

# Mudamuckla Focus Paddock 2009

**Peter Kuhlmann**

Farmer, Mudabie

**EXTENSION**

## Searching for answers



**Location:** Mudamuckla

### Rainfall

Av. Annual: 290 mm  
Av. GSR: 216 mm  
2009 Total: 292 mm  
2009 GSR: 262 mm

### Paddock History

2008: Wheat - Gladius 0.43 t/ha  
2007: Self sown barley  
2006: Barley - Barque 0.38 t/ha

### Soil Type

Grey calcareous sandy loam

## Key messages

- **Wheat varieties respond differently to increasing rates of fluid phosphorus.**
- **The season suited Gladius and Yitpi over the very short season variety Axe.**
- **Mace yielded 5% better than Wyalkatchem.**
- **Seeding rate did not affect yield in 2009.**

## Why do the trial?

Commercial scale strips were sown in a paddock at Mudamuckla. This paddock is the 'Focus Paddock' for the region as part of the EP Farming Systems 3 - Responsive Farming project. This project is GRDC funded and will focus on increasing water use efficiency (WUE). The strips were sown to develop a better understanding about management options across different production zones in the paddock. With the combination of monitoring of the soil resources

in each zone, interrogation of the yield maps in each cropping season and small plot research, we hope we can develop more responsive and low risk farming systems for this environment.

A summary of other activities in this paddock in 2009 are provided in articles by Cathy Paterson et al 'Responsive Farming for Soil Type at Mudamuckla', Sean Mason 'Improving Phosphorous Management on Upper EP using the DGT Soil Test' and Anthony Whitbread 'Farming to Soil Potential on the Upper Eyre Peninsula: How Accurate was In-season Yield Prediction in 2009?'.

## How was it done?

Strips were sown the length of the paddock using different phosphorus rates (delivered as fluids), wheat varieties, seeding rates and times of sowing. All strips were harvested with a commercial header using a yield monitor to record wheat yields. These large strips utilised the technologies of yield monitors and mapping, prescription maps, variable rate and autosteering coupled with monitoring and comprehensive soil analysis. The various treatments resulted in 37 different strips being sown and yield data being collected within the 200 ha paddock.

The varieties used were Axe, Gladius, Yitpi, Mace and Wyalkatchem. The seeding rates ranged between 30 to 70 kg/ha. The rates of P were 0 kg/ha, 4 kg/ha, 6 kg/ha, 8 kg/ha and 16 kg/ha. The dates of sowing were 30 April, 6 May, 9 May, 16 May and 31 July.

## What happened?

When seeded on 6 May and under the same fertiliser regimes

and seeding rates, all varieties produced grain which made H2 grade, but Gladius was the highest yielding at 1.25 t/ha, followed by Yitpi at 1.18 t/ha (95% of Gladius), mixed varieties (1/3 of each) at 1.17 t/ha (94%) and Axe at 1.00 t/ha (80%).

Mace was the best yielding variety at the site (sown on 9 May) at 1.37 t/ha and out-yielded Wyalkatchem by 5%.

Increasing the seeding rate of Gladius from 30 to 70 kg/ha when seeded on 6 May did not affect yield or quality. However, the lower rates appeared to have more grass and were falling over more than the higher rates. This will have implications for the weed seed bank in this paddock.

Only Axe appeared to respond strongly to P fertiliser, increasing in grain yield by 300 kg/ha or 30% (Figure 1). The other wheat varieties showed no clear response to fluid P, even though they generally yielded higher than Axe. Axe appeared to require at least 5 kg P/ha before yielding better than with no P fertiliser and 8 kg P/ha boosted yields even higher.

Sowing Gladius on 30 April yielded 4% higher than the main part of the paddock which was sown on 6 May, despite not having a knockdown or trifluralin applied at the earlier seeding. A very late sowing on 31 July (later than had been intended due to machinery problems) only yielded 34% of the main sowing date of 6 May. Wyalkatchem sown at the end of July yielded 0.51 t/ha compared to Gladius at 0.41 t/ha sown on the same day.

