



# Year In Year out Fallowing-Does it Pay?

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# Background

- Strategic fallowing is being adopted by growers in the NEAR because of
  - Reduced sheep numbers
  - Drier seasons





## Average Yield Response to fallowing

	Clay Loam		Good Sand		Poor Sand	
	100 yr	Last 10	100 yr	Last 10	100 yr	Last 10
Yuna	0.4	0.8	0.2	0.6	0.0	0.0
Mullewa	0.4	0.5	0.2	0.50	0.0	0.1
Perenjori	0.6	0.6	0.3	0.50	0.0	0.1

Data supplied by Yvette Oliver and Michael Robertson, CSIRO





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# Grower Case study

- 50% good sand, 50% red loam
- Strategically following 35-40% of property
- Tactically following 10-15% depending on
  - Summer rain
  - Break of the season
  - Canola price





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# Grower case study cont...

- Lower seeding rates
- Fertiliser and weed control remains the same
- Average yield benefit over farm 0.5t/ha
- Good loams yield benefit 1.0 t/ha
- Sandy soil yield benefit 0.2- 0.3t /ha
- More confidence in dry years





# Demonstration site

- Loam soil
- Soil depth variable across the site
- 5 treatments
  - Winter fallow- Wheat- Winter fallow
  - Spring Fallow- Wheat- Spring Fallow
  - Wheat- Winter fallow- Wheat
  - Wheat- Spring Fallow- Wheat
  - Continuous wheat
- WF lower seeding rate
- Wheat price \$260/t





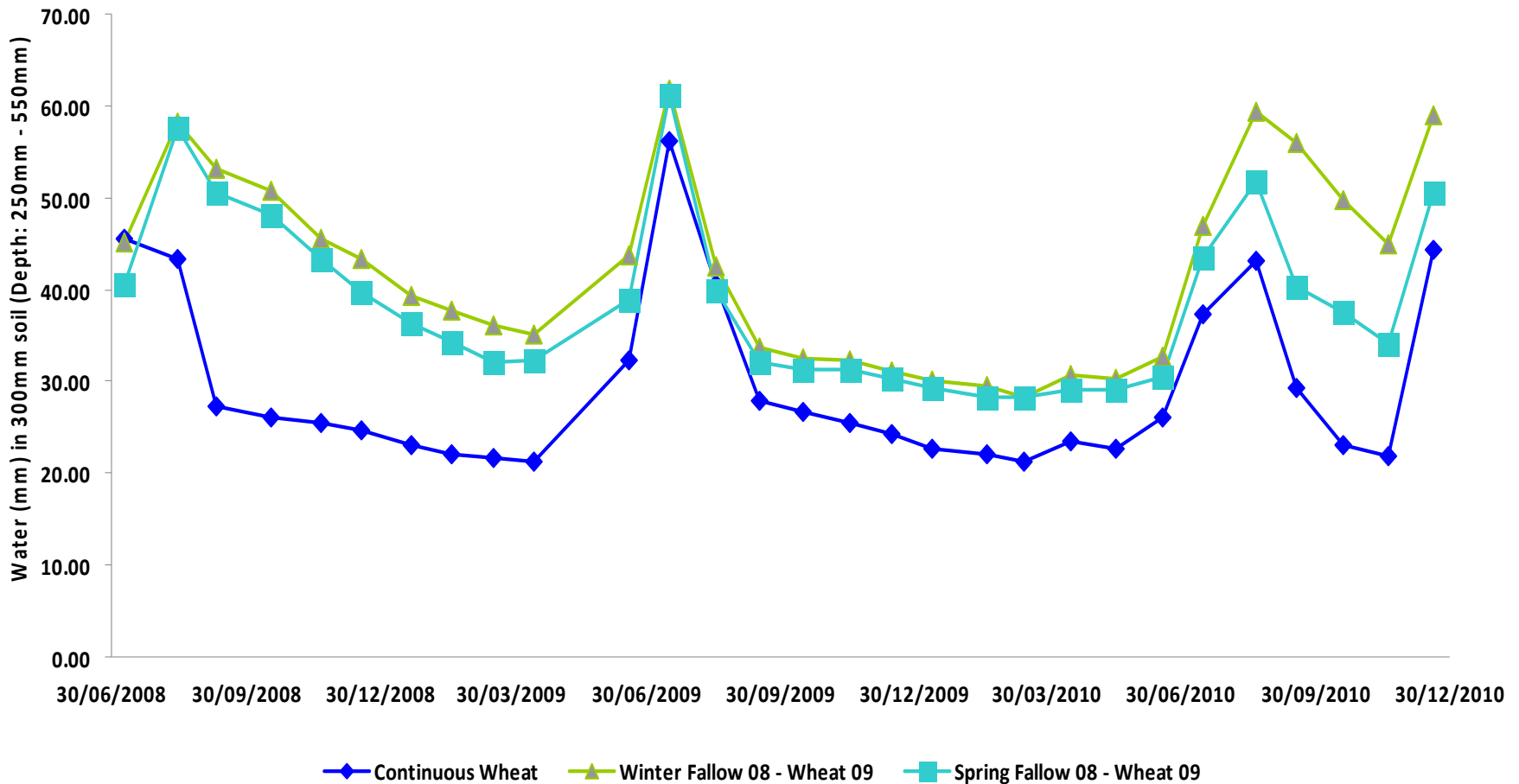
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# Rainfall 2008-2010

