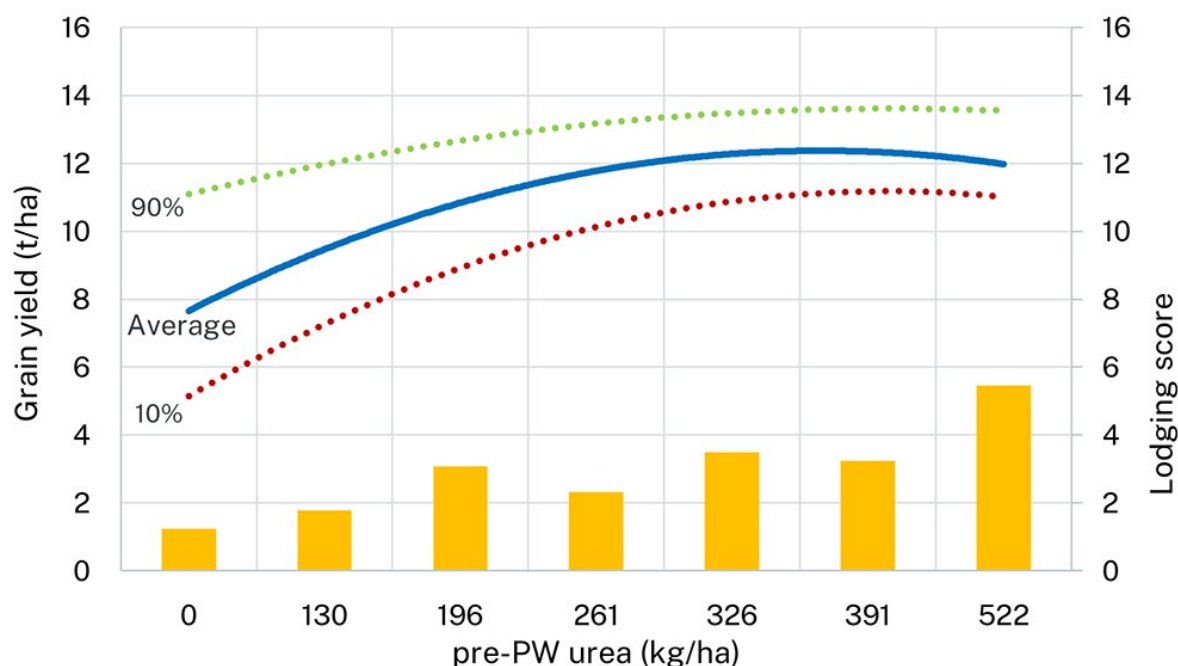


Figure 2. Langi grain yield (average, 10 and 90 percentiles) and average lodging score (orange bars, 1 = standing, 10 = flat) results for pre-PW (permanent water) nitrogen application rates (no panicle initiation (PI) applied nitrogen). Results are from 223 plots in 25 experiments conducted over 9 seasons with a range of soil types, fertility levels and sowing methods.

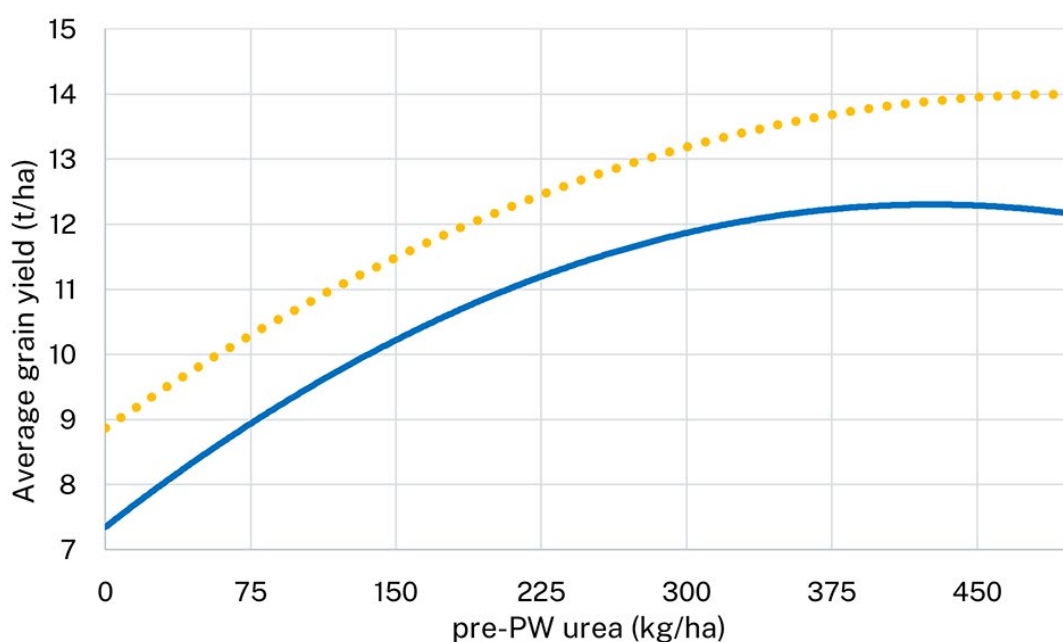


Figure 3. Average grain yields for Langi (solid line) compared to Matilda[®] (dashed line) for a range of pre-permanent water nitrogen applications (no panicle initiation (PI) applied nitrogen).

Panicle initiation nitrogen

Langi produces a high grain yield with less lodging and reduced cold susceptibility when nitrogen is split between pre-PW and PI.

For maximum grain yield with reduced lodging, it is important to use nitrogen uptake maps and the NIR tissue test to determine PI nitrogen top-dressing rates. Higher than required nitrogen rates applied at PI can increase lodging and reduce profitability.

Harvest

Be prepared to start harvesting Langi as soon as the grain moisture drops to 22%. Delaying harvest after the crop is mature will increase the risk of grain shedding and lodging, and reduce grain quality.

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