Department of Primary Industries
Department of Regional NSW

DPI Primefact

Reiziq$^{\Phi}$ growing guide

June 2023, Primefact 1644, fourth edition
Brian Dunn, Research Agronomist, NSW DPI, Yanco
Tina Dunn, Technical Officer, NSW DPI, Yanco

Reiziq$^{\Phi}$ is a semi-dwarf, bold, medium grain rice variety with an elongated grain length.

Yield potential: Reiziq$^{\Phi}$ has a high grain yield potential (Table 1).

Table 1. Five-year average experiment and commercial field grain yields for Reiziq$^{\Phi}$.

5 year average yield (t/ha)	MIA/CIA	Murray Valley
Experiment average	12.8	11.6
Grower average	10.8	9.8

MIA: Murrumbidgee Irrigation Area. CIA: Coleambally Irrigation Area.

Establishment vigour: experiments have shown Reiziq$^{\Phi}$ to have the strongest establishment vigour of the current varieties.

Sowing method and date: all sowing methods i.e. aerial, dry broadcast, drill and delayed permanent water (DPW) are suitable for growing Reiziq$^{\Phi}$ and have the same grain yield potential when managed appropriately. The recommended sowing and first flush windows for Reiziq$^{\Phi}$ are listed in Table 2.

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

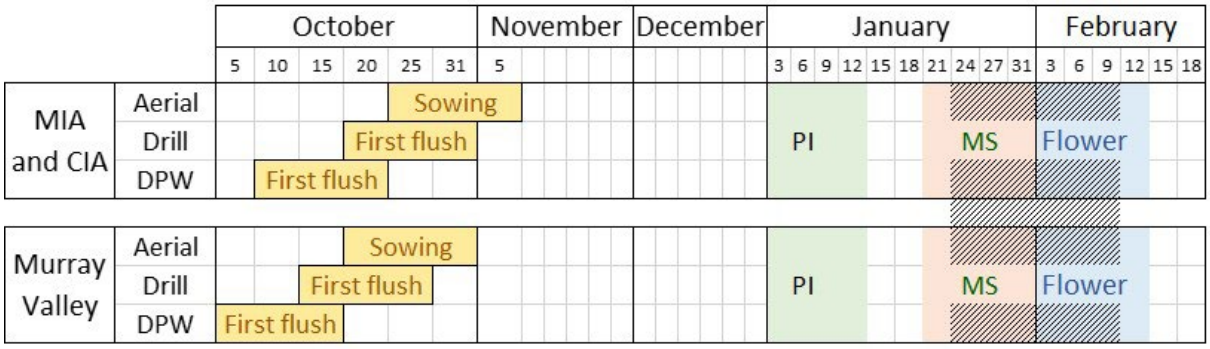
MIA/CIA			Murray Valley		
Aerial/dry broadcast	Drill	Delayed permanent water	Aerial/dry broadcast	Drill	Delayed permanent water
20 October–5 November	15–31 October	5–20 October	15–31 October	10–25 October	1–15 October

MIA: Murrumbidgee Irrigation Area. CIA: Coleambally Irrigation Area.

Sowing date recommendations for Reiziq$^{\Phi}$ aim to ensure the critical microspore (MS) and flowering periods align with the least risk of low temperatures (Table 3). Sowing earlier or later than recommended increases the risk of exposure to low temperatures during MS and flowering, which can reduce grain yield.

Reiziq$^{\Phi}$ development will be delayed in cool seasons; do not moisture stress the crop between flushes or use DPW if sown later than recommended.

Table 3. Recommended sowing and first flush dates for Reiziq$^{\Phi}$ 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.



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

Sowing rate: Reiziq$^{\Phi}$ should be sown at 140 kg/ha for all sowing methods, aiming to establish between 100 plants/m² and 200 plants/m². Sowing rates can be reduced by 10–20% when drill sowing if 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: Reiziq$^{\Phi}$ has a moderate tolerance to cold stress during the early pollen MS and flowering periods.

Plant height: Reiziq$^{\Phi}$ is, on average, 810 mm tall at commerial nitrogen (N) rates.

Lodging potential: Reiziq$^{\Phi}$ has moderate resistance to lodging, which can be induced by applying excessive N pre-permanent water (PW). Warm seasons and high grain yield increase lodging. The effect from pre-PW N application rates on lodging in Reiziq$^{\Phi}$ is shown in Figure 1.

Grain shattering: Reiziq$^{\Phi}$ should be harvested early as it is susceptible to shedding grain once the crop is mature. It is the most prone of all current commercial varieties for shattering.

