



Crop Sequence Workshop

Rob Sands

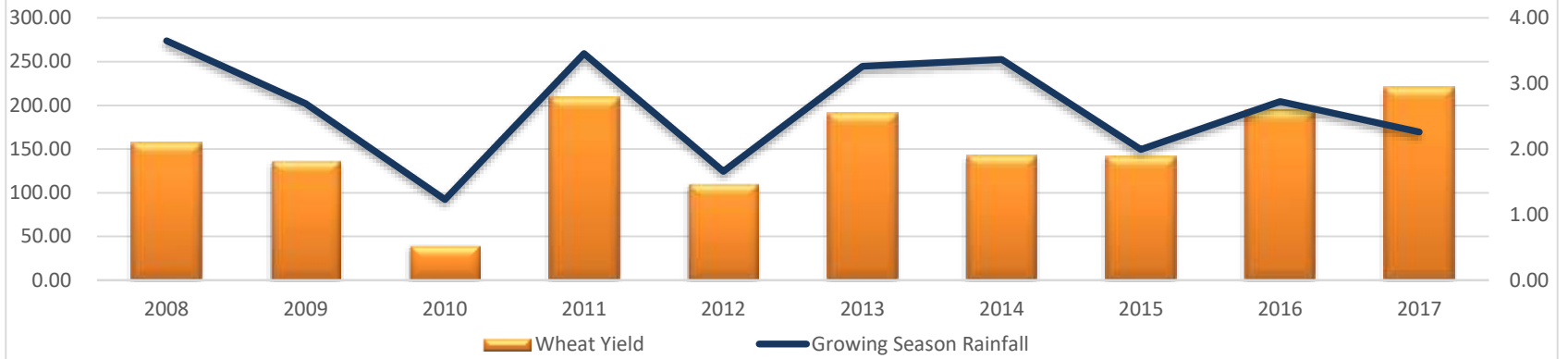
farmanco.com.au

Research Trial Katanning 09-11

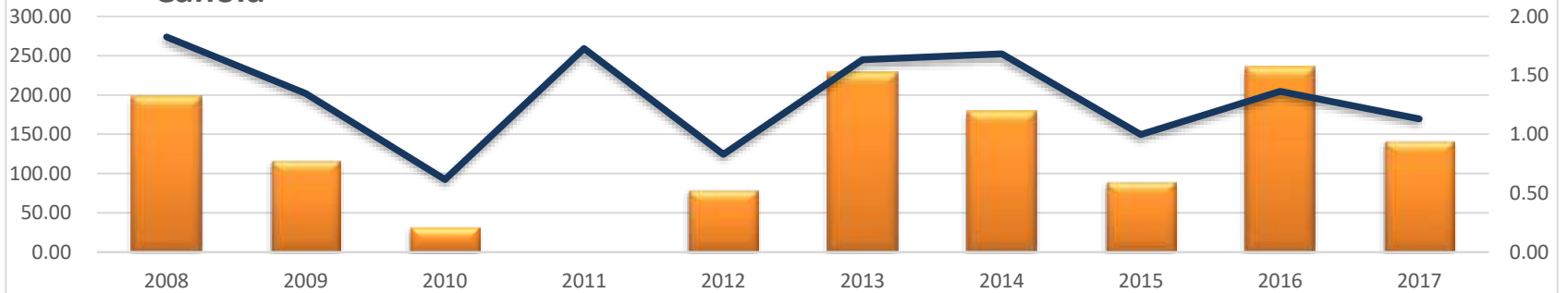
Be careful when interpreting the results.

Rotation	3yr Av. GM	3yr Av. Profit	Notes
W/W/Wj	\$236	\$100	Base Line
Wj/Wj/Wj	\$250	\$114	Add Seed Treatment when needed
B/B/Wj	\$205	\$69	Same yield as Wheat but lower Price, more weeds
Hay/Hay/Wj	\$379	\$243	Good Weed Control and Profitable Hay Price
Oats/Oats/Wj	-\$178	-\$314	Poor Weed Control and low price of Oats
Cn/W/Wj	\$246	\$110	Break crop is profitable and gives good weed and disease control
L/W/Wj	\$218	\$82	Break crop less profitable and N fixation not enough to overcome the lower lupin profit
F/W/Wj	\$154	\$18	Break crop has large loss and is difficult to recover in the rest of the rotation
W/Cn/Wj	\$147	\$11	Canola more impacted by dry year than wheat and weeds may have built up in year 1
W/L/Wj	\$116	-\$20	Break crop has large loss in dry year and weeds built up in year 1
Assume fixed costs of \$136/ha (Farmanco Profit Series average for medium rainfall)			

Wheat



Canola

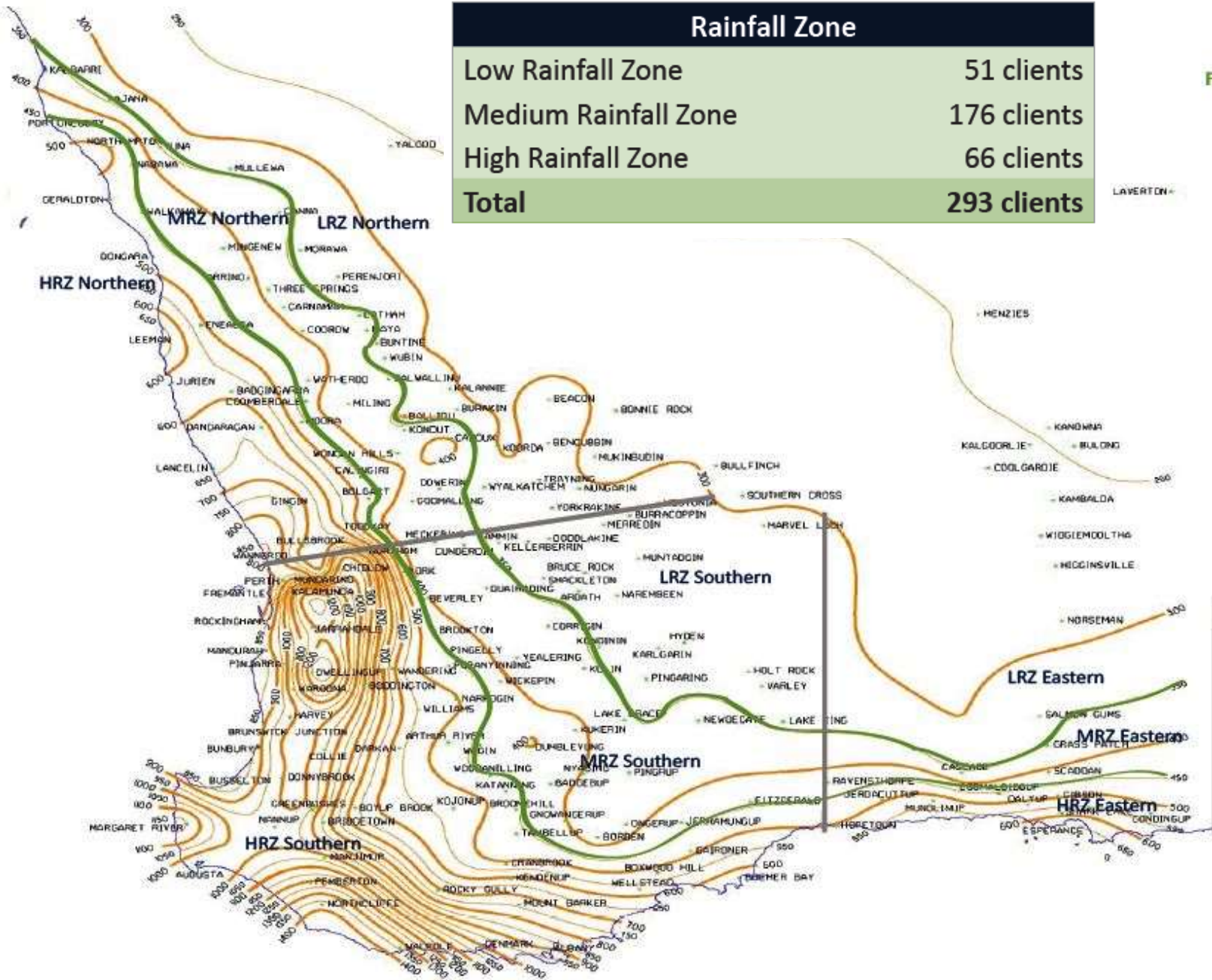


Lupins





Rainfall Zone	
Low Rainfall Zone	51 clients
Medium Rainfall Zone	176 clients
High Rainfall Zone	66 clients
Total	293 clients



