

Primefact

Topaz[Ⓛ] growing guide

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Topaz[Ⓛ] is a semi-dwarf, fragrant, long grain variety that is recommended to only be grown in the Murrumbidgee Irrigation Area (MIA) and Coleambally Irrigation Area (CIA) due to low cold stress tolerance and seedling vigour.

Yield potential

The yield potential of Topaz[Ⓛ] is 82% of Matilda[Ⓛ] (V071; Table 1). It is highly susceptible to low temperatures during the reproductive period.

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

5 year average yield (t/ha)	Topaz [Ⓛ]	Matilda [Ⓛ]
Experiment average	10.4	12.6
Grower average	8.9	11.7

Establishment vigour

Topaz[Ⓛ] has the poorest establishment vigour of all commercial varieties. Care must be taken with seed depth to ensure adequate establishment.

Sowing method and date

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

The recommended sowing and first flush windows for Topaz[Ⓛ] are listed in Table 2.

Table 2. Target sowing and first flush dates for Topaz[Ⓛ] for different sowing methods in the Murrumbidgee Irrigation Area (MIA) and Coleambally Irrigation Area (CIA).

Aerial/dry broadcast	Drill	Delayed permanent water
20 Oct–5 Nov	15–31 Oct	5–20 Oct

Sowing date recommendations for Topaz[Ⓛ] 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.

		October					November				December				January							February							
		5	10	15	20	25	31	5	10					3	6	9	12	15	18	21	24	27	31	3	6	9	12	15	18
MIA & CIA	Aerial					Sowing																							
	Drill				First flush																								
	DPW	First flush																											

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

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

Sowing rate

It is recommended that Topaz[®] be sown at 140 kg/ha for all sowing methods, aiming to establish between 100 and 200 plants/m². Topaz[®] has a greater sowing rate than other varieties to account for the variety's poor establishment vigour.

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

Cold tolerance

Topaz[®] has **low tolerance to cold stress** during the early pollen microspore and flowering periods. It must be sown in the recommended window with particular attention paid to water management.

Water levels should be kept low during tillering to encourage shorter plants and then increased to at least 25 cm deep after PI until mid-flowering.

Plant height

Topaz[®] has an average height of 85 cm, 5 cm taller than Matilda[®].

Lodging potential

Topaz[®] is resistant to lodging, but it can be induced by applying excessive nitrogen pre-PW and delaying harvest until well past maturity.

Grain shattering

Topaz[®] is moderately resistant to shedding grain once the crop is mature.

Nitrogen management

Topaz[®] nitrogen applications should be **split 70:30 between pre-PW and PI** to reduce cold susceptibility risks.

It is recommended to apply between **180 and 260 kg/ha urea** at pre-PW to Topaz[®] (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 Topaz[®] from a range of pre-PW urea rates compared to Matilda[®] is shown in Figure 3.

Applying higher than required rates of nitrogen pre-permanent water (PW) increases a rice crop's susceptibility to cold stress more than extra nitrogen applied at PI.