	2008	2009	2010	Average
Growing season rainfall	129	187	136	253
Summer Rainfall	165	13	97	84
Total	294	200	233	337

## Soil Moisture (Depth 25cm-55cm)







# Yield and Protein Results

	2008		2009		2010	
	Yield	Protein	Yield	Protein	Yield	Protein
WF-W	0	0	2.04	14.9	0	0
SF-W	0	0	1.87	15.2	0	0
W-W	1.52	14.6	1.7	12.4	0.64	13.3
W-WF	1.61	15.6	0	0	1.13	15
W-SF	1.36	15.1	0	0	0.61	17.2



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# Gross Margins 08/09

	2008		2009		
	Variable Costs (\$/ha)	Gross Margins (\$/ha)	Variable Costs (\$/ha)	Gross Margins (\$/ha)	Total (\$/ha)
<b>WF-W</b>	\$21	-\$21	\$156	\$299	\$278
<b>SF-W</b>	\$33	-\$33	\$166	\$251	\$218
<b>W-W</b>	\$156	\$160	\$193	\$186	\$347



# Gross Margins 09/10

	2009		2010		
	Variable Costs (\$/ha)	Gross Margins (\$/ha)	Variable Costs (\$/ha)	Gross Margins (\$/ha)	Total (\$/ha)
<b>WF-W</b>	\$40	-\$40	\$125	\$127	\$86
<b>SF-W</b>	\$25	-\$25	\$136	\$12	-\$13
<b>W-W</b>	\$193	\$186	\$134	\$8	<b>\$194</b>



## NEFF Trial at Yuna

- Heavy red loam
- 3 treatments
  - wheat on wheat
  - wheat on late spraytop
  - wheat on fallow
- Variety- Bonnie Rock





## NEFF Trial at Yuna

- Seeding rate 54kg/ha
- 70 kg/ha Agras, 40L Flexi-N down the tube
- Growing season rainfall
  - 2009           208 mm
  - 2010           160 mm + 7 mm March
- Wheat price used \$260/t







# NEFF Trial at Yuna



**23/8/10 Wheat on Wheat**



**Wheat on Fallow**



## Yield & Gross Margins for 2009/2010 at Yuna

		2009			2010		
	Yield t/ha	Variable Costs (\$/ha)	Gross Margins (\$/ha)	Yield t/ha	Variable Costs (\$/ha)	Gross Margins (\$/ha)	Total (\$/ha)
<b>WF-W</b>	0	\$70	-\$70	2.14	\$155	\$401	\$331
<b>SF-W</b>	0	\$24	-\$24	1.29	\$155	\$180	\$156
<b>W-W</b>	1.74	\$183	\$269	0.54	\$155	-\$15	\$254



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## Key assumptions

- 4500ha North East Wheatbelt farm
- \$225/t net farm gate wheat price
- No term debt
- Personal costs of \$100 000
- Plant cost of 10% of income
- A seasonal rate of finance of 8%
- Wheat only grown and no livestock







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## Profit before tax at a baseline yield of 1.2 t/ha

1.2 t/ha baseline yield	Fallow response (t/ha)		
	0.3t/ha	0.5t/ha	0.7t/ha
% Fallow			
25%	-\$238	\$39 558	\$79 355
33%	-\$9 982	\$43 075	\$96 132
50%	-\$29 388	\$50 206	\$129 799



## Profit before tax at a baseline yield of 1.7 t/ha

1.7 t/ha baseline yield	Fallow response (t/ha)		
	0.3t/ha	0.5t/ha	0.7t/ha
% Fallow			
25%	\$242 077	\$270 641	\$299 206
33%	\$217 866	\$255 948	\$294 031
50%	\$169 596	\$226 725	\$283 854

Data supplied by Cameron Weeks, Planfarm and Michael Robertson, CSIRO





# Summary



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- Winter fallow plots yielded significantly higher than cont. wheat & spring fallow
- Water holding capacity limited by soil type, depth & subsoil constraints
- Continuous wheat should become less sustainable as weeds and disease pressure increases.
- YIYO fallowing is profitable in the right scenario





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North East Farming Futures (NEFF)