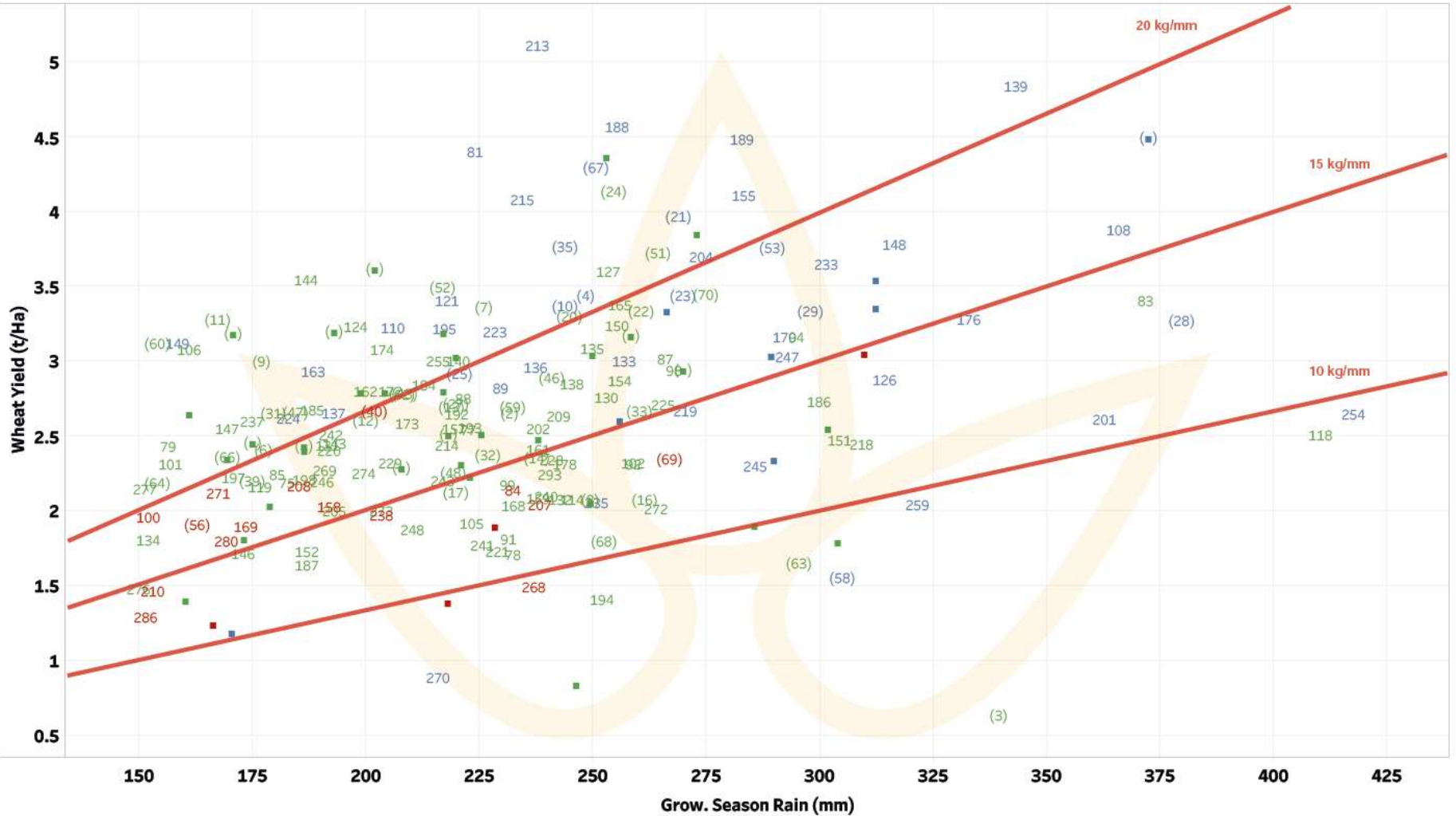
LAVERTON



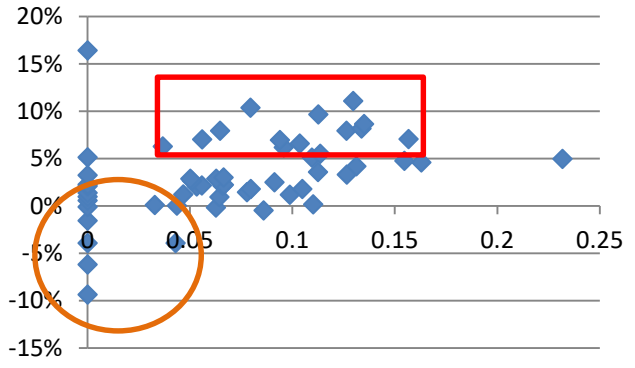
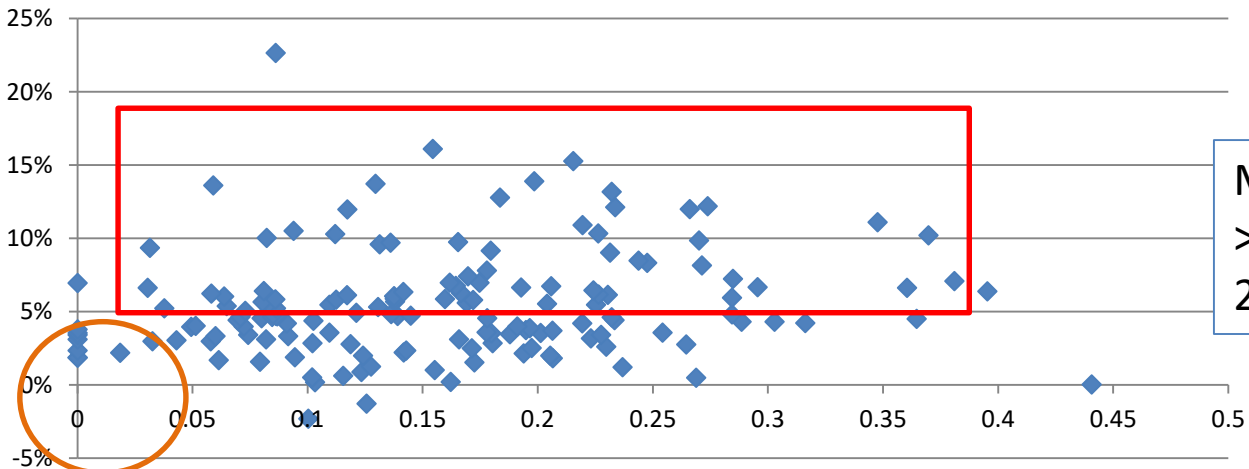
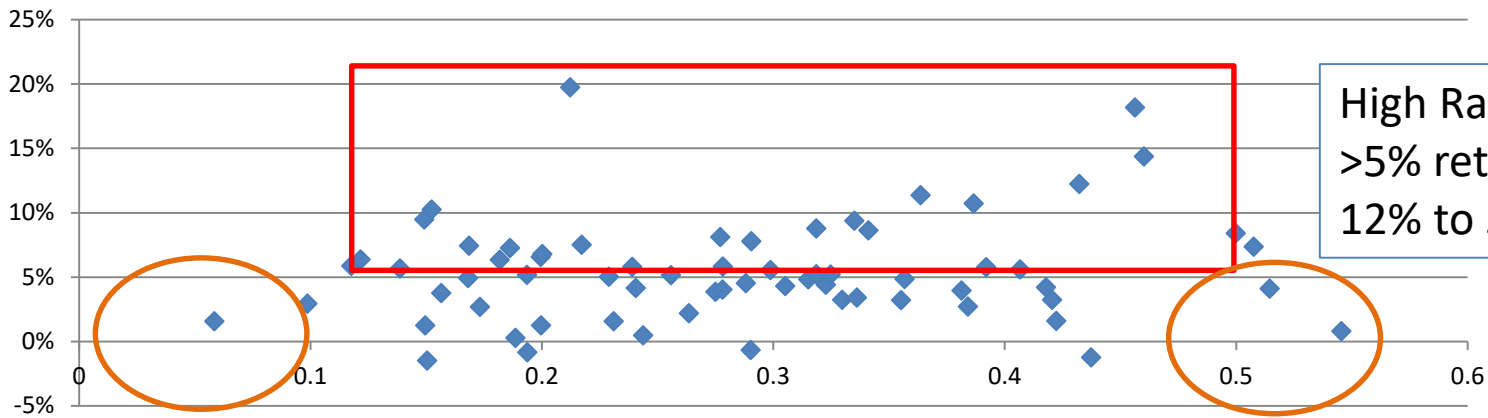
Farmanco Profit Series



