Perennial pastures
Fact sheet

Phalaris (*Phalaris aquatica*)

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KANGAROO ISLAND

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Grows best:

Sandy loam to heavier soils, pH >5.5$_{CaCl2}$ (low Al^{3+}).
Rainfall 450-700mm.

Critical factors
for persistence & productivity

- pH >5.5$_{CaCl2}$ (aluminium <5%). **Regularly monitor pH**, both top 10cm and subsoil, and **lime accordingly** to ensure persistence.
- **Strategic rotational grazing**, especially in challenging conditions.
- **Good soil fertility** – Phosphorous (>25-35ppm) and potassium (>100ppm) for optimum clover productivity.

Key benefits

- **Tough, robust plant that responds rapidly to the break of the season.** However, initial grazing needs to be approached with caution.
- **Excellent persistence and drought tolerance.** Well-managed stands can persist for decades.
- **High quality winter and early spring feed.**
- Most responsive grass species to gibberellic acid application, providing **extra dry matter in winter** when feed supply can be tight.
- **Strong root system for erosion control** provided subsoil constraints are addressed.
- **Tolerates short periods of winter waterlogging.**

Overview

Phalaris is tough in dry conditions because it protects itself. It forms dormant buds at the base of the plant that sit there waiting for rain, and it's backed up by a deep root system (can extend beyond 1m in suitable soils) that can chase moisture well below the surface. That combination is why phalaris can bounce back after drought.

Where it can come unstuck is in acidic subsoils. If aluminium levels are high (exchangeable Al above about 5–10%), roots get 'pruned' and can't grow down properly. That cuts the plant off from deep soil moisture – and without that moisture, those dormant buds can die.

If you've got naturally acidic subsoils (20-30cm), it's worth looking at aluminium-tolerant varieties like Advanced AT. And good liming practice matters – regular lime applications to keep pH$_{CaCl2}$ above 5.5 will improve the topsoil first and, over time, help ease deeper acidity. That's key for long-term phalaris persistence. If below pH 5.5$_{CaCl2}$ phalaris may not survive or plants will remain small.

Photo: barenbrug.com.au

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Grazing management

- Requires strategic rotational grazing to fully recharge root reserves. This occurs when there are 4 fully expanded leaves on each tiller.
- Longer rest periods are required during summer when moisture is limiting, and in winter when soil temperature is limiting.
- Allow stem elongation of phalaris during reproductive development to encourage dormant bud formation.
- The ability of phalaris to regenerate quickly in autumn depends on the number and health of the dormant buds. Rapid autumn growth is important to suppress weeds and boost production.
- Careful grazing management can enable established plants to 'walk' across the paddock, which occurs when the parent plant is killed, encouraging daughter tillers to emerge.

Establishment tips

- Test soil pH at 0-10cm and 20-30cm.
- Lime low pH soils, 1-2 years before sowing for best persistence and productivity.
- Use varieties suited to the soil conditions (e.g. if have low pH use Advanced AT) and management style (e.g. if set stock – chose Holdfast GT).
- Ensure good weed control 2 years ahead of seeding and insect control post sowing as phalaris seedlings are small and weak as they invest heavily in root growth in the first year.
- After an autumn sowing, phalaris should be lightly grazed once plants are well anchored (late winter/early spring), then spelled in late spring/early summer (Nov–Dec) so it can build root reserves and form new basal buds, followed by careful summer management. The spring–early summer rest period is critical for long-term persistence.
- Sow with companion clovers to supply nitrogen. It's a perfect match.
- Ensure soil phosphorus levels are at or above the critical P requirement to optimize clover growth and hence N fixation to drive the overall productivity of the grazing system.
- Rarely thickens successfully via over-sowing into existing pastures. Rather it can be encouraged to 'creep/expand' from the crown by increasing basal tillers.

Photo: barenbrug.com.au

Phalaris

Challenges

Phalaris can cause two **animal health issues**, particularly after the autumn break. Phalaris staggers is the most common and is a chronic condition caused by alkaloid build-up. Affected stock may appear unsteady or tremble. Sheep are more susceptible than cattle. Acute toxicity (sudden death) is less common but can occur when animals graze large amounts of lush phalaris, especially when hungry.

Reducing animal health risks:

- Avoid putting hungry stock onto green phalaris.
- Avoid grazing weaner sheep after the break.
- Introduce stock gradually.
- Maintain cobalt levels (bullets or pasture application - only effective against staggers).
- Consider mixing with other species (e.g. cocksfoot).
- Shift stock later in the day.

Other challenges:

- Doesn't like sandy, infertile soils.
- Struggles to recruit from seed after the initial planting.

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> With good management, phalaris can be safely grazed and remains one of the most productive and persistent pasture options.'

Phalaris adaptation chart

ATTRIBUTE	CULTIVAR				
	Atlas PG	Advanced AT	Landmaster	Holdfast GT	Australian II
Minimum rainfall*	400-500mm	500-600mm	500-600mm	500-600mm	500-600mm
Growth habit	Erect	Semi-erect	Semi-erect	Semi-erect	Prostrate
Winter activity	High	High	High	High	Low
Summer activity	Dormant	Medium	Medium	Medium	High
Seedling Vigour	High	High	Medium-high	Medium-high	Low
Grazing regime	Rotational - preferred	Rotational - preferred	Rotational - preferred	Set stocking	Set stocking
Soil acidity	4.5-8.5$_{CaCl2}$	3.9-8.0$_{CaCl2}$	4.5-8.5$_{CaCl2}$	4.2-8.5$_{CaCl2}$	4.5-8.5$_{CaCl2}$
Aluminium tolerance	Medium	High	Medium	Medium	Low
Tolerance to waterlogging	Good	Good	Good	Good	Excellent
Alkaloid level	Medium	Low	Low	Low	High
Suitability to sub clover mix	Excellent	Good	Excellent	Excellent	Good

Table courtesy of Naracoorte Seeds.

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Farmer insights:

> I'm a big fan of phalaris – it's tough, productive and really kicks into gear after the autumn break, giving us valuable early winter feed. I thought I'd overgrazed it in the summer of 2024/25, but it bounced back. We can run significantly higher stocking rate compared to our annual pasture.'
>
> — Will Stanton, SE Parndana

Would they plant it again?

Yes, in most areas with good soil fertility.

No, on non-wetting, dry, infertile sands.

Contact

This fact sheet was prepared by Jenny Stanton and Lyn Dohle, March 2026.

For further information on perennial pastures, please contact

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Acknowledgements

This project is funded by the Kangaroo Island Landscape Board.

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