A full-lactation grazing trial is underway to evaluate grazing management strategies

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Previous research by the Department of Primary Industries (DPI) dairy team has led to the development of a new set of grazing management targets for annual ryegrass and kikuyu (Table 1). This new set of management targets was named PUP (proportion of un-grazed pasture) grazing. A full-lactation grazing trial is underway at Gatton Research Dairy (GRD) to evaluate PUP grazing against the traditional industry grazing management recommendations shown below in Table 1.

	Leaf stage		Pasture utilisation per grazing		Residue management	
	Traditional	PUP	Traditional	PUP	Traditional	PUP
Annual ryegrass	2 ½ to 3 leaves	2 leaves	100% of the pasture mass above 5cm	100% of the top leafy stratum excluding faecal patches	Graze to a residue of 5 cm	Maintain residues at 10 cm using mechanical means or non-lactating animals
Kikuyu	4 ½ leaves	3 ½ leaves	2/3 of the pasture mass above 5cm		Reduce to 5 cm if residues exceed 15 cm	

Table 1

The aim of PUP grazing is to improve milk yield per cow and per hectare through improving pasture intake, diet quality and pasture utilisation. PUP grazing's key principle involves grazing only the top leafy stratum of pastures (TLS) (Images 1 and 2). In practice this is achieved by leaving a small proportion of un-grazed pasture around the faecal patches as an indicator, promoting high intake of higher quality pasture per cow. PUP grazing also utilizes pastures at an earlier stage of maturity in comparison with traditional recommendations. This results in greater leaf yield and higher pasture utilisation per season.

Previous studies conducted by the DPI dairy team found that PUP grazing resulted in greater pasture intake, pasture utilisation and milk yield in comparison with the traditional recommendations. This included a 2-year grazing study on annual ryegrass and kikuyu using non-lactating dairy heifers at the GRD. The study showed that PUP grazing resulted in at least 50% improvement in pasture intake and 30% increase in pasture utilisation per season in comparison with the traditional recommendations for both pasture species. In addition, a short-term study conducted in 2023 at GRD demonstrated that the PUP grazing strategy increased pasture intake by 52% and short-term milk yield per cow by 18% (5 litres) in comparison with the traditional grazing management recommendations used for annual ryegrass.

The current full-lactation study evaluates the impact of PUP and traditional grazing strategies on milk yield on a per cow and per hectare basis. It will also measure milk composition, body condition score and reproductive performance of each herd (PUP and traditional) being trialled. Both the PUP and traditional grazing strategies will use first-lactation cows to graze annual ryegrass (winter 2025) and kikuyu (summer 2025/2026).

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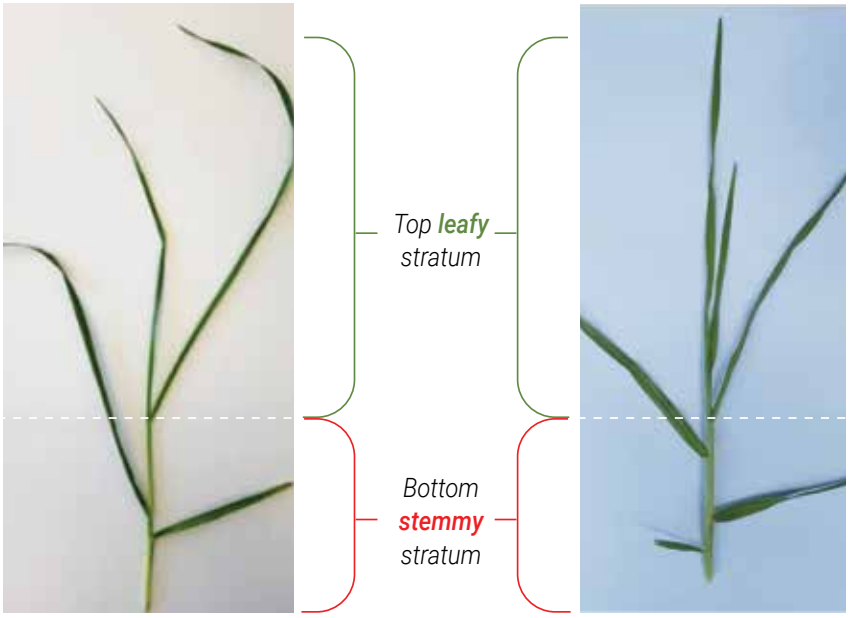

