



N&P responses for oaten hay

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Long term trial site – established 1996

- Four rates of P (TSP)
 - 0, 9, 18, 36
- Five rates of N (Urea)
 - 0, 20, 40, 80, 160
 - No N in legume phase
- N applied either
 - All at sowing/split 50:50
- Each year the site sown to a single crop.
- Soil samples, grain harvest, nutrient content.



Direct drilled,
zero cultivation,
stubble retained.

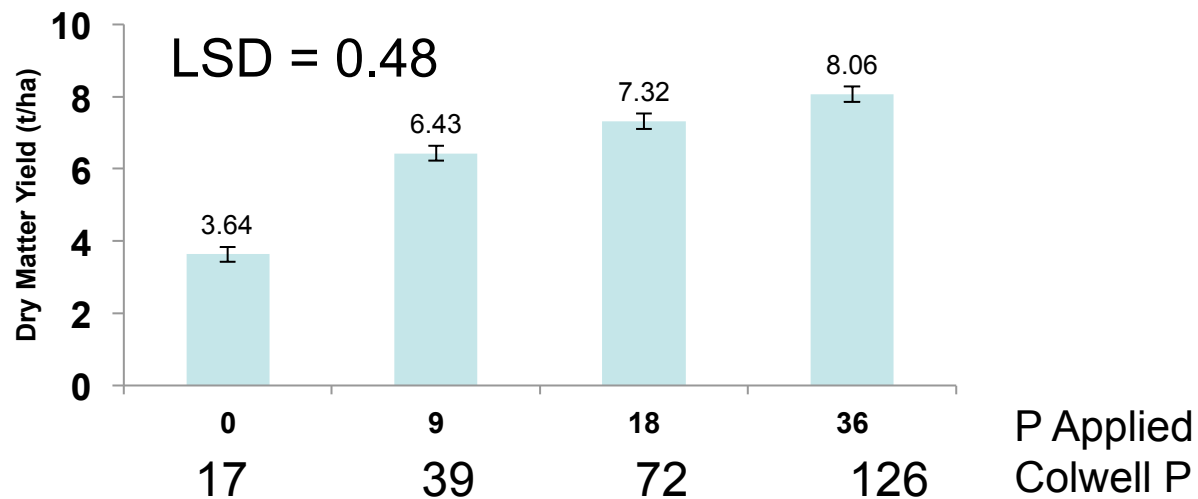
2011 – Oats cropped

- Significant fodder crop, domestic & export demand
- Around 3Mt of cereal hay per year & 0.6Mt exported (AFIA)
- Used on this site to manage HR ARG.
- Mulgara hay oats sown May 15, cut Sept 20.
- Yield, quality & nutrient levels assessed.



Nutrient responses - *surprises*

- Strong P response – even at Colwell of 72!



- N response not significant – carryover N adequate?
 - 0 N (75 kg N offtake) – 25 kg N top 60 + 30 kg pot min N
 - 80 N (120 kg N offtake) 37 kg N top 60 + 50 kg pot min N + 80 applied

Effect on quality

- CP content <10% with less than 20 kg N or less.
 - (Grade 2 by AFIA standard)
- N*P effect seen but ME content always >9.5 MJ/kg
- N improved yield of both protein and ME.
- **Nutrient off-takes quite large (esp N).**
 - P – 0 (5.2), **9 (9.4)**, 18 (12.9), 36 (17.4)
 - N – 0 (75), 20 (88), 40 (96), **80 (121)**, 160 (132)
 - K off-take = 27 kg K/t compared to eg wheat @ 4.6 kg K/t