Wheat Yield v Rainfall - Five Year Average

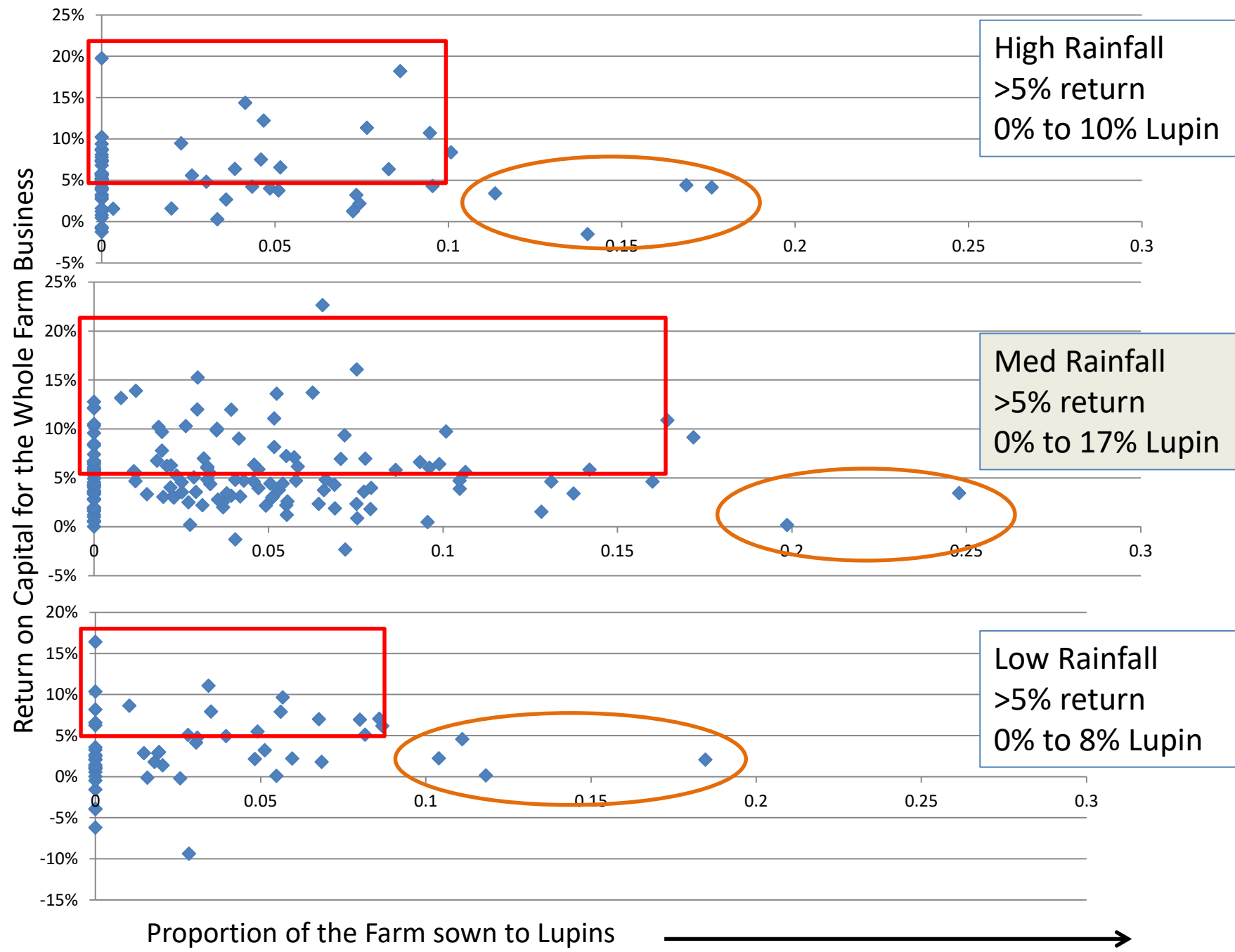


Return on Capital for the Whole Farm Business



Proportion of the Farm sown to Canola





Proportion of the Farm sown to Lupins



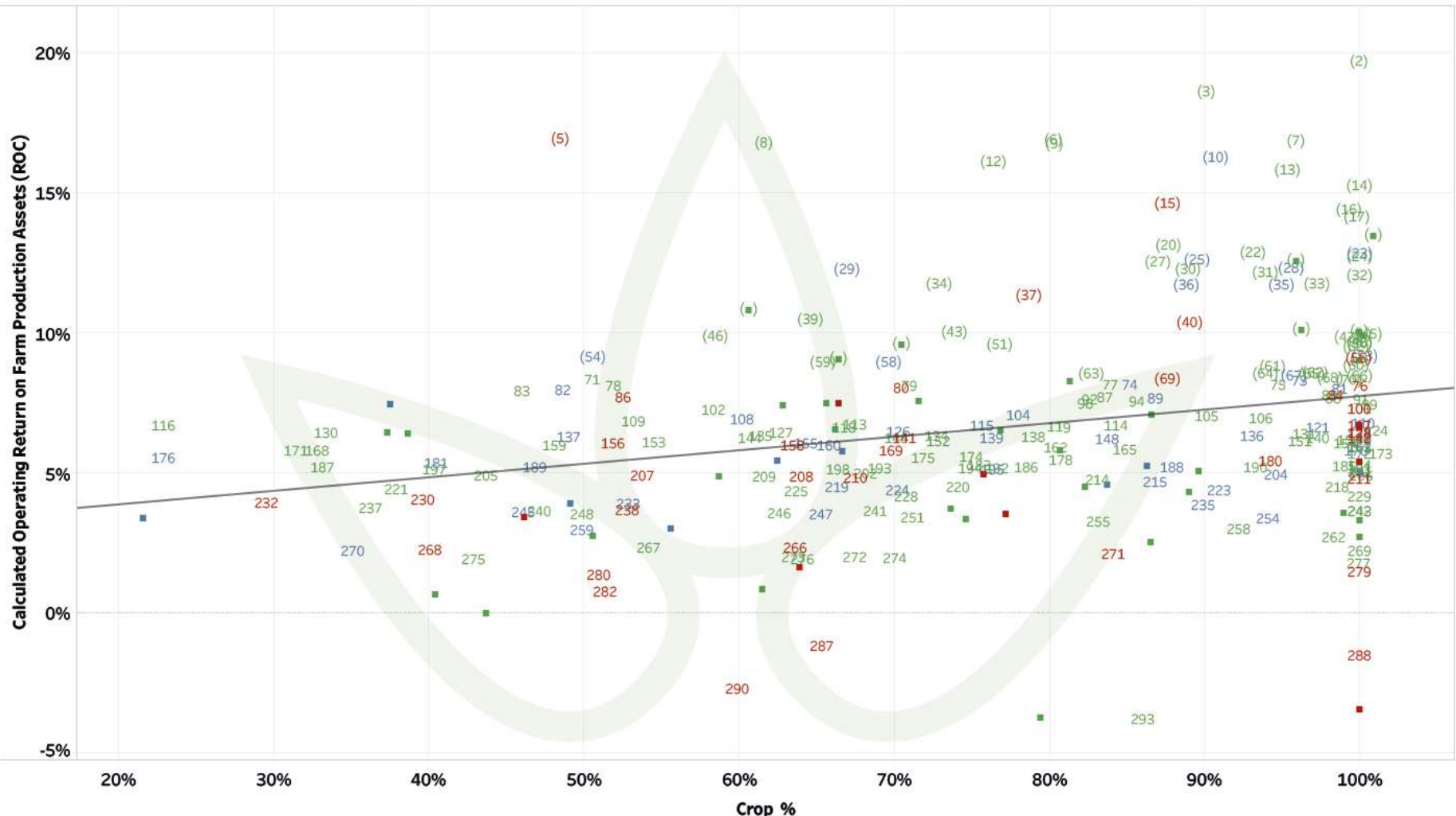


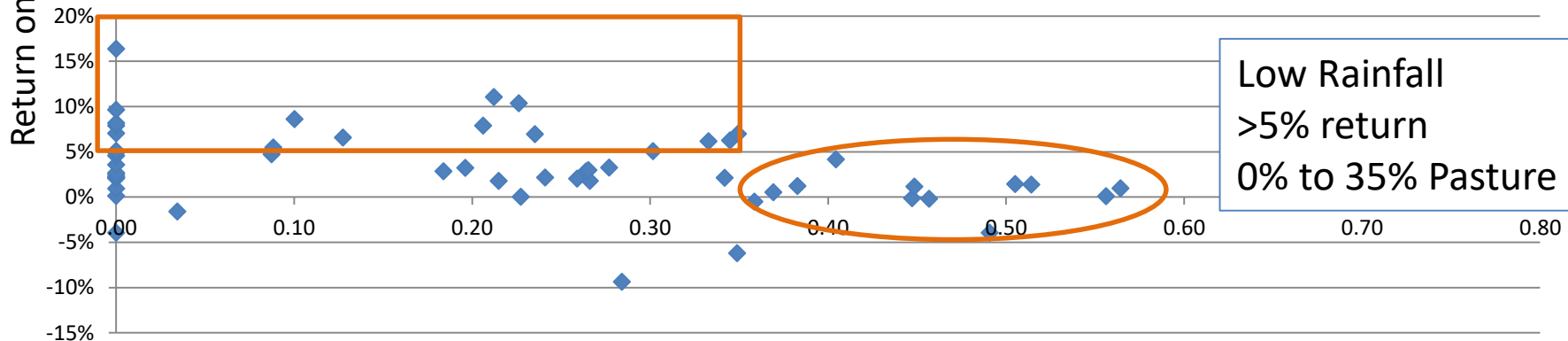
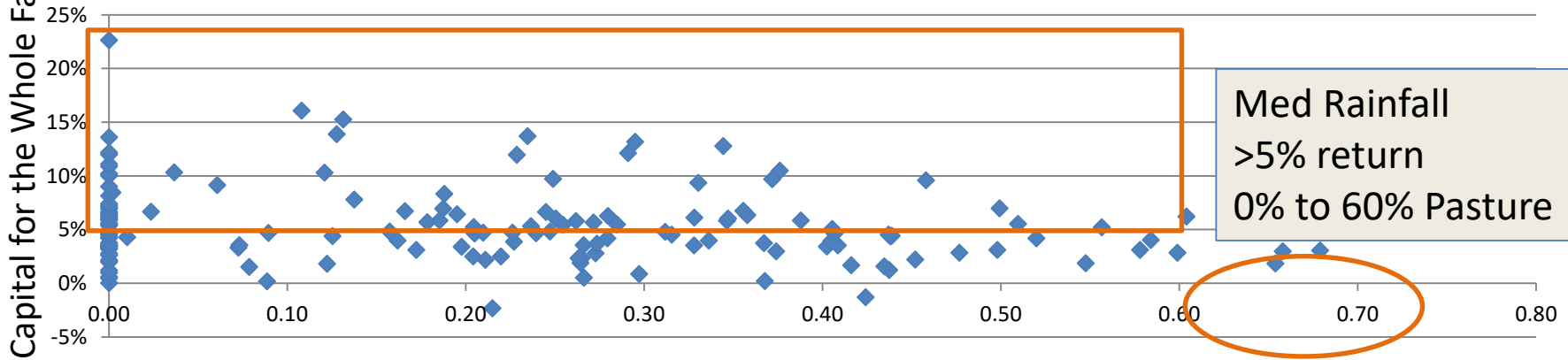
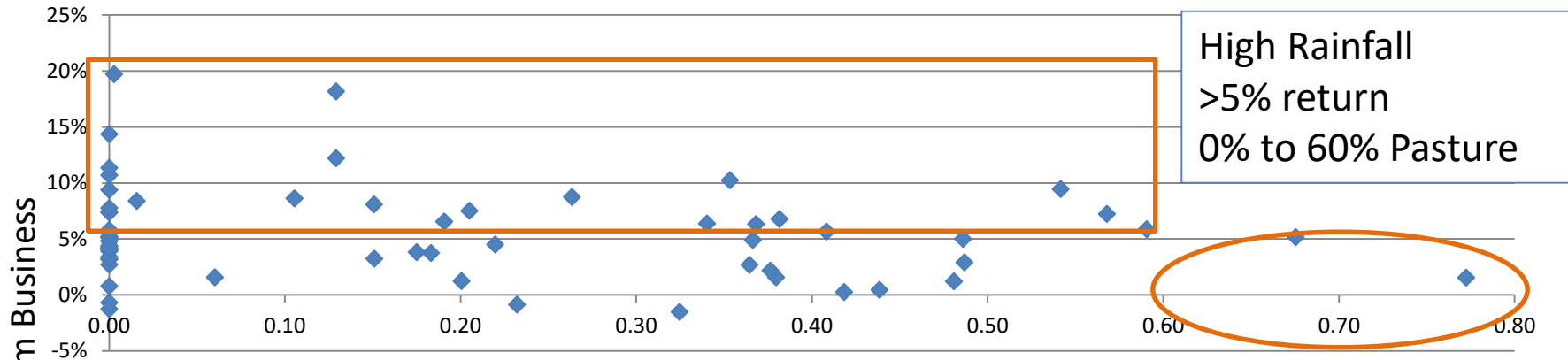
Farmanco Profit Series

Crop % vs Op Return



2017 Cropping Percentage v Five Year Average Farm Operating Return on Farm Production Assets (ROC)





Proportion of the Farm in Pasture



Yield benefits of long fallow

Average continuous wheat (CW) yield (t/ha),
Increased yield from a fallow (when a yield benefit occurred) and
% years a benefit occurred in last 100 years

Soil type	Dalwallinu			Perenjori			Merredin		
	CW yield (t/ha)	Yield benefit	% years	CW yield (t/ha)	Yield benefit	% years	CW yield (t/ha)	Yield benefit	% years
Clay-Loam	2.37	+0.59	29%	1.92	+0.82	47%	1.74	+0.76	60%
Loam	2.22	+0.44	25%	1.90	+0.49	41%	1.74	+0.51	50%
Good sand	2.14	+0.46	22%	1.79	+0.49	39%	1.70	+0.54	37%
Shallow or poor sands	1.39	+0.20	8%	1.20	+0.12	9%	1.12	+0.21	6%

(CW yield = 0.7* Yield potential, yield benefit only counted when >50kg/ha)

Source: Yvette Oliver CSIRO

	\$/ha		
In the year of Fallow	Good Year	Average	Poor Year
Yield	3.00	2.00	1.00
Price (Farm Gate)	250	260	300
Income	750	520	300
Variable Costs	350	300	250
Gross Margin	400	220	50
Fallow Cost	30	30	30
Opportunity Cost	430	250	80
Yield Boost Needed (at Farm Gate \$250)	1.72	0.88	0.20

Opportunity Cost

	Average Rotation Profit \$/ha								
Soil type	Dalwallinu			Perenjori			Merredin		
	Pasture /w/b	Grain Legume /w/w/b/b	Fallow /w/w/b/b	Pasture /w/b	Grain Legume /w/w/b/b	Fallow /w/w/b/b	Pasture /w/b 2.5 DSE/ha	Grain Legume /w/w/b/b	Fallow /w/w/b/b
Clay- Loam	119	110	114	103	95	108	76	60	76
Loam	106	95	97	99	91	97	76	60	68
Good Sand	94	82	83	81	70	75	66	64	58
Shallow or poor sands	4	-35	-21	2	-24	-16	-27	-57	-63

Pasture vs Grain Legume vs Fallow

Enterprise and Rotation Analysis

File Version: September 14, 2005

Data Updated: August 15, 2018

Low Rainfall 5 yr Average

Data	Enterprise Analysis		Rotation Analysis (Charts)	
General	Crop	Sheep	Crop Only (Light to Medium Soils)	Crop & Pasture (Light to Medium Soils)
Area & Non Operating Cost Assumptions	Crop Cost Summary and Breakeven Yields	Sheep Physical	Gross Margin	Gross Margin
Crop	Crop Yield Sensitivity	Sheep Dollars	Operating Profit	Operating Profit
Crop Assumptions	Crop Gross Margin Chart	Sheep Profitability	Variable Costs	Variable Costs
Sheep	All	Sheep Price Sensitivity 1	Heavy Soils	Blank
Sheep Assumptions	All Enterprise Gross Margin Chart	Sheep Price Sensitivity 2	Gross Margin	Gross Margin
Sheep Change Parameters	All Enterprise Operating Profit Chart	Sheep Sensitivity Chart (% Change)	Operating Profit	Operating Profit
Rotations		Sheep Sensitivity Chart (\$/ha Change)	Variable Costs	Variable Costs
Compile Rotations		Sheep Gross Margin Chart		
Compile Rotation Charts				

