Department of Primary Industries
and Regional Department

Primefact

Viand$^{\Phi}$ growing guide

August 2025, Primefact 1484, sixth edition
Rice Research Agronomy Team*, NSW DPIRD

Viand$^{\Phi}$ is a semi-dwarf, medium grain rice variety that is 10–14 days earlier to flower than all current commercial rice varieties.

Yield potential

The yield potential of Viand$^{\Phi}$ is 93% of Matilda$^{\Phi}$ (V071). The lower grower average yield for Viand$^{\Phi}$ is due to it often being grown later than recommended and in double-crop and salvage situations (Table 1).

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

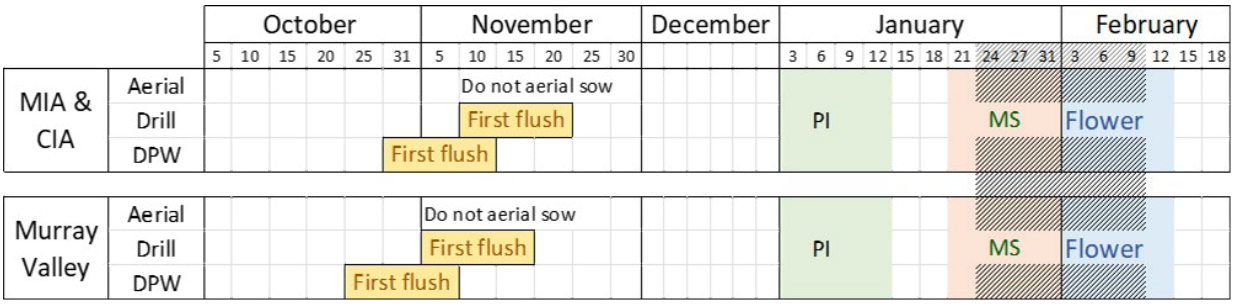
5 year average yield (t/ha)	Viand$^{\Phi}$	Matilda$^{\Phi}$
Experiment average	12.1	13.0
Grower average	8.4	11.7

Sowing and establishment

Viand$^{\Phi}$ should **only be drill sown** as it is more prone to lodging when aerial sown.

As Viand$^{\Phi}$ is an early maturity variety, it is sown later than all other varieties, so microspore and flowering occur when there is the highest probability of warm temperatures (Figure 1).

The recommended first flush dates for Viand$^{\Phi}$ are shown in Table 2.



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

Figure 1. Recommended first flush dates for Viand$^{\Phi}$ 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.

Table 2. Target first flush dates for Viand$^{\Phi}$ for different sowing methods and regions.

MIA/CIA		Murray Valley	
Drill	**DPW**	**Drill**	**DPW**
5–20 Nov	25 Oct–10 Nov	1–15 Nov	20 Oct–5 Nov

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

If Viand$^{\Phi}$ receives its first flush later than the recommended time, do not delay permanent water, as this will slow crop development, which can increase the risk of cold susceptibility and a late harvest.

Viand$^{\Phi}$ has strong establishment vigour, and because it is quicker to flower (Figure 2), it can be sown later, when it will be warmer, which further improves establishment.

Figure 2. The difference in maturity between Viand$^{\Phi}$ (left) and Matilda$^{\Phi}$ (right) at flowering. Photo: Tina Dunn, NSW DPIRD.

Sowing rate

It is recommended that Viand$^{\Phi}$ be sown at 130 kg/ha, aiming to establish between 100 and 200 plants/m^2. Sowing rates can be reduced by 10–20% if sown at a consistent seed depth and in good establishment conditions.

Dense plant populations increase lodging potential and should be avoided when growing Viand$^{\Phi}$.

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

Cold tolerance

Viand$^{\Phi}$ has a moderate tolerance to cold stress during the reproductive period, but is not as tolerant as Sherpa$^{\Phi}$ and Matilda$^{\Phi}$. Viand$^{\Phi}$ should be sown at the correct time and deep water applied over the microspore period to reduce cold risk.

Plant height

Viand$^{\Phi}$ has an average height of 81 cm, 1 cm taller than Matilda$^{\Phi}$.

Lodging potential

Viand$^{\Phi}$ is moderately susceptible to lodging, which can be further induced by applying excessive nitrogen pre-permanent water (PW). Aerial sowing and dense plant stands also increase lodging potential.

Grain shattering

Viand$^{\Phi}$ has moderate susceptibility to shedding grain, so it should be harvested as soon as possible once the crop is mature.

Nitrogen management

Viand$^{\Phi}$ nitrogen applications should be **split 70:30 between pre-PW and PI** to reduce lodging and cold susceptibility risk.

