Department of Primary Industries
and Regional Department

Primefact

Sherpa$^{\Phi}$ growing guide

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Sherpa$^{\Phi}$ is a semi-dwarf, medium grain variety that has good cold stress tolerance.

Yield potential

The grain yield potential of Sherpa$^{\Phi}$ is equivalent to Matilda$^{\Phi}$ (V071; Table 1).

Table 1. Average grain yield of Sherpa$^{\Phi}$ and Matilda$^{\Phi}$ from experiments and commercial fields over 5 seasons.

5 year average yield (t/ha)	Sherpa$^{\Phi}$	Matilda$^{\Phi}$
Experiment average	13.3	13.2
Grower average	9.9	11.7

Establishment vigour

Experiments show Sherpa$^{\Phi}$ 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 Sherpa$^{\Phi}$ and have the same grain yield potential when managed appropriately.

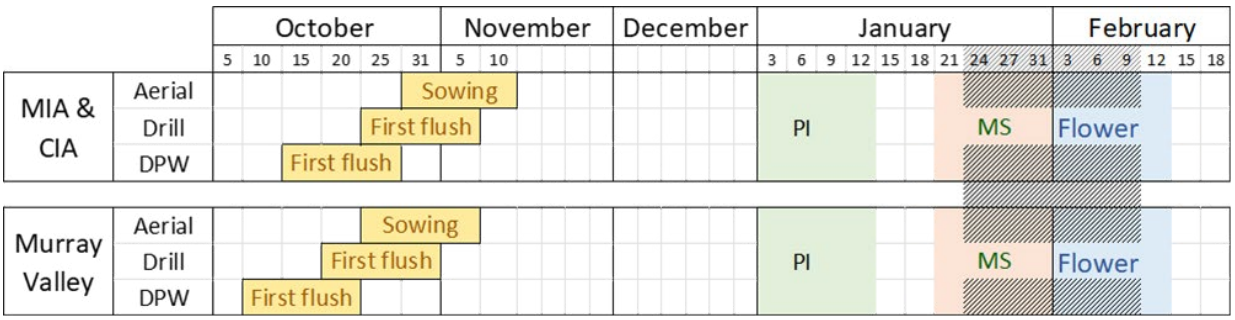
The recommended sowing and first flush windows for Sherpa$^{\Phi}$ are listed in Table 2.

Table 2. Target sowing and first flush dates for Sherpa$^{\Phi}$ for different sowing methods and 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 Sherpa$^{\Phi}$ 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 Sherpa$^{\Phi}$ 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 Sherpa$^{\Phi}$ be sown at 130 kg/ha for all sowing methods, aiming to establish between 100 and 200 plants/m^2. 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

Sherpa$^{\Phi}$ has a high tolerance to cold stress during the early pollen, microspore and flowering reproductive periods.

Plant height

Sherpa$^{\Phi}$ has an average height of 80 cm, the same height as Matilda$^{\Phi}$.

Lodging potential

Sherpa$^{\Phi}$ is moderately resistant to lodging, but it can be induced by applying excessive nitrogen pre-permanent water (PW). The effect of pre-PW nitrogen application rates on lodging of Sherpa$^{\Phi}$ is shown in Figure 2.

Grain shattering

Sherpa$^{\Phi}$ has moderate susceptibility to shedding grain once the crop is mature, similar to Matilda$^{\Phi}$.

Nitrogen management

It is recommended to apply between **200 and 340 kg/ha urea** to Sherpa$^{\Phi}$ crops pre-PW (Figure 2). Fields with a history of legumes might require less pre-PW nitrogen, and some continuous-cropped fields with heavy clay soil might require more pre-PW nitrogen.

Sherpa$^{\Phi}$ is a durable variety with a long grain yield plateau before yield declines due to sterility or lodging becomes a problem from excess nitrogen application (Figure 2).