Enterprise Summary

Main Menu

Base Input

Crop Input

Compile Rotations

Compile Charts

Sheep Input

Enterprise Summary Data

Crop Analysis Summary

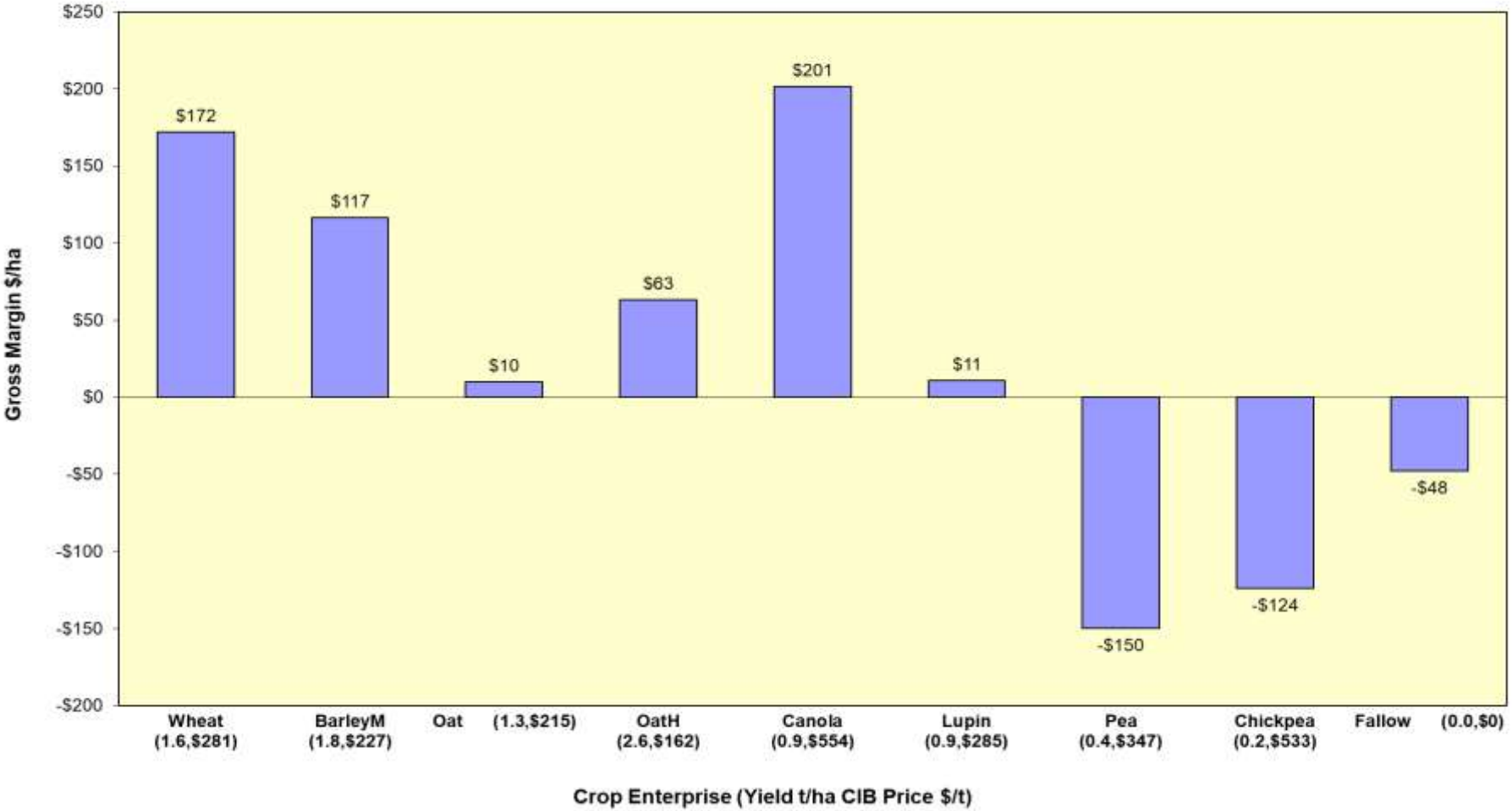
Crop Yield Sensitivity



Crop GM Low R'Fall



Crop Enterprise Gross Margin \$/ha





Sheep Profitability - Low



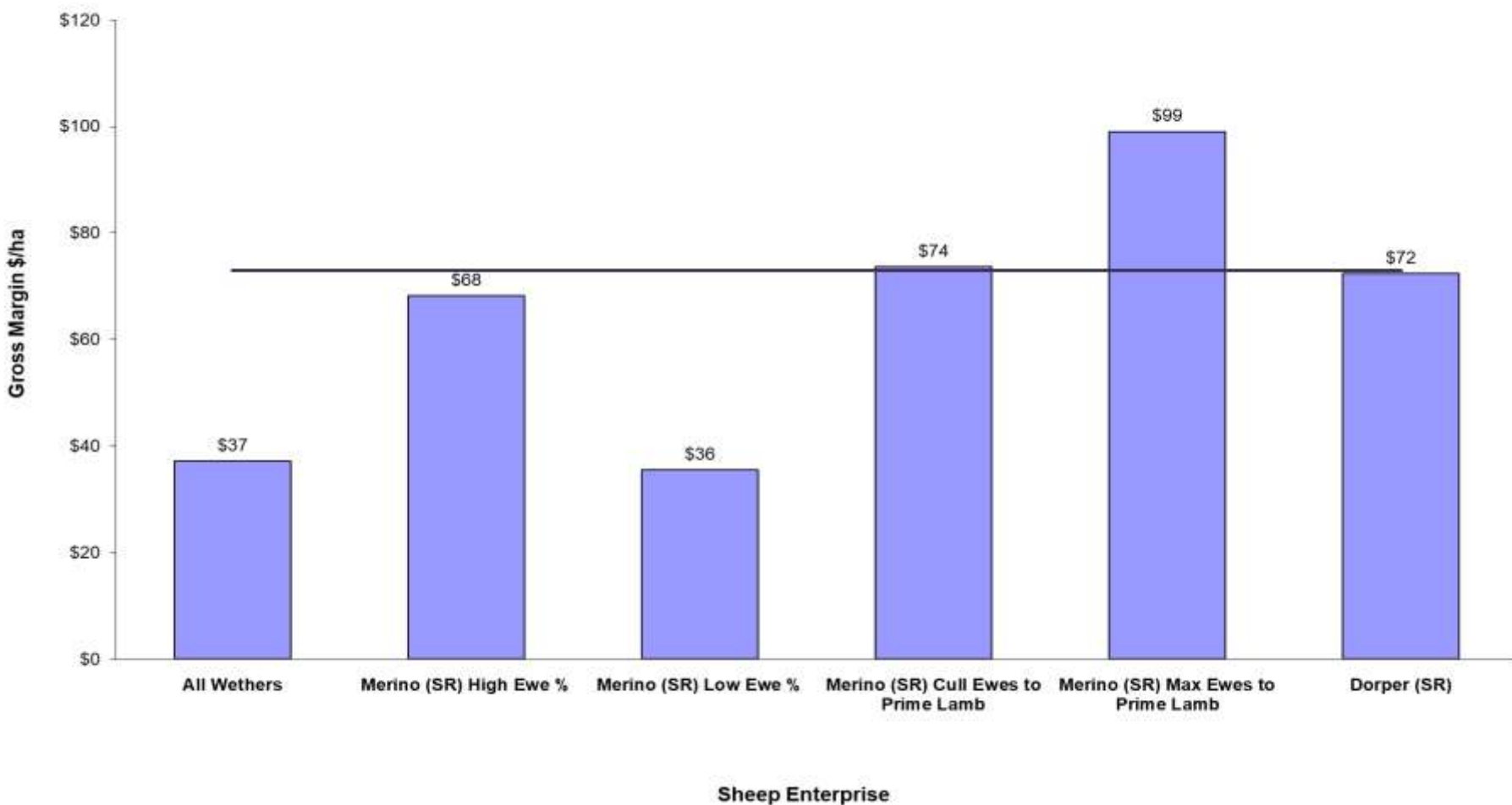
Year	GM \$/DSE	SR DSE/ha	GM \$/ha	Fixed Costs \$/ha	Op Profit \$/ha	5 Year Rolling Av.
2007	4	2.23	11	56	-45	
2008	8	2.26	17	81	-64	
2009	24	2.28	50	67	-17	
2010	36	2.22	80	66	14	
2011	37	2.24	83	69	14	-20
2012	14	2.00	28	70	-42	-19
2013	16	2.62	43	80	-37	-14
2014	28	2.21	62	72	-10	-12
2015	31	2.00	62	69	-7	-16
2016	32	2.68	86	78	8	-18
2017	38	2.89	110	79	31	-3



Sheep Flock GM Low R'Fall



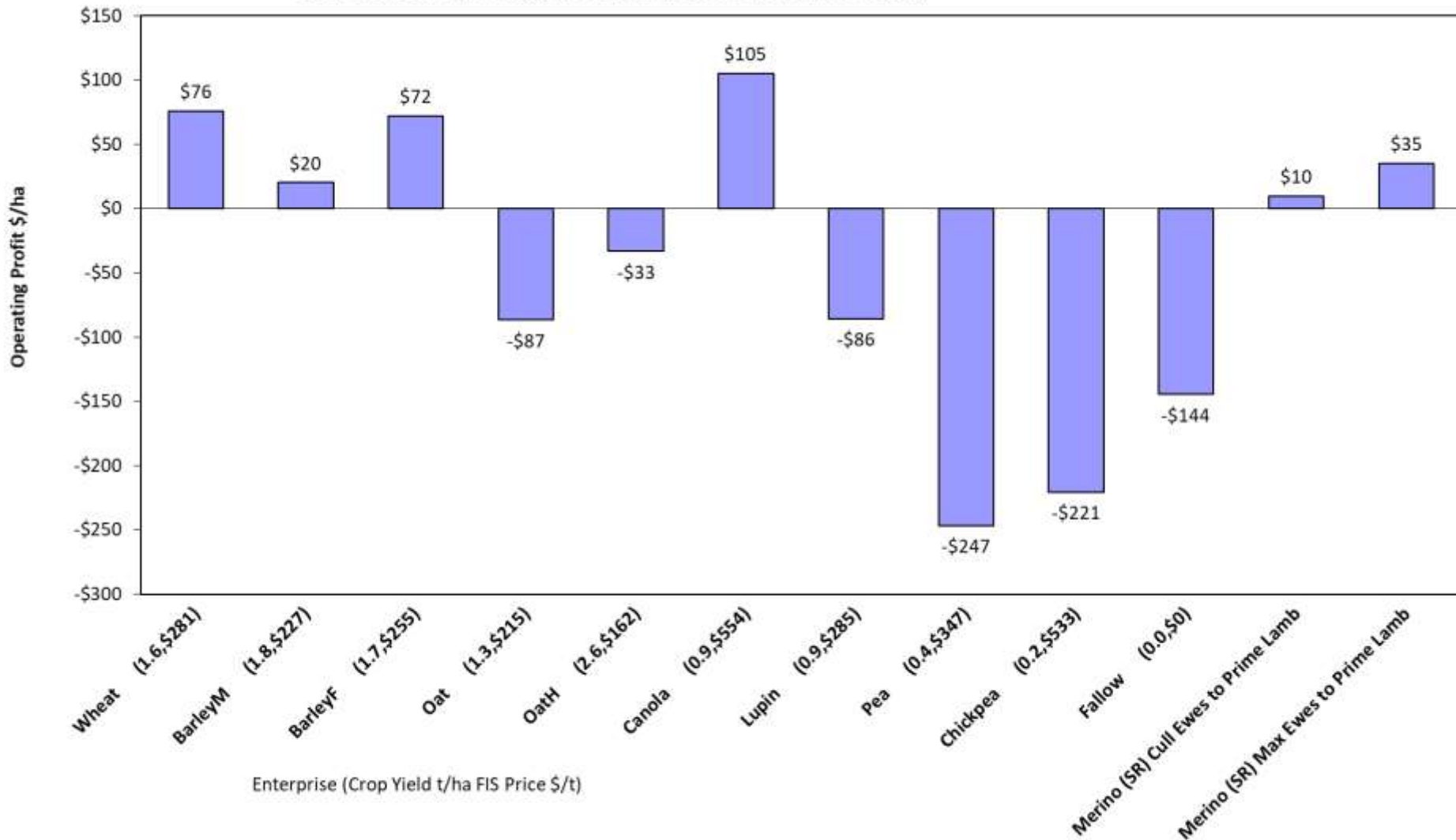
Gross Margin \$/ha (at 3.00 dse/arable wgha)