It is recommended to apply between **180 and 260 kg/ha urea** at pre-PW to Viand$^{\Phi}$. This should provide enough nitrogen for the crop to have sufficient growth by PI to reach maximum yield potential without greatly increasing lodging potential (Figure 3).

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 Viand$^{\Phi}$ with a range of pre-PW urea rates compared to Matilda$^{\Phi}$ is shown in Figure 4.

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.

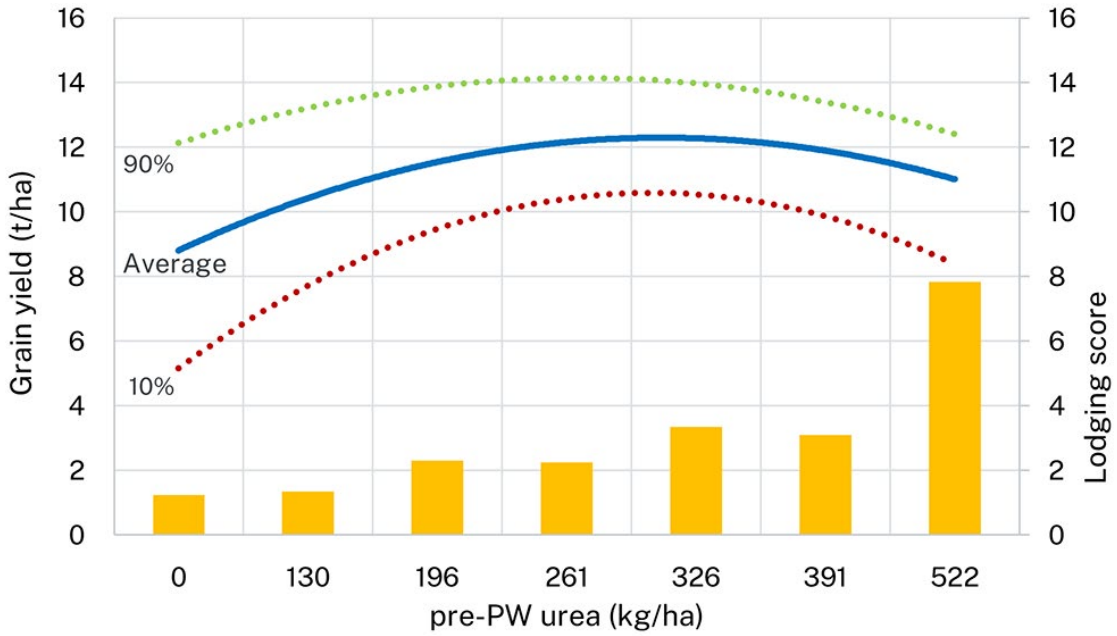


Figure 3. Viand$^{\Phi}$ grain yield (average, 10 and 90 percentiles) and average lodging score (orange bars, 1 = standing, 10 = flat) results for pre-PW (permanent water) nitrogen application rates (no panicle initiation (PI) applied nitrogen). Results are from 210 plots in 28 experiments conducted over 10 seasons with a range of soil types, fertility levels and sowing methods.