Nitrogen management: it is recommended to apply between 200 kg/ha urea and 340 kg/ha urea to Reiziq$^{\Phi}$ pre-PW. Fields with a history of legumes might require less pre-PW N and some continuously cropped fields with heavy clay soils could require more pre-PW N.

Reiziq$^{\Phi}$ is a durable variety with a long plateau before grain yield declines due to sterility or lodging becomes a problem from excess N applications (Figure 1).

Increased pre-PW N increases yield and cold induced sterility potential, but as occurred in the 2020–21 season, cold can reduce grain yield regardless of the pre-PW N rate (Figure 2).

Any major field variability in N should be amended pre-PW. Red edge imagery of previous rice crops grown in the field is a good resource for identifying soil N variability.

In warm seasons, maximum grain yield can be achieved by applying all the crop's required N pre-PW. However, in seasons with low temperatures during MS or flowering, excess pre-PW N can increase sterility and reduce grain yield.

Panicle initiation nitrogen (PI N): for maximum grain yield with reduced lodging, use red edge imagery and the PI tissue test to determine PI N top-dressing rates. Higher than required N applied at PI can increase lodging and reduce profitability.

Sufficient N must be applied pre-PW to achieve a N uptake of approximately 100 kg N/ha at PI or grain yield potential can be reduced (Figure 3).

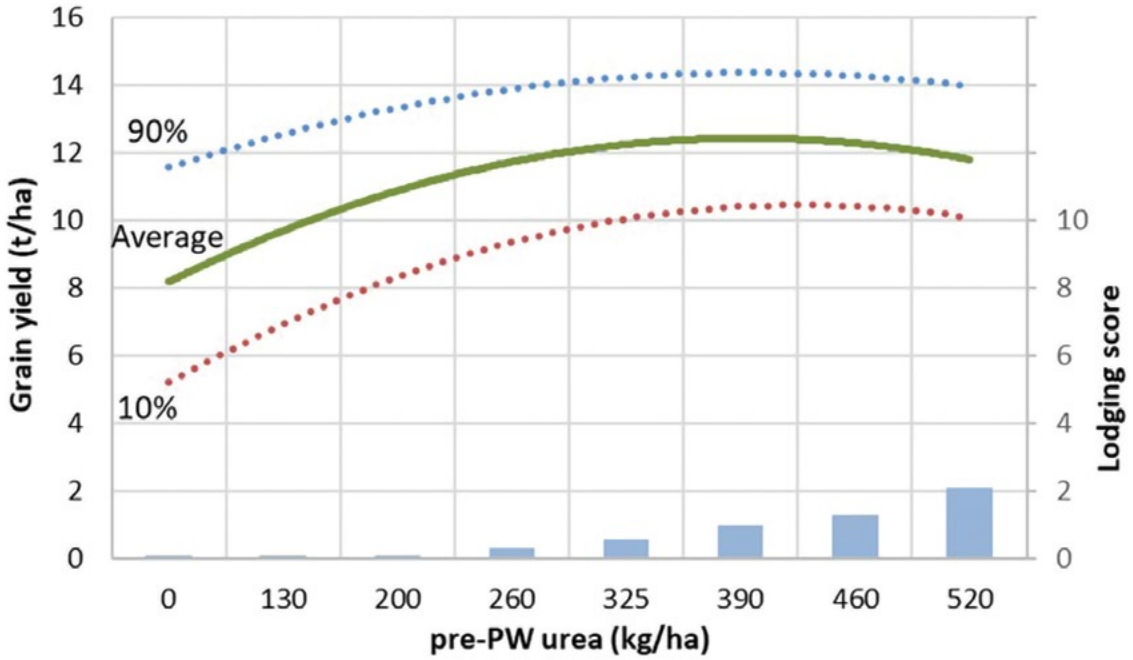


Figure 1. Reiziq$^{\Phi}$ grain yield (average, 10 and 90 percentile) and average lodging score (0=standing, 10=flat) results for pre-permanent water (PW) nitrogen (N) rates (no panicle initiation (PI) applied nitrogen). Results are from 607 plots in 52 experiments conducted over 8 seasons with a range of soil types, fertility levels and sowing methods.