Low Rainfall – Enterprise Operating Profits



Crop & Sheep Operating Profit \$/ha (at 3.00 dse/arable wgha)

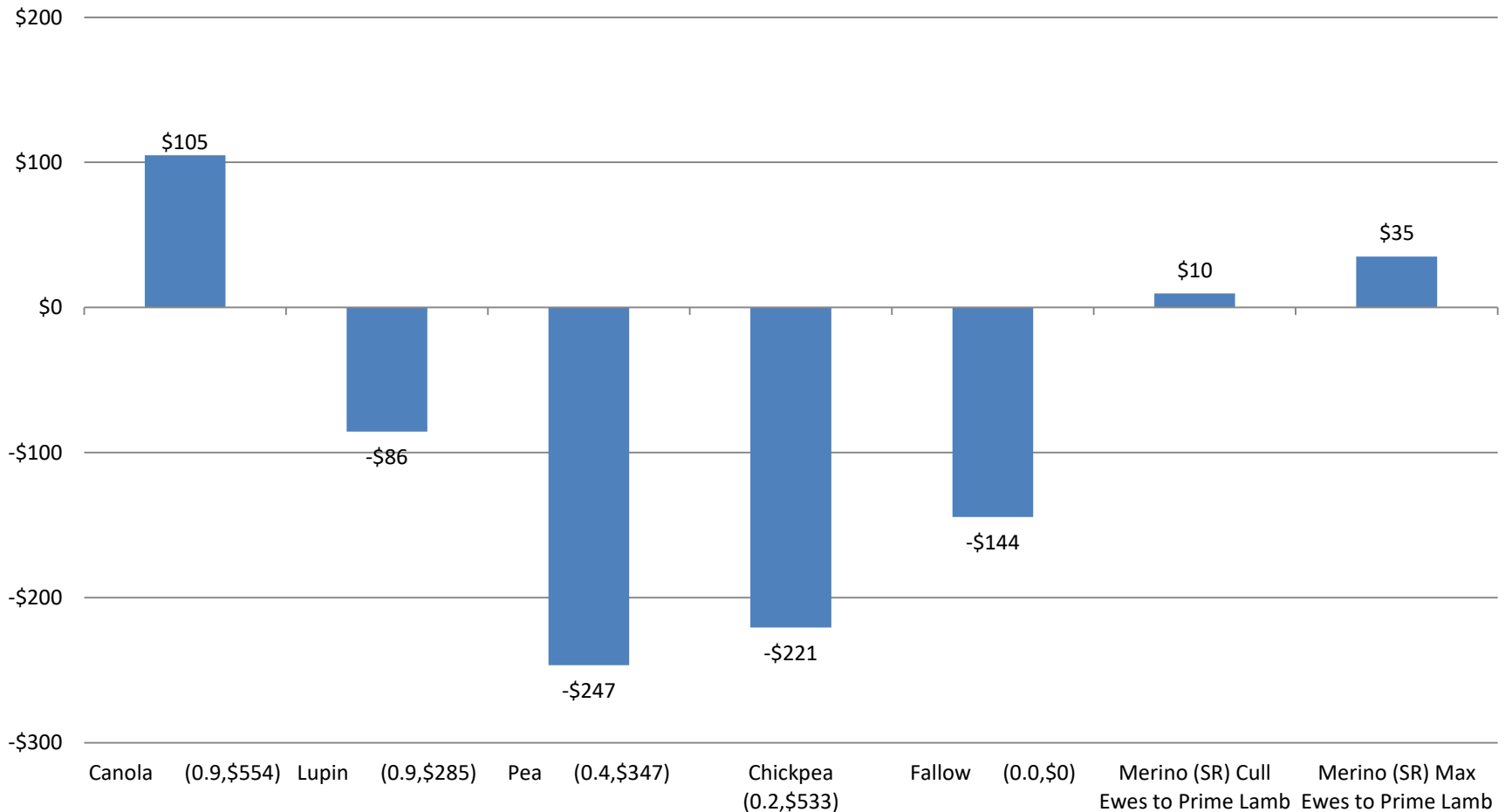


Low Rainfall

5 Yr Av. Operating Profit for Break Phase



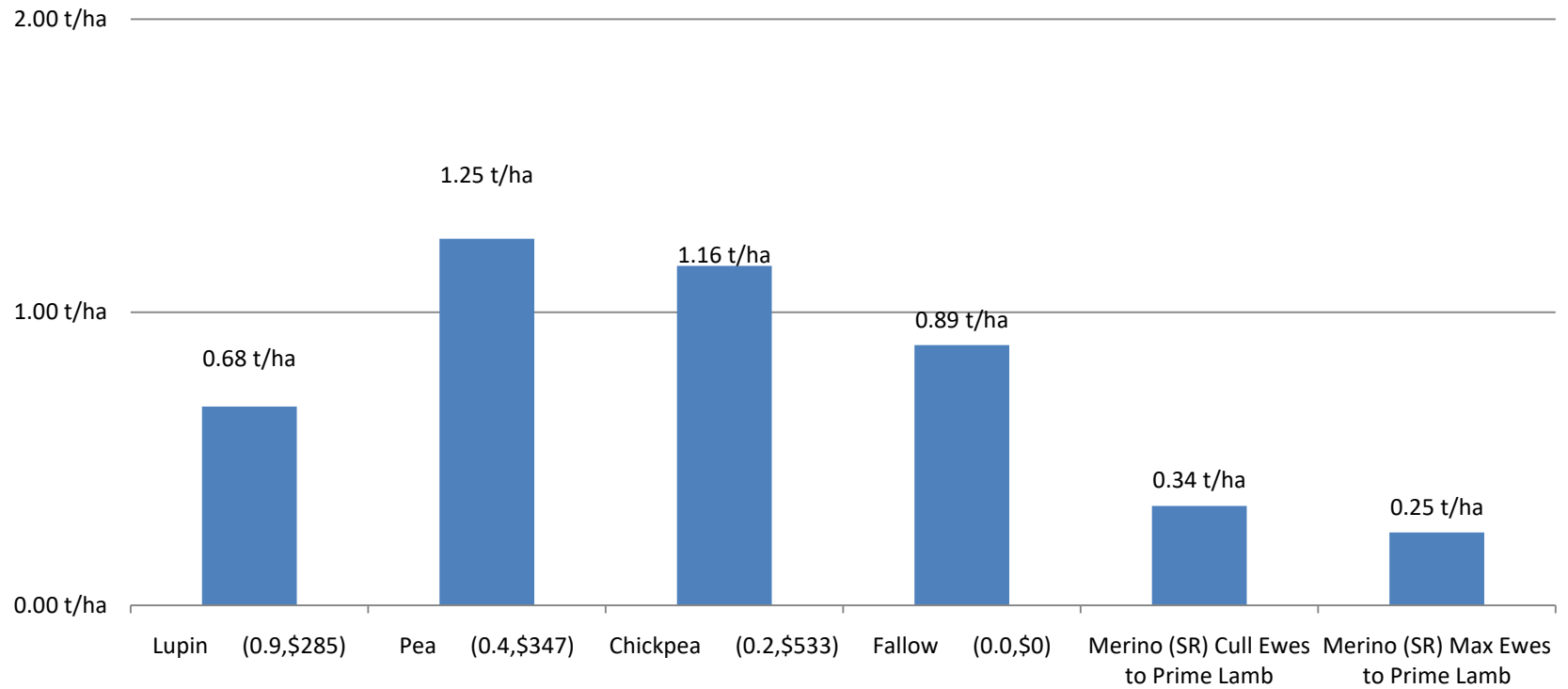
2013 -2017 Break Crop/Pasture Operating Profit - LRZ