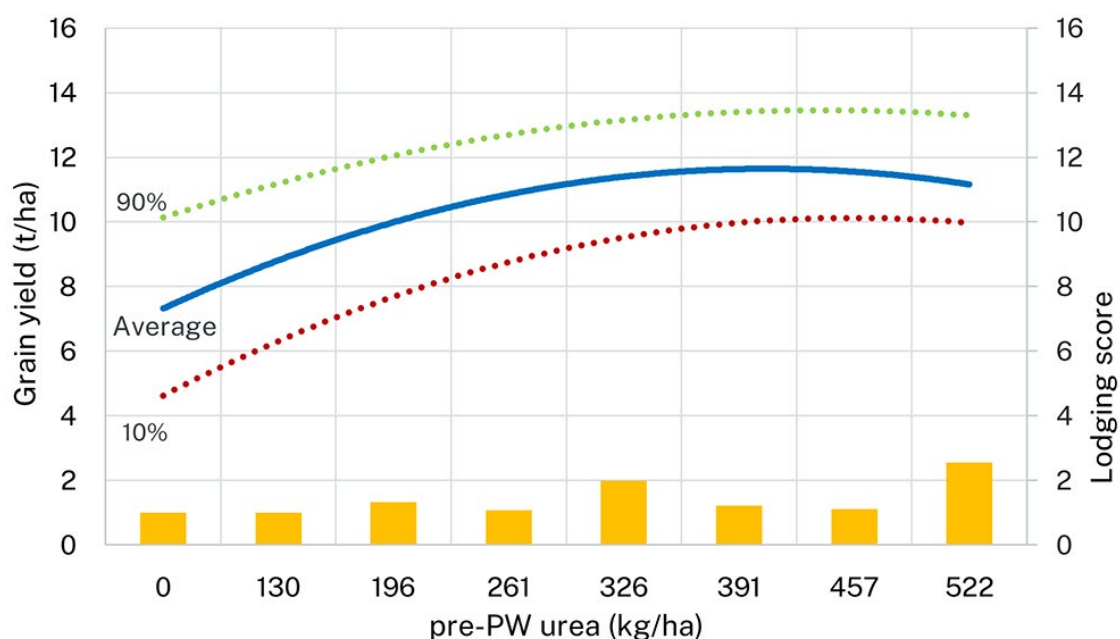


Figure 2. Topaz[®] grain yield (average, 10 and 90 percentiles) and average lodging score (orange bars, 1 = standing, 10 = flat) results for pre-PW (permanent water) nitrogen application rates (no panicle initiation (PI) applied nitrogen). Results are from 175 plots in 21 experiments conducted over 9 seasons with a range of soil types, fertility levels and sowing methods.

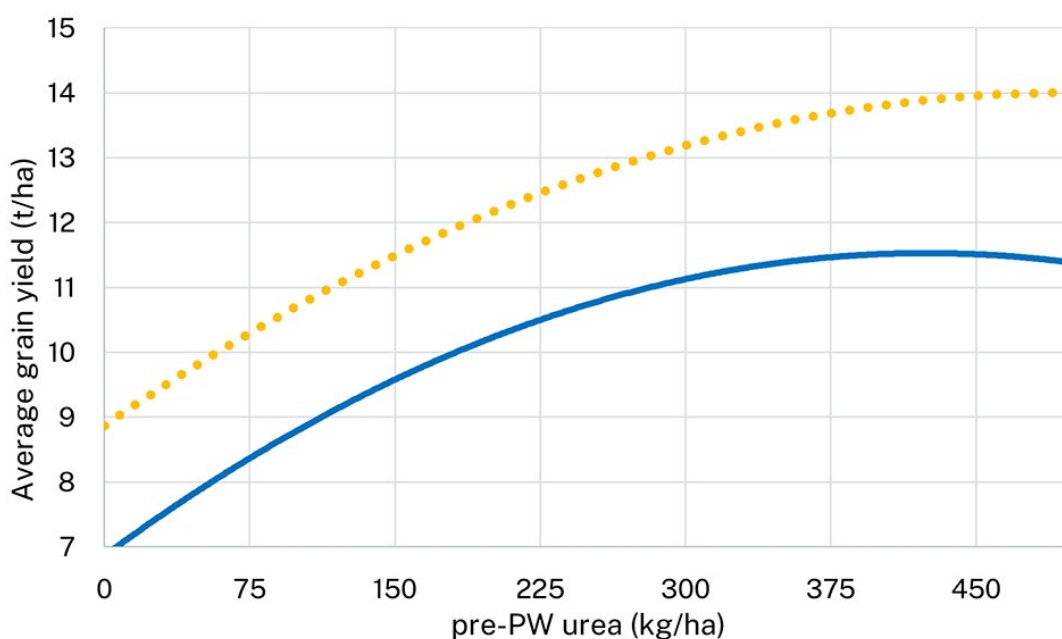


Figure 3. Average grain yield for Topaz[®] (solid line) compared to Matilda[®] (dashed line) with a range of pre-PW (permanent water) nitrogen application rates.

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.

Panicle initiation nitrogen

Topaz[®] produces a high grain yield with lower susceptibility to cold 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 harvest as soon as the grain moisture drops to 22%. Delaying harvest will increase the risk of lodging, which can cause difficult harvesting conditions and reduce grain quality.

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