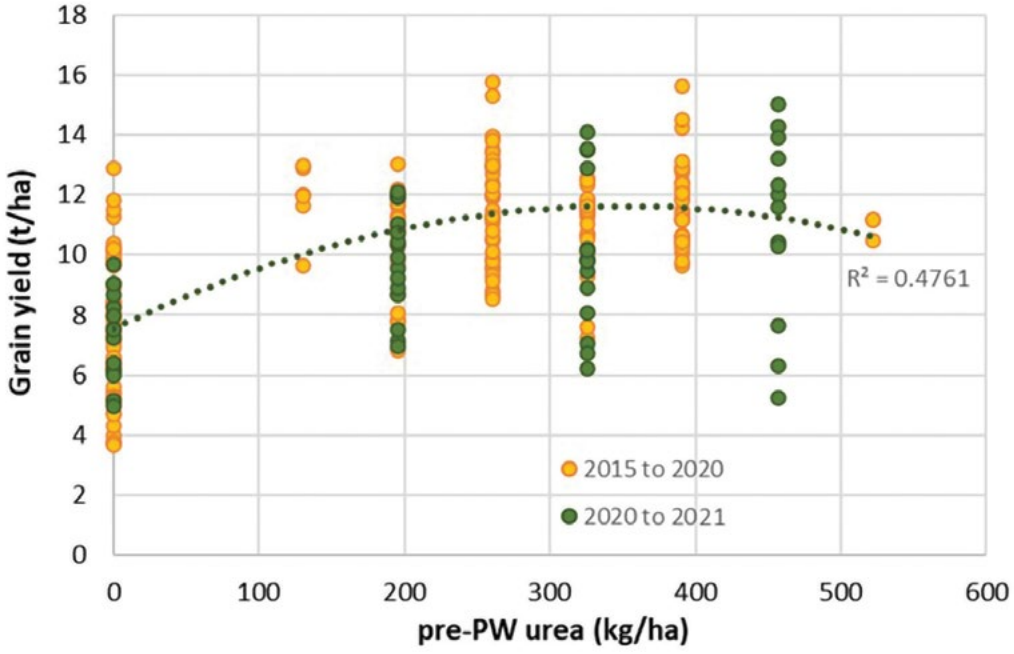


Figure 2. Grain yield of Reiziq$^{\Phi}$ for a range of pre-permanent water (PW) nitrogen (N) rates from 42 experiments over 6 seasons in the Murrumbidgee and Murray valleys. The 2020–21 season was cooler than the previous 5.

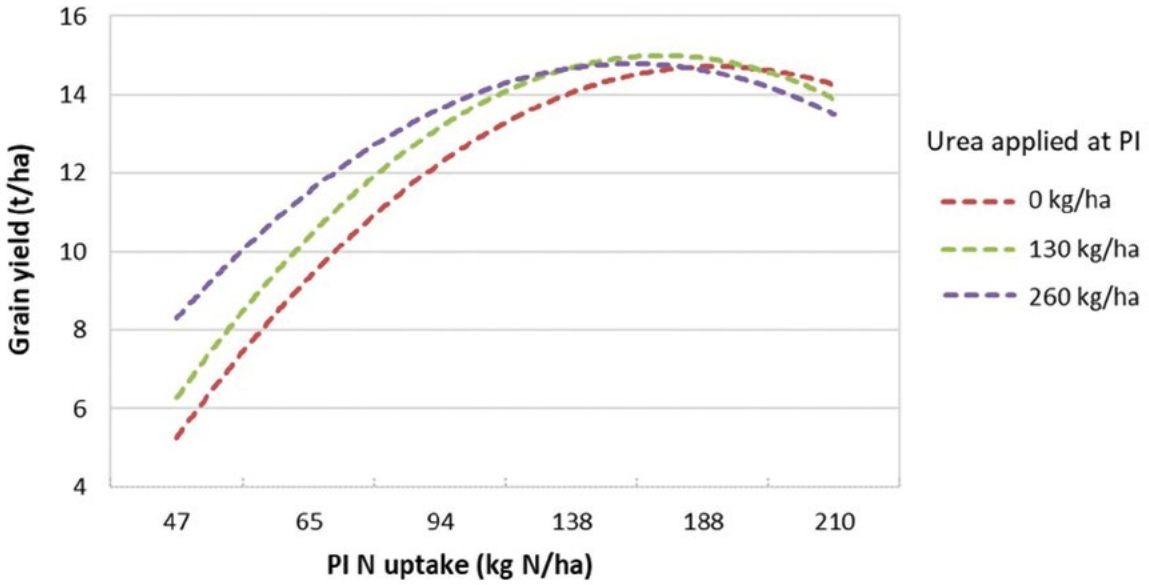


Figure 3. Grain yield of drill sown Reiziq$^{\Phi}$ where 0 kg/ha, 130 kg/ha and 260 kg/ha of urea was applied at panicle initiation (PI) at a range of PI nitrogen (N) uptake levels (Leeton in 2019–20 season).

Harvest: be prepared to start harvesting Reiziq$^{\Phi}$ 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.

Acknowledgements

The research used in this publication is a collaboration between NSW Department of Primary Industries and AgriFutures.