Low Rainfall



Cereal Yield Response required to match Canola

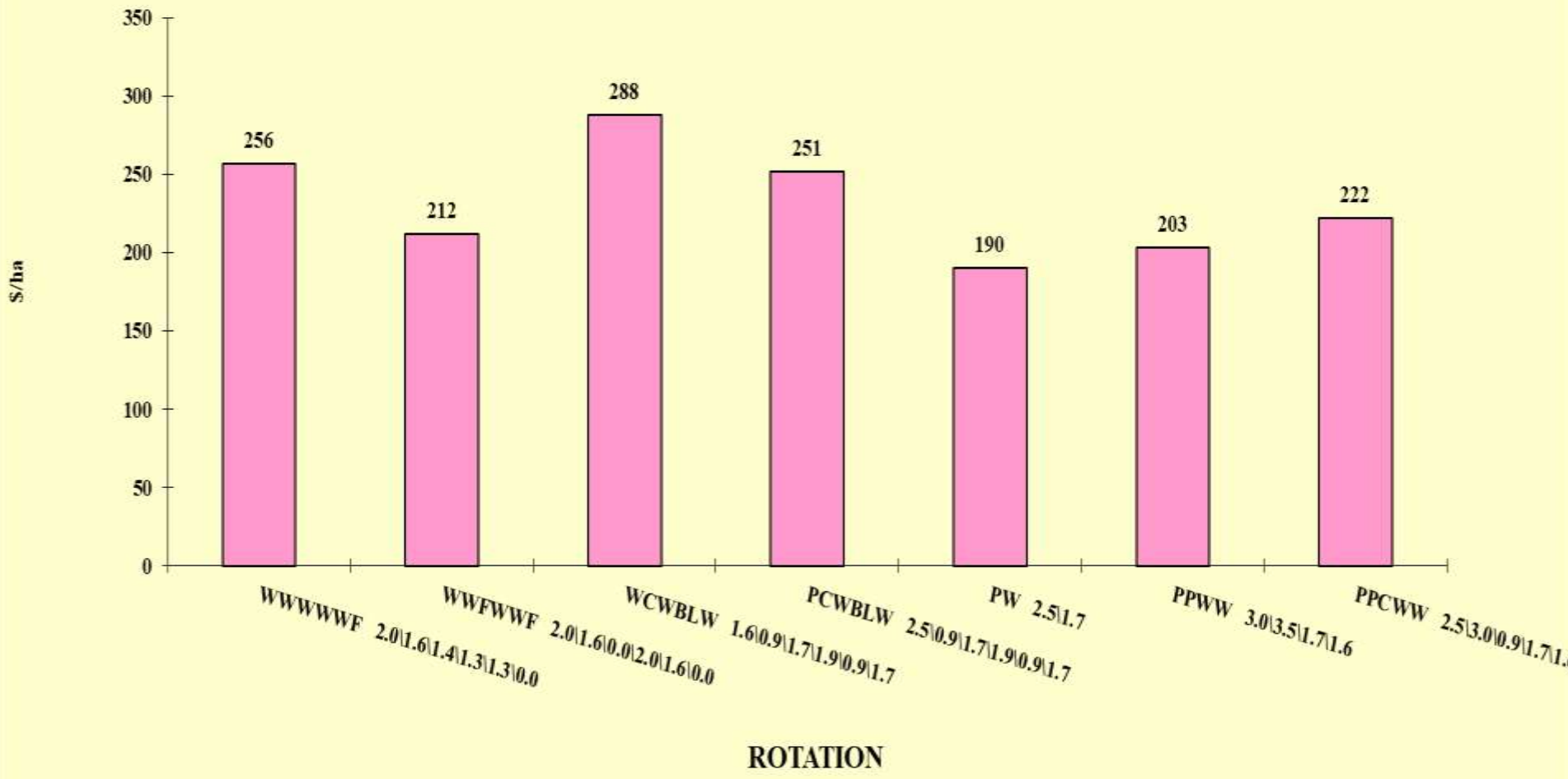




Low Variable Costs & Risk

CROPPING ROTATIONS LIGHT/MEDIUM LAND
Rotation Variable Costs

Sheep Enterprise Used in Pasture
Phase = Merino (SR) Max Ewes
to Prime Lamb



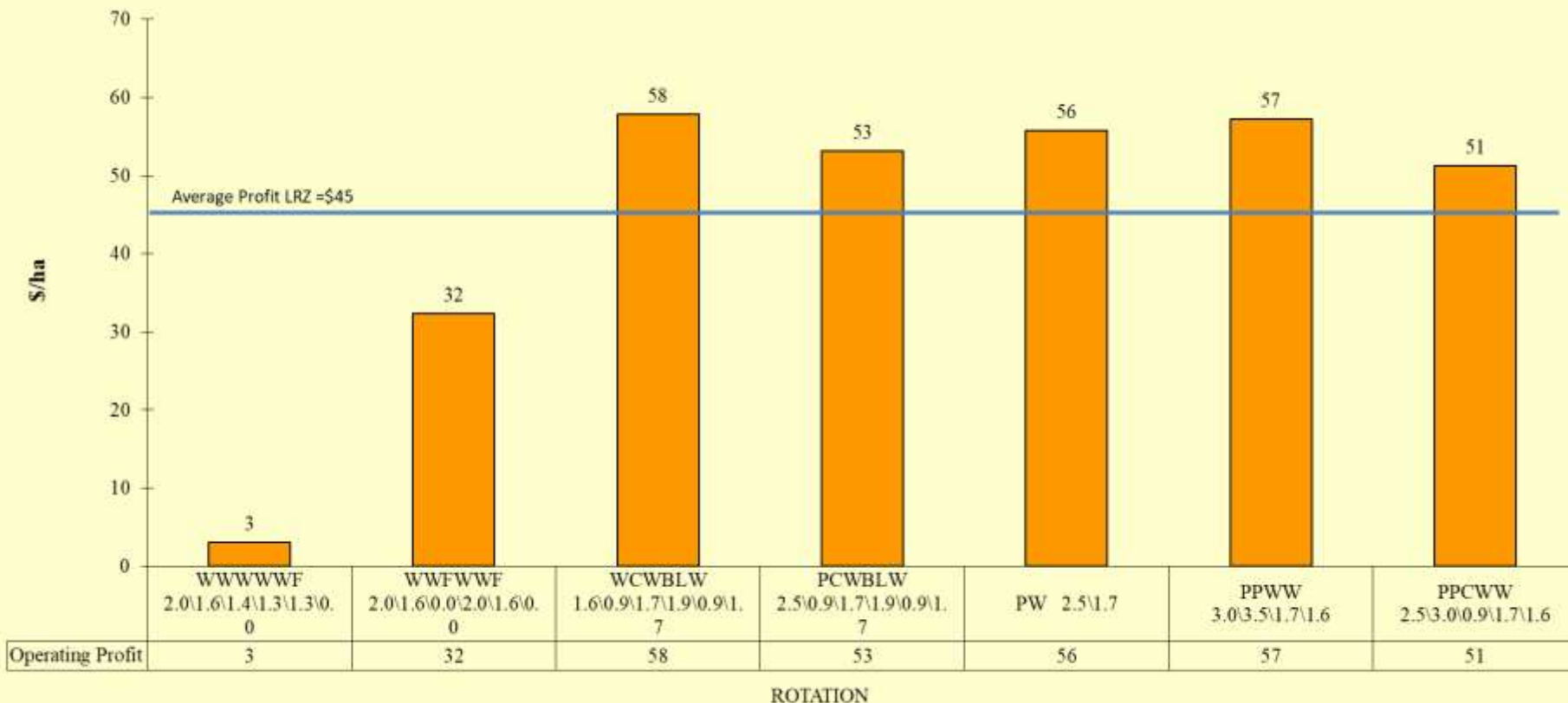
Low Rainfall



Client Av. inc Sheep \$32/ha
Crop Only \$41/ha

CROPPING ROTATIONS 5 Yr Average Rotation Operating Profit

Sheep Enterprise Used in Pasture Phase =
Merino (SR) Max Ewes to Prime Lamb

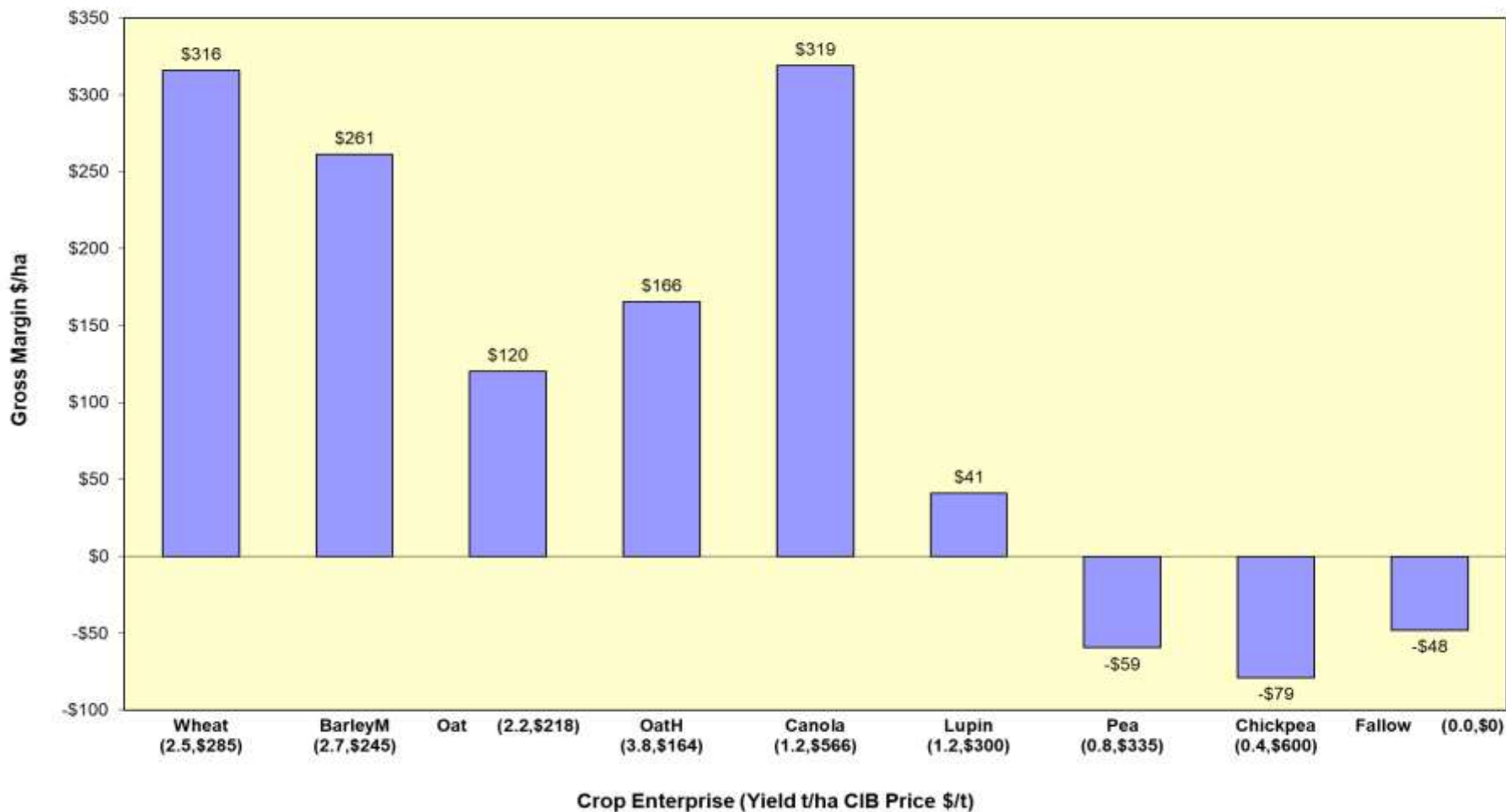




Crop GM Medium R'Fall



Crop Enterprise Gross Margin \$/ha





Sheep Profitability - Medium