Detailed analysis of yields at different seeding and fertiliser rates within each zone has not yet been completed. However, the wet spring improved yields on the

medium and poor zones above those expected because normally the lower water holding capacity of soils in these two zones severely restrict grain yields.

## Acknowledgements

Nigel Wilhelm, Anthony Whitbread, Roy Latta and Cathy Paterson.

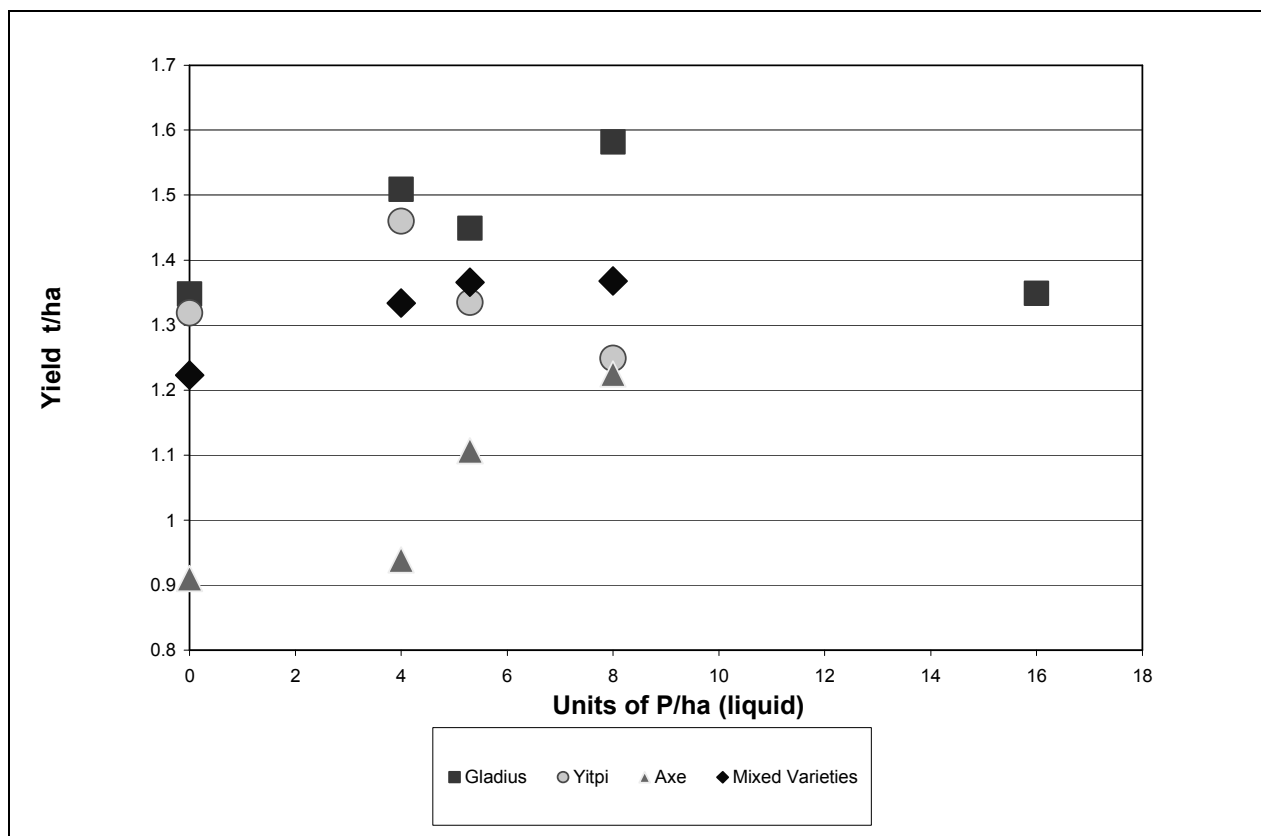


Figure 1 Variety response to P fertiliser, Paddock 8 Mudabie 2009