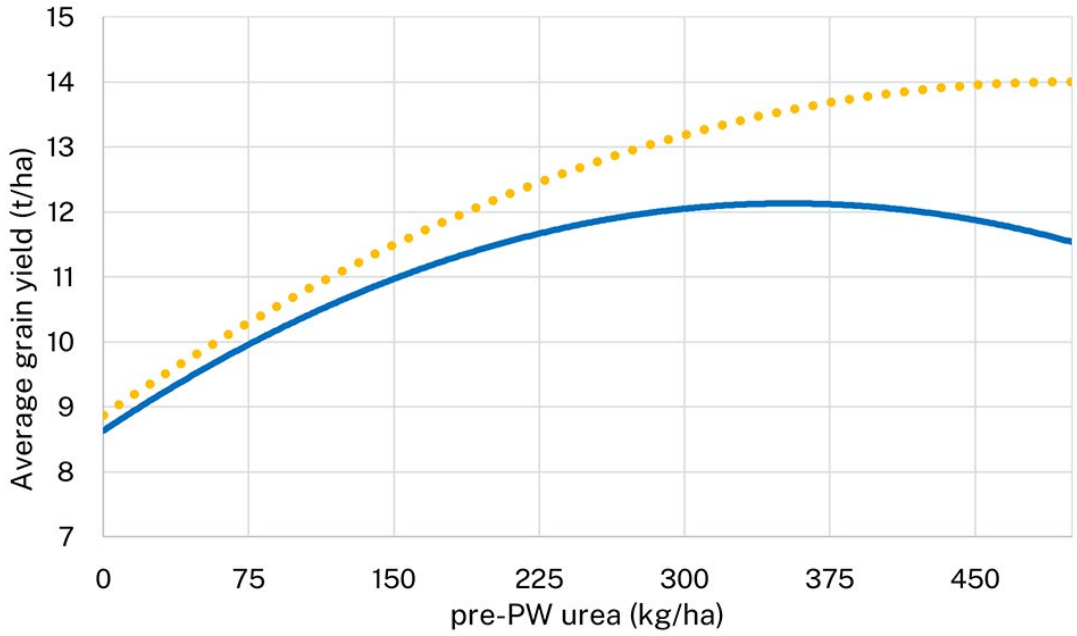


Figure 4. Average grain yield for Viand$^{\Phi}$ (solid line) compared to Matilda$^{\Phi}$ (dashed line) with a range of pre-PW (permanent water) nitrogen application rates.

Panicle initiation nitrogen

Viand$^{\Phi}$ produces a high grain yield with less lodging and reduced cold susceptibility when nitrogen is split between pre-PW and PI.

In an experiment at Jerilderie, split nitrogen treatments produced a similar grain yield to when all the nitrogen was applied pre-PW, but with less lodging (Figure 5).

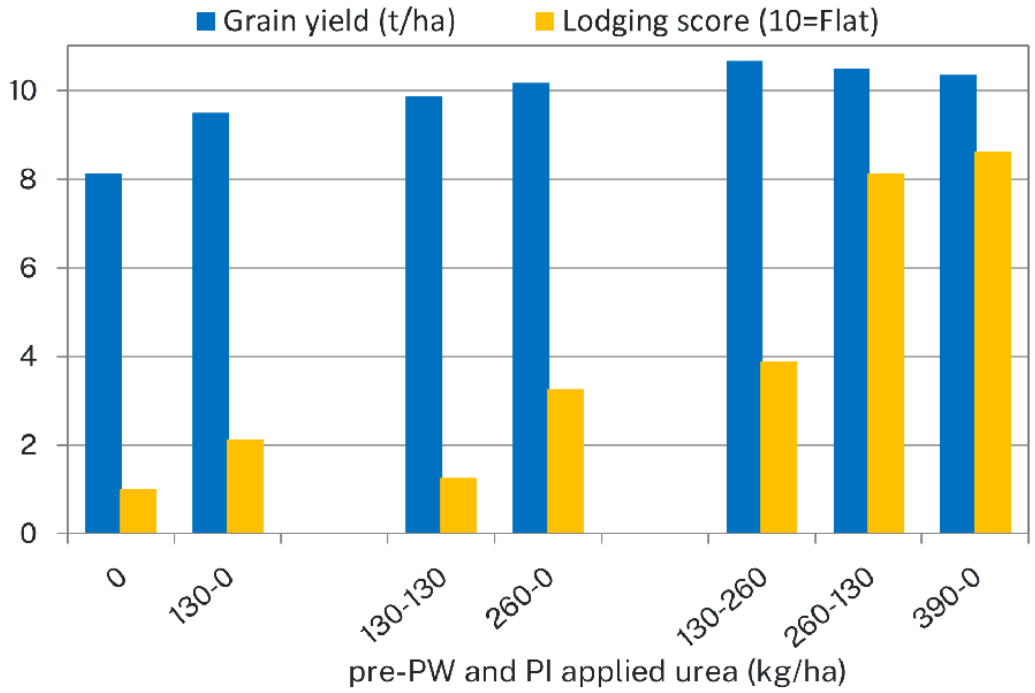


Figure 5. Grain yield and lodging scores from a Viand$^{\Phi}$ nitrogen rate by timing experiment conducted at Jerilderie. The blue bars are grain yield (t/ha @ 14%) and the orange bars are the lodging score (1 = standing, 10 = flat) for the range of nitrogen treatments applied pre-PW (permanent water) and at PI (panicle initiation).

For maximum grain yield with reduced lodging, it is important to use the nitrogen uptake maps and PI 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 after the crop is mature will increase the risk of grain shedding and lodging, which can cause difficult harvesting conditions and reduced grain quality.

Acknowledgements

The research used in this publication is a collaboration between NSW Department of Primary Industries and Regional Development and AgriFutures. Average grower grain yields are supplied by Rice Extension and variety cold tolerance by The University of Queensland.

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ISSN: 1832-6668