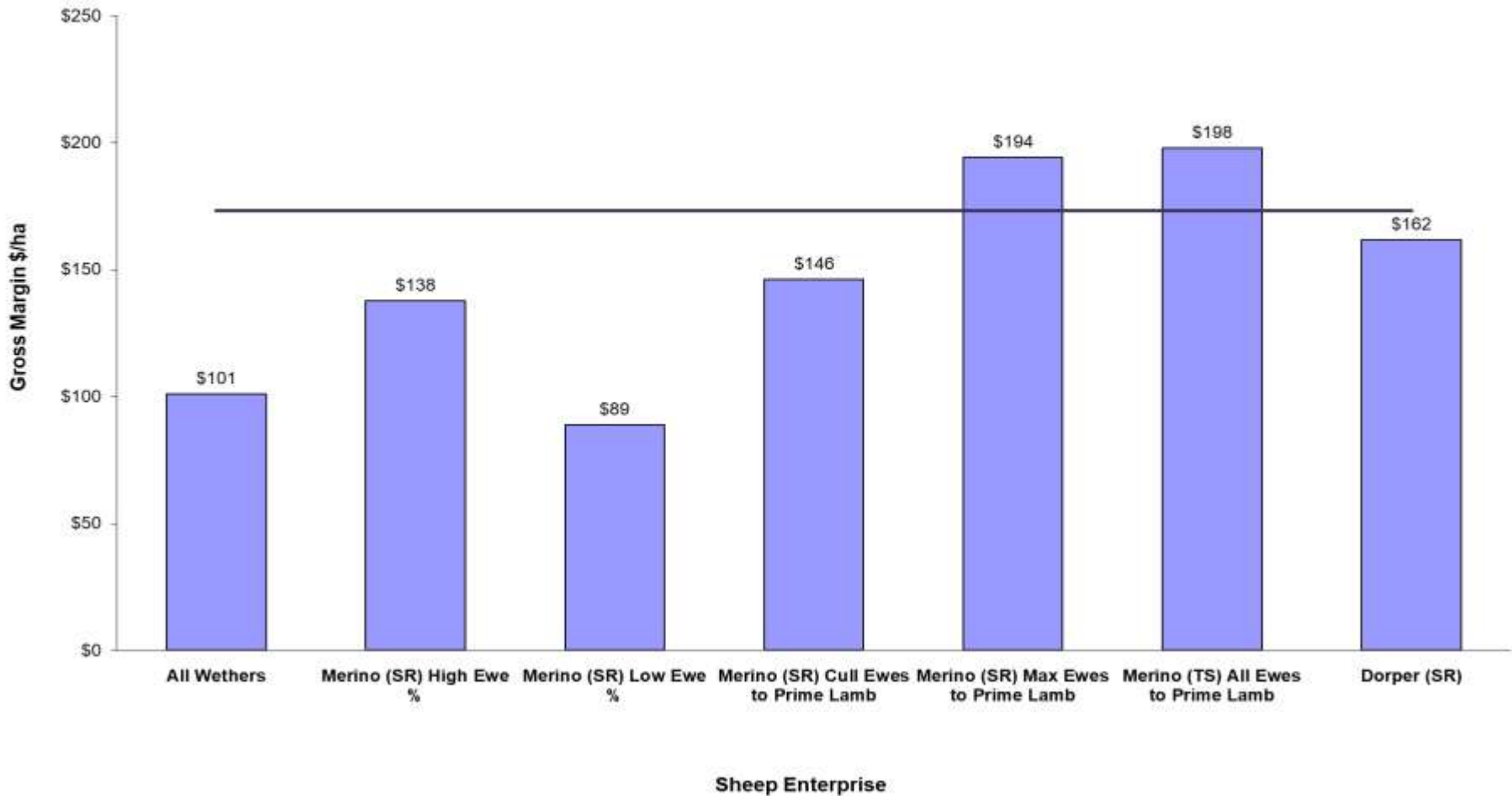
Year	GM \$/DSE	SR DSE/ha	GM \$/ha	Fixed Costs \$/ha	Op Profit \$/ha	5 Year Rolling Av.
2007	8	5.00	40	117	-77	
2008	6	5.00	30	142	-112	
2009	20	5.00	100	130	-30	
2010	43	5.00	215	110	105	
2011	40	5.00	200	121	79	-7
2012	10	5.00	50	124	-74	-6
2013	15	5.00	75	144	-69	2
2014	24	5.00	120	110	10	10
2015	34	4.77	162	111	51	-1
2016	44	5.16	227	125	102	4
2017	48	5.31	255	111	144	48



Sheep Flock GM Med R'Fall



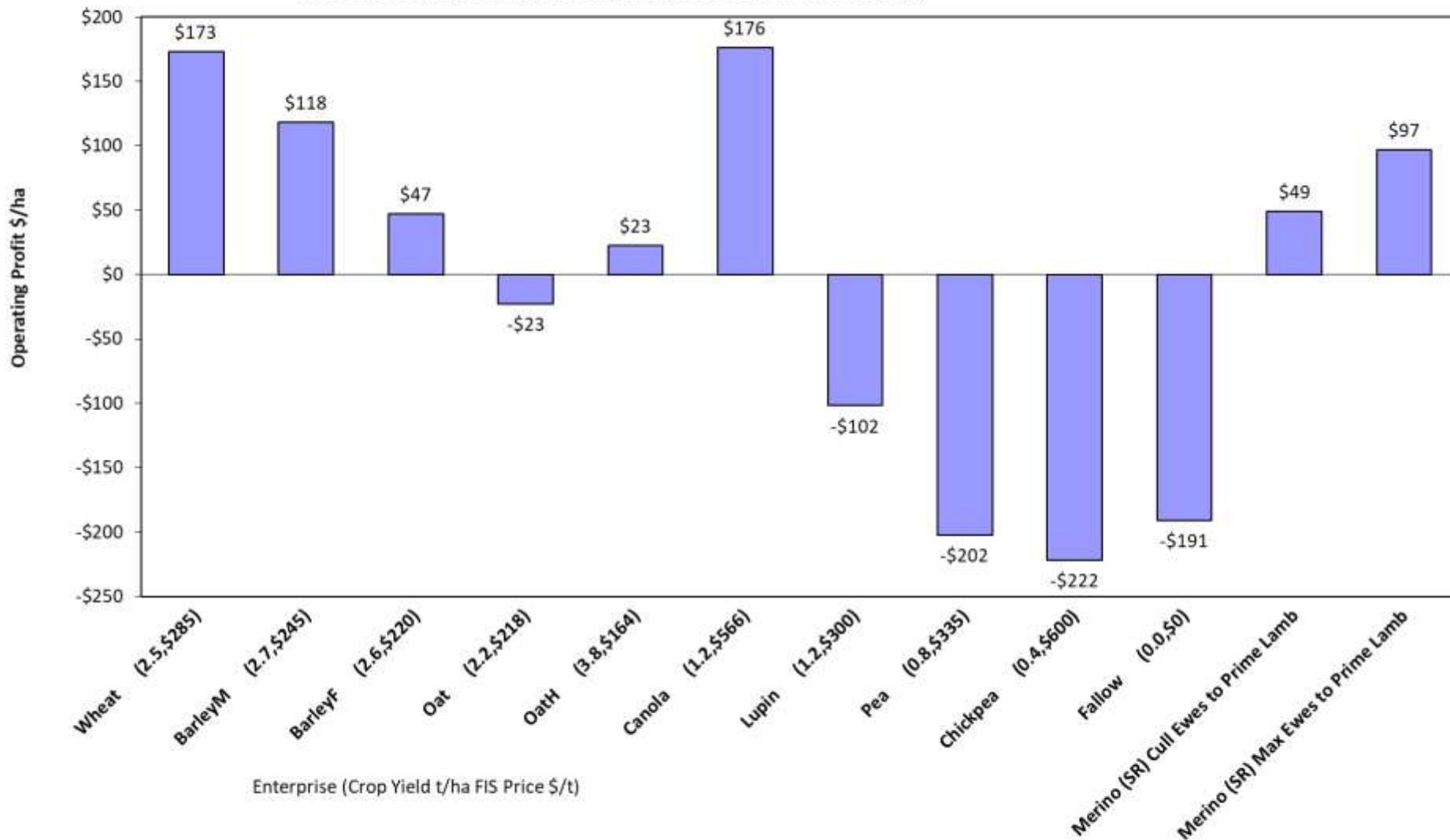
Gross Margin \$/ha (at 5.63 dse/arable wgha)



Medium Rainfall Operating Profits



Crop & Sheep Operating Profit \$/ha (at 5.63 dse/arable wgha)