Image 1 *Strata of annual ryegrass (left) and kikuyu (right).*

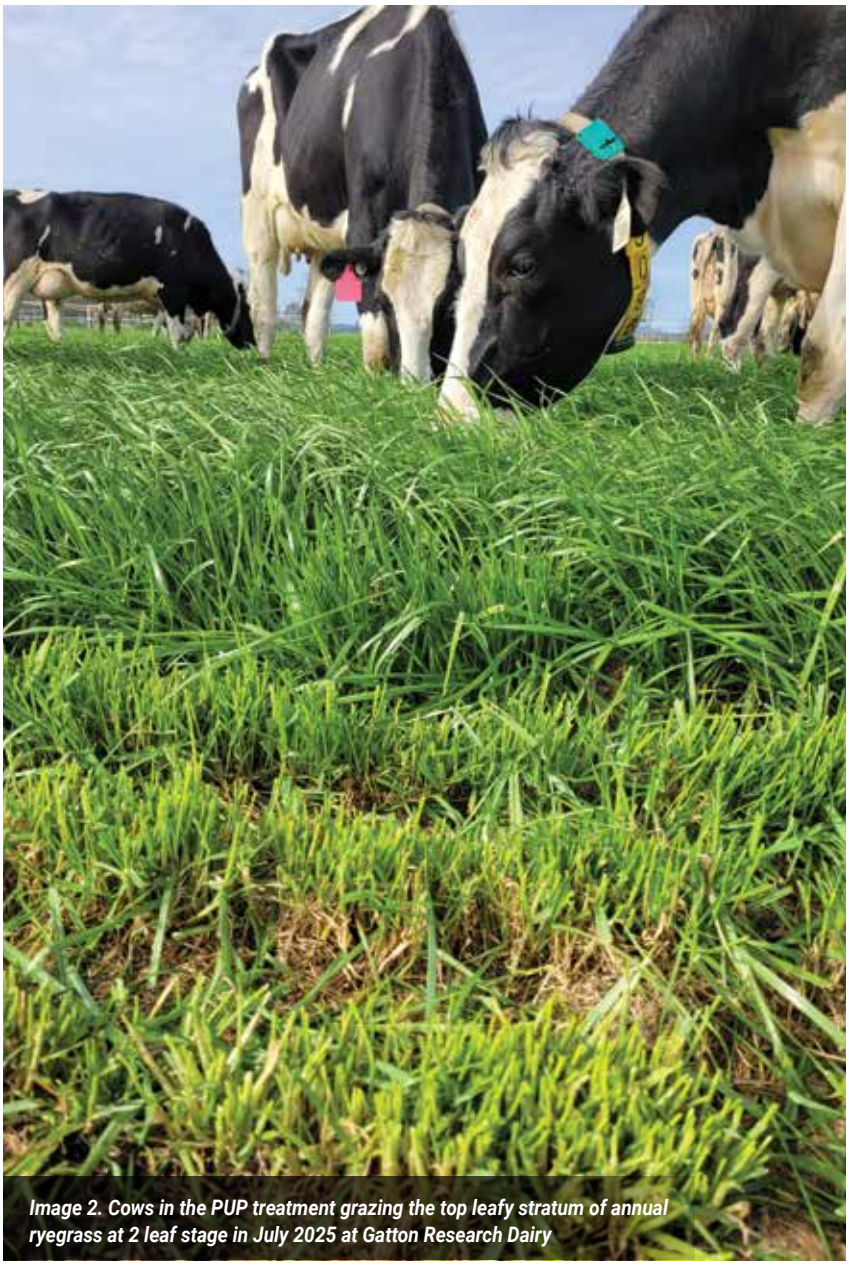

Image 2. Cows in the PUP treatment grazing the top leafy stratum of annual ryegrass at 2 leaf stage in July 2025 at Gatton Research Dairy