PRODUCTIVE LEGUME PASTURES

PASTURE OPTIMIZATION FOR DROUGHT SOLUTIONS P.O.D.S.

FACTSHEET # 5

SPRING PASTURE TIPS: BOOST FEED, SEED SET AND LEGUME PERSISTENCE

KEY GOALS

- Immediate feed supply and fodder storage
- Legume persistence via seed set
- Manage pasture composition and weed dynamics

WHY SHOULD I MAKE THE MOST OF SPRING?

Spring is the last phase of active growth before senescence in most annual legumes, this makes Spring a critical period for pasture management because it directly determines feed quality and quantity, pasture composition, and the future productivity of your paddocks. Spring delivers the bulk of annual dry matter production. Additionally annual legumes reach their peak growth and nutritional value in early to mid-spring. Managing grazing and growth effectively during this time ensures: high-quality feed for livestock, increased liveweight gain or milk production, ability to store fodder before Summer.

GRAZING AND FODDER MANAGEMENT

Managing pasture for good quality grazing while also maximising fodder supply requires balancing feed quality, quantity, persistence, and regeneration. Unfortunately, it is often not possible to have everything all at once, and a compromise is necessary depending on your pasture goals (Table 1). For Example, a paddock with good growth, and strong legume population would be a good candidate for fodder conservation, but the subsequent year it would need to be spelled at flowering to ensure the seed bank is maintained.

Practice	Feed Quality	Feed Quantity	Persistence and Regeneration
Frequent, light grazing	✅ High early, Variable later in season	✅ Good early supply	❌ Reduces growth under dry conditions. May reduce seed set if continued too late. Negatively alters pasture composition
Rotational grazing (4-6 week rest)	✅ Balanced, lower than above, more consistent	✅ Good seasonal spread	✅ Supports continued growth later in the season, flowering and seed set
Spelling at flowering	❌ Short-term drop	❌/✅ Short term limitation, long-term gain	✅ Essential for persistence of annual legumes
Hay/silage cuts (selected paddocks)	✅ Preserves quality	✅ Feed conserved	❌ Reduces seed set, may limit subsequent regeneration. Don't do for consecutive years or where regeneration is poor

Table 1: impacts of grazing practices on feed quality, quantity and persistence

TACTICS TO HELP MAXIMISE QUALITY AND QUANTITY

Rotational Grazing

- Use multiple paddocks to rotate stock and provide rest periods
- Adjust duration based on growth rate & plant maturity

Monitor Feed On Offer (FOO) to inform paddock rotation. Optimal range:

- 800–1500 kg DM/ha for quality
- 1500–3000 kg DM/ha to build bulk for silage or deferred grazing

Species with complementary growth windows can be used to maintain feed quality over a longer season.

- E.g. subclover (early maturing) + serradella or arrowleaf (late maturing)

Measure and maintain feed quality

- Use pasture quality testing (ME, CP, NDF)
- If NDF exceeds ~45% or ME falls below 9 MJ/kg DM, quality is limiting animal intake and performance

Conserve surplus paddock feed as fodder. In Spring pastures should reach a point when growth exceeds grazing demand. Rather than allowing all paddocks to be over-rested, becoming mature and higher in fibre which reduces quality, make hay or silage from paddocks not needed for seed set.

- Legumes with upright growth may be easier to harvest (e.g. arrowleaf, balansa)
- Harvest at early flowering for maximum quality (before fibre increases)
- Cutting for fodder, particularly silage, can be used to limit weed seed carry over in paddocks with high weed burdens

MANAGE PASTURE COMPOSITION AND WEEDS

Managing pasture composition requires deliberate action, especially in spring when grasses and weeds can dominate. This means managing both grazing pressure and, when appropriate, using herbicide strategies to control unwanted species while preserving desirable legumes

Time of Year	Grazing Strategy	Herbicide Option	Outcome
Early Spring	Moderate-heavy to suppress grasses	None or post-emergent grass herbicide	Favour legumes
Mid Spring	Rotational, moderate pressure	Spray-graze (if broadleaf weeds dominate)	Balance grass and legume components
Late Spring	Light graze or spell	Spray topping (post legume seed set)	Reduce weed seeds, maintain legume seedbank

Using multiple species of legumes with different maturity windows (e.g. subclover + serradella) can help to outcompete weeds across the season. Additionally, having species with different flowering times increasese resilience as an early variety sets seed more reliably each year, but a later variety can produce feed for a longer season. In mixed pastures, herbicide options are limited, its critical use grazing management and sowing density to shift competition toward legumes.

MAXIMISING SEED SET AND PERSISTENCE

Maximising legume persistence and seed set through spring management is essential for maintaining productive, self-regenerating pastures, particularly when working with annual legumes. Annual legumes regenerate from seed – if seed set is poor in spring, you risk a reduced legume population the following year. Persistent legumes reduce re-sowing costs and maintain feed quality across seasons. Maintaining legume seed banks ensures resilience during dry years or false breaks.