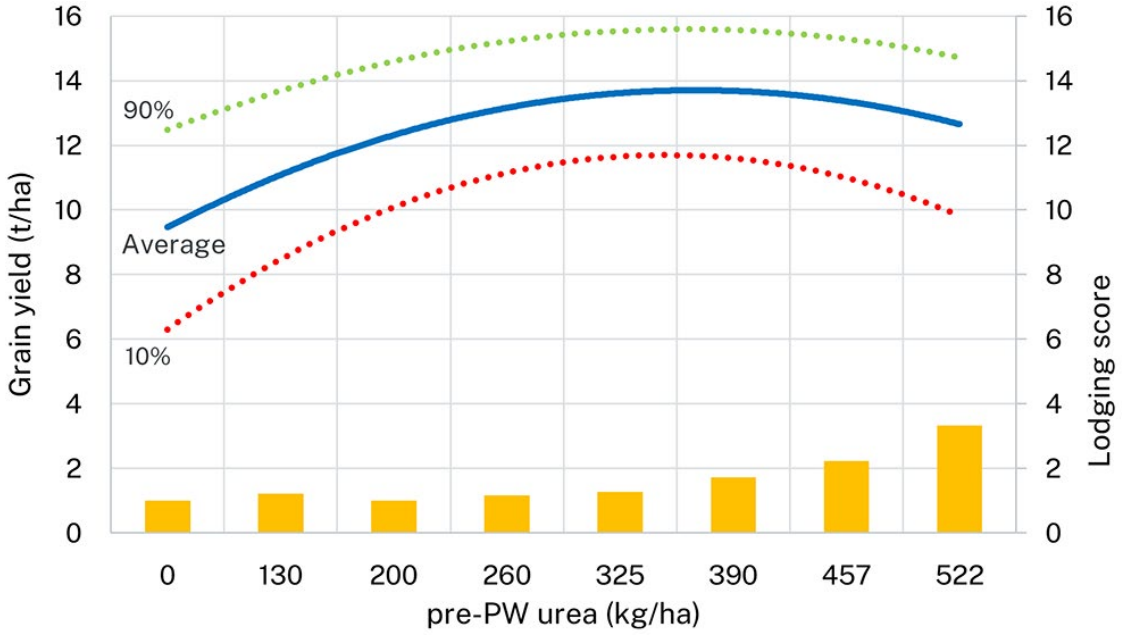


Figure 2. Sherpa$^{\Phi}$ grain yield (average, 10 and 90 percentiles) and average lodging score (orange bars, 1 = standing, 10 = flat) results for pre-PW (permanent water) nitrogen application rates (no panicle initiation (PI) applied nitrogen). Results are from 319 plots in 39 experiments conducted over 10 seasons with a range of soil types, fertility levels and sowing methods.

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.

Sherpa$^{\Phi}$ has similar nitrogen requirements to Matilda$^{\Phi}$ to reach its maximum grain yield potential (Figure 3).

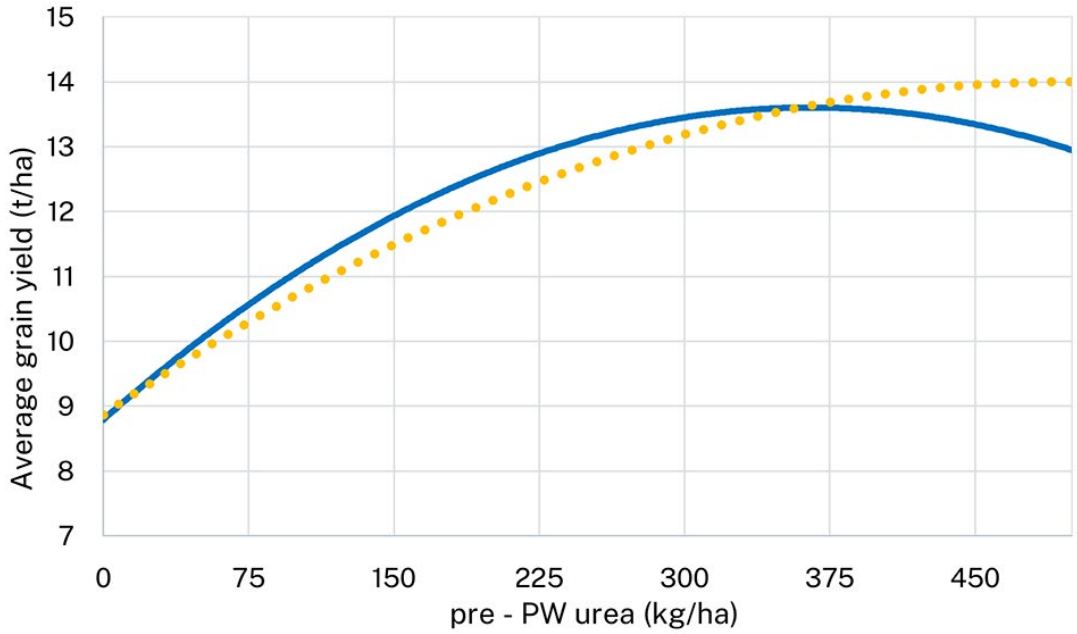


Figure 3. Average grain yield for Sherpa$^{\Phi}$ (solid line) compared to Matilda$^{\Phi}$ (dashed line) with a range of pre-PW (permanent water) nitrogen application rates.

Adequate nitrogen must be applied pre-PW to achieve maximum grain yield, as PI-applied nitrogen is limited in how much it can increase yield. Aim to apply 80 to 90% of the total required nitrogen before PW and then top up at PI if required.

In warm seasons, maximum grain yield can be achieved by applying all the required nitrogen pre-PW. However, in seasons where low temperatures occur during microspore or flowering, excess pre-PW nitrogen can increase sterility and reduce grain yield.

Panicle initiation nitrogen

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.

Extra nitrogen applied at PI does not increase a rice crop's susceptibility to cold stress as much as applying higher than required rates of nitrogen before PW.

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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