


Getting the most out of Diploid and Tetraploid Annual Ryegrass

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Getting the most out of Diploid & Tetraploid Annual Ryegrass

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Presentation Overview

- Species differences
 - Annual vs Perennial - How they differ
 - Is perennial really perennial?
 - Most common varieties
- Tetraploids vs Diploids
- Keys to increasing performance
- Strategies for annual ryegrass systems



Species Differences

- Annual vs Perennial
 - Annual
 - Survives from seedling
 - Higher winter/spring production
 - Easily harvested
 - Lose quality quickly at end of season
 - Perennial
 - Survives from tillers
 - Lower winter production
 - Higher 'end of season' production
 - Better quality at end of season
 - Hard to harvest



Perennial or Not?

- ❑ Some varieties are perennial but also act as annual
- ❑ Set seed at end of spring
- ❑ But also maintain tillers over summer
- ❑ Re-grow from tillers following summer/autumn rain
- ❑ E.g. Roper, Camel, Everlast, Kangaroo Valley, Victorian

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Perennial or Not?



Sown in 2002 with:
 60 kgs/ha Oats
 4 kgs/ha Roper ryegrass
 1 kg/ha Phalaris
 1 kg/ha Crimson

Source: Agrom

Most Common Varieties

"True" Perennial	"Semi" Perennial	Annual
Impact, Bronsyn, Cannon, Samson, Banquet	Everlast, Kangaroo Valley, Victorian, Roper, Camel	Wimmera, Surrey, Progrow, Dargo, Winterstar, Rocket, Tetila, Robust, Safeguard, Missile

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Tetraploid Vs Diploid

- ❑ Diploid varieties have two sets of chromosomes per cell; Tetraploids have four sets per cell – so what?
- ❑ Basically Tetraploids:
 - ☑ Visually more impressive (effects FOO estimates)
 - ☑ Larger plant parts
 - ☑ Bigger cells, therefore higher moisture content (>10%)
 - ☑ Larger, darker greener leaves
 - ☑ Larger seeds (require higher seeding rate – 20% more)
 - ☑ Less tillers (less resilient to over grazing)



Tetraploid Vs Diploid

- ❑ Tetraploids continued...
 - ? Higher quality
 - ? Preferentially grazed by animals
 - ? Increased animal intake
 - ? Improved animal production
- ❑ In my experience:
 - No evidence that tetraploids as a group are higher yielding than diploids.
 - However some varieties do better than others in different areas (E.g. Winterstar & Rocket).

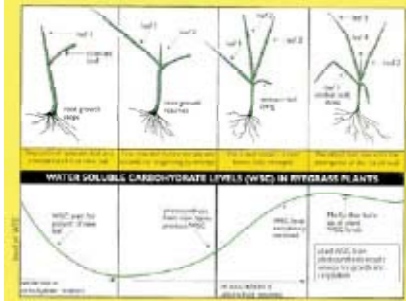


Keys to Increased Performance

- ❑ Density and composition
 - Are king & queen respectively
 - Sowing tactics (oversow vs re-sow) have a key influence
 - Legume component is critical to sustainable performance
- ❑ Early control of insects
 - Inability to do this is becoming a major threat to ryegrass performance – particularly with early germination
- ❑ Remember the nutrient benchmarks
 - 1 Kg Phosphorus & Sulfur per DSE
 - 1 Kg Nitrogen produces 10-15 Kg DM
- ❑ Rotationally graze
 - Be tactical not traditional
 - Rotating and set stocking are both important



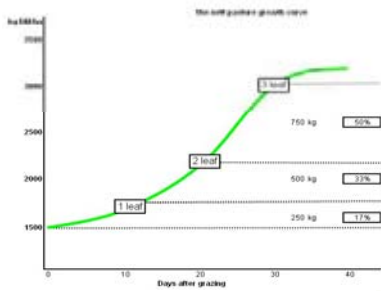
Grazing & Ryegrass Performance



Source: Dr Danny Donaghy, UTAS



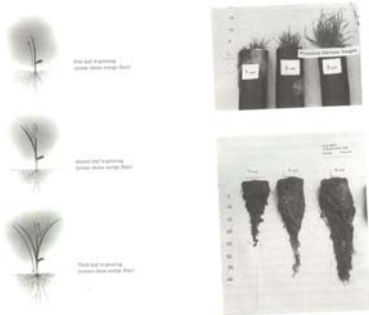
Grazing & Ryegrass Performance



Source: Frank Tyndall (UoM) and Phil Shannon (DPI Vic)



Grazing & Ryegrass Performance



Strategies for Ryegrass Systems

- Spray top and over-sow for best results (where legume composition is good)
 - Sow Alosca to improve nitrogen fixation of legumes
 - Row spacing's <6 inches otherwise cross sow
- Deferred grazing at the break
 - Let ryegrass get to at least 2.5 leaves
 - First graze critical – promotes tillering & density
- Sacrifice paddocks
 - Use poor composition paddocks
 - Can then be sown late to oats and under-sown with ryegrass



Strategies for Ryegrass Systems

- Cereal Fodder crops
 - Can under-sow with ryegrass, clovers and Alosca
 - Used to maintain stock over summer (spread the under-sown ryegrass)
 - Take pressure off summer grazing
 - Have an established pasture the next year
- Use Nitrogen early
 - Better returns from applying more over a smaller area than less over a larger area.
 - Keep applications below 70 kgs/ha urea equivalent if grazing within 21 days



Strategies for Ryegrass Systems

- Intensive Spring Grazing
 - Enables you to use different flowering times
 - Enables legume dominant paddocks to be set up for weaning
 - Excess can be conserved as hay or silage
- Sow your own seed nursery
 - Still get grazing benefit throughout the year
 - Harvest your own seed for between \$0.80 - \$1.20/kg
 - Plant Breeders Rights (PBR) exist
 - Small area – high production (500-750 kgs/ha clean seed)
 - Seek advice – there are plenty of farmers doing it.



Take Home Messages

- ❑ Density is king for productive ryegrass pasture systems
- ❑ Nutrition is a key focus in productive ryegrass systems
- ❑ Be prepared to implement deferred and rotational grazing
- ❑ The third leaf of a ryegrass produces 50% of the production!
- ❑ Increased animal performance per hectare will depend on the yield and management of the whole pasture not just the ryegrass



Thank You

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