Early to Mid Spring (Before Flowering)
Apply moderate grazing to encourage branching in subclovers and medics, maintain openness in the sward and reduce grass bulk and competition. Target residual FOO of 800–1200 kg DM/ha. Graze or mow to suppress annual grass weeds before they flower.

Late Spring (Flowering to Pod Set)
Reduce or remove stock to allow flowering, pod development maturation of seed. Watch out for pests such as native budworm. Subclover starts flowering ~mid-October (varies by variety),Medics are often earlier, but require warm, dry weather to harden seed, Serradella, balansa, arrowleaf can have a longer season, or less determinate growth habit and may flower into November.

SPRING CHECKLIST FOR ANNUAL LEGUME BASED PASTURES

When	Tasks
Early Spring September- early October	✓ Estimate FOO - Target 800-1200kg DM/ha, maintain plants in vegetative growth and high feed quality ✓ Assess Pasture Composition - Check % legume, desirable grass and weeds, identify problem paddocks, ✓ Prioritise grazing to prevent grass dominance and maintain an open canopy ✓ Control early weeds - use grazing to suppress weeds (eg capeweed, barley grass), avoid herbicide use unless legumes are well established and tolerant
Mid Spring mid October - early November	✓ Monitor legume growth stage: check if legumes are flowering or about to flower, subclover and medics typically flower in mid spring, serradella, balansa and arrowleaf flower later ✓ Rotate grazing for recovery: use 4–6 week rotations to maintain quality and allow legume recovery, avoid grazing too hard as legumes begin reproductive phase ✓ Identify paddocks to spell for seed set: choose paddocks where legumes are present but sub-optimal (5-20%) to rest from flowering onwards ✓ Monitor feed quality: consider sampling ME/CP if managing high-performing stock (lambs, lactating ewes) and watch for declining digestibility (NDF > 45%) in rank or grassy pastures ✓ Assess hay or silage opportunities: if you are growing surplus feed, cut for hay before fibre increases, or apply hay freeze to maintain quality in the paddock
Late Spring mid November - early December	✓ Spell paddocks through flowering to pod set: stop or significantly reduce grazing, wait 3–5 weeks post-flowering before grazing to allow seed maturation, look for pod hardening in medics and serradella ✓ Apply spray topping (if needed): Only after legume seed set is complete, use low-rate glyphosate or paraquat to sterilise weed seed (target paddocks with ryegrass, barley grass, silvergrass) ✓ Light post-seed set grazing (optional): helps bury hard-seeded pods, but retain ground cover (>70%) ✓ Monitor ground cover and summer risk: prioritise erosion control, especially on light soils, consider fire risk if pasture bulk is excessive ✓ Record Paddock Performance: note which paddocks set seed well vs. which may need re-sowing, track weed issues and grazing history for future planning

SUPPORTING RESOURCES

- MLA: Legumes Hub: https://www.mla.com.au/extension-training-and-tools/feedbase-hub/legumes-hub/
- MLA and SFS: Pasture Paramedic, https://www.mla.com.au/globalassets/mla-corporate/extensions-training-and-tools/documents/pasture-paramedic.pdf
- MLA: how do I know if my perennial grasses need rescuing? https://www.mla.com.au/globalassets/mla-corporate/extensions-training-and-tools/documents/feedbase-hub/mla-how-do-i-know-if-my-perennial-grasses-need-rescuing.pdf
- Evergraze: Keep sub clover in the system, https://www.evergraze.com.au/library-content/keep-sub-clover-in-the-system/index.html
- Evergraze: Regional Pasture Growth Rates, https://www.evergraze.com.au/library-content/regional-pasture-growth-rates/index.html
- SFS: More Sub Clover, https://sfs.org.au/project/more-sub-clover
- Pasture Legumes: A New Era for Pastures in Southern Australian Farming Systems: Second Generation Hardseeded Legumes (G2HSLs), https://grdc.com.au/__data/assets/pdf_file/0038/595865/GRDC_Pasture-Legumes-Growers-Manual_2023_FINAL.pdf
- Dryland Pastures Research, https://drylandpastures.com/
- Pasture Trials Network, https://ptntool.mla.com.au/
- Pastures Australia: Fact Sheet Index, https://keys.lucidcentral.org/keys/v3/pastures/Html/index.html
- MLA: Weed Fast Facts, https://www.mla.com.au/contentassets/53f6fe889f50427a8c58b33b497f8cc0/0272_sfs_mla-weed-fast-facts_jan-2022_active-links_lr.pdf
- MLA: Making More from Sheep, Module 8 - Turn Pasture Into Product: https://elearning.mla.com.au/courses/module-8-turn-pasture-into-product/

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This program received funding from the Australian Government's Future Drought Fund