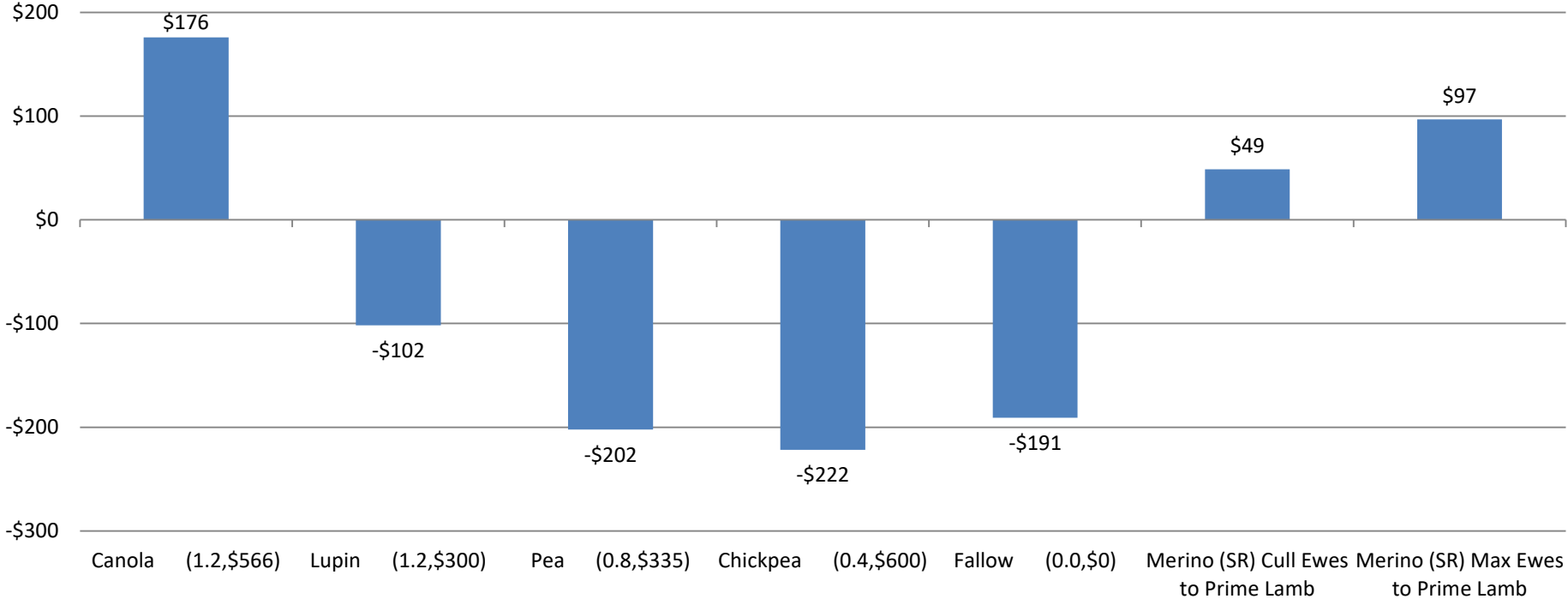




Medium 5yr Av. Operating Profit Break Phase



2013 - 2017 Break Crop/Pasture Operating Profit - MRZ

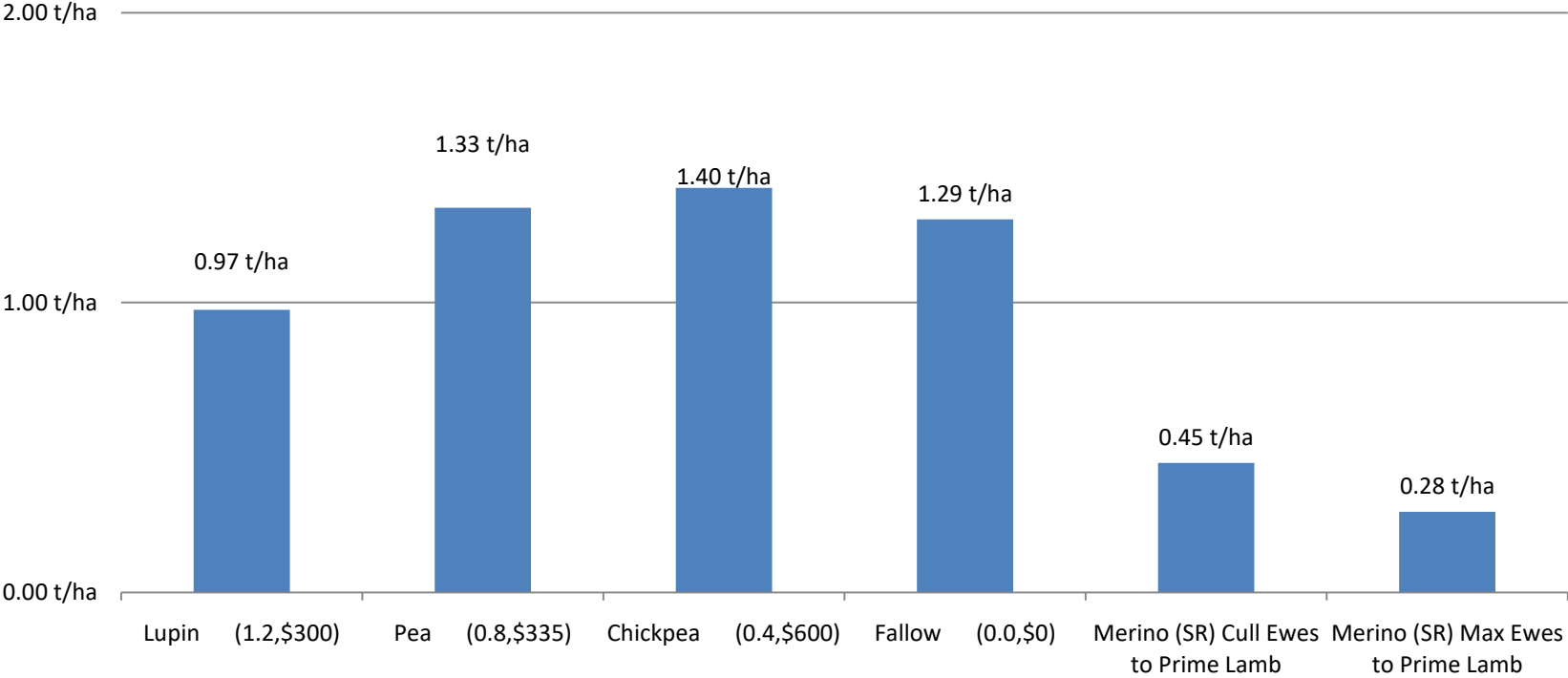




Medium Cereal Yield Response?



Cereal Yield Response required to match Canola



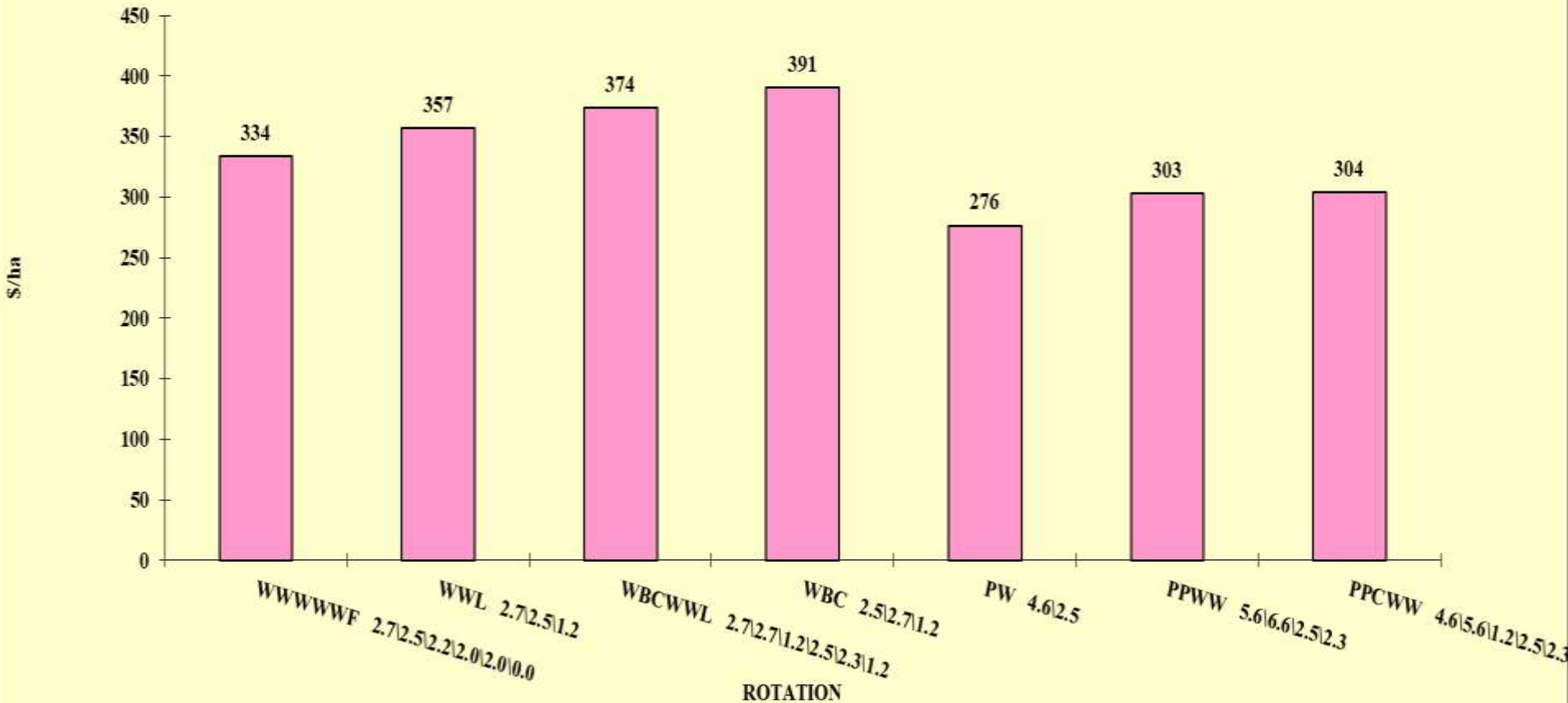


Medium Variable Costs & Risk



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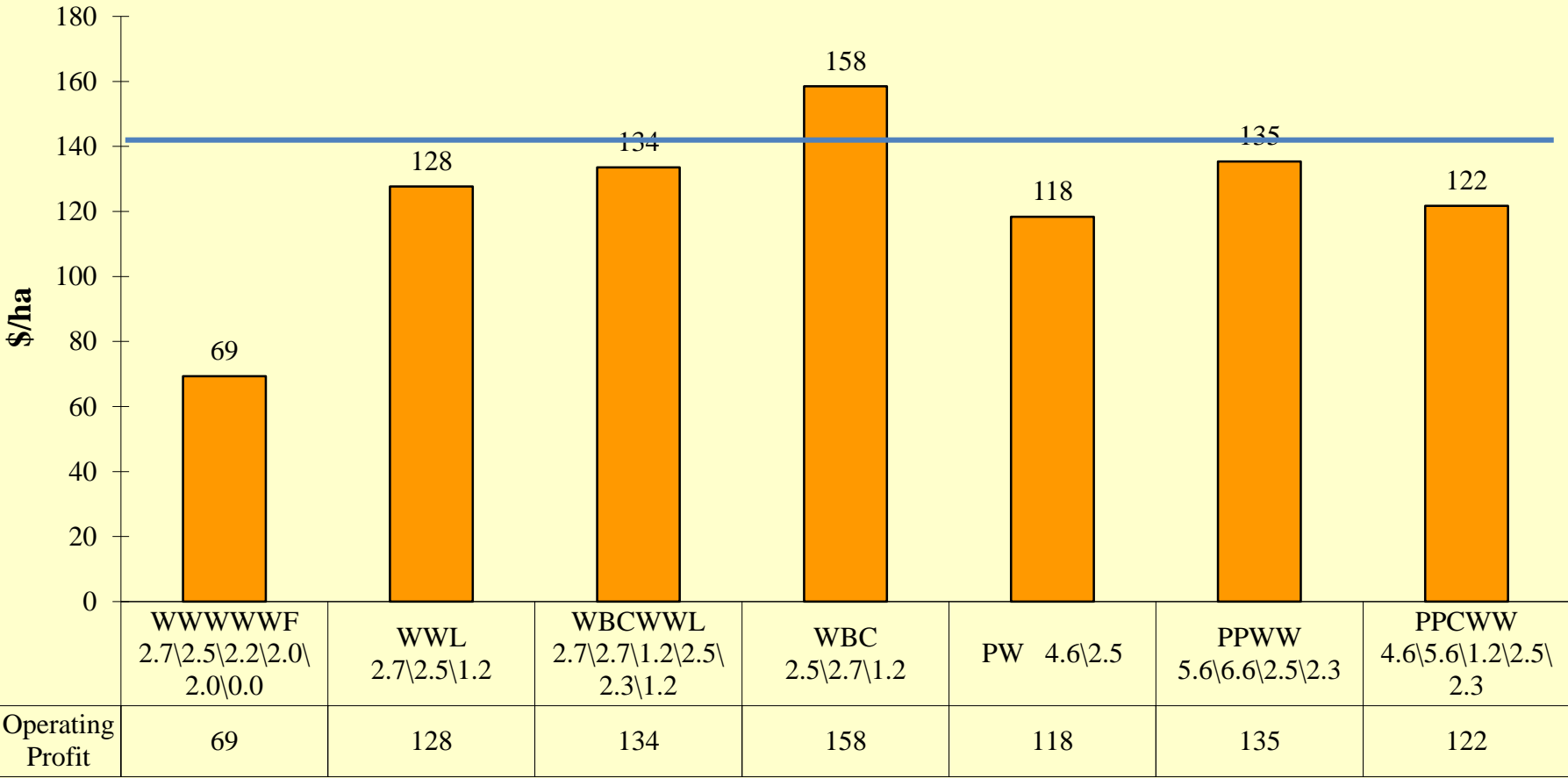


Medium – 5 yr Average



CROPPING ROTATIONS 5 Yr Average
 Rotation Operating Profit

Sheep Enterprise Used in
 Pasture Phase = Merino (SR)
 Max Ewes to Prime Lamb



Operating Profit

ROTATION



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Questions

