



1985

Phosphorus nutrition.

M. D. Bolland

M. J. Baker

C. H. Phillips

Follow this and additional works at: <https://researchlibrary.agric.wa.gov.au/rqmsplant>



Part of the [Agronomy and Crop Sciences Commons](#), and the [Soil Science Commons](#)

Recommended Citation

Bolland, M D, Baker, M J, and Phillips, C H. (1985), *Phosphorus nutrition*.. Department of Agriculture and Food, Western Australia, Perth.
Article.

This article is brought to you for free and open access by the Research Publications at Research Library. It has been accepted for inclusion in Experimental Summaries - Plant Research by an authorized administrator of Research Library. For more information, please contact jennifer.heathcote@agric.wa.gov.au, sandra.papenfus@agric.wa.gov.au, paul.orange@dpird.wa.gov.au.

IMPORTANT DISCLAIMER

This document has been obtained from DAFWA's research library website (researchlibrary.agric.wa.gov.au) which hosts DAFWA's archival research publications. Although reasonable care was taken to make the information in the document accurate at the time it was first published, DAFWA does not make any representations or warranties about its accuracy, reliability, currency, completeness or suitability for any particular purpose. It may be out of date, inaccurate or misleading or conflict with current laws, policies or practices. DAFWA has not reviewed or revised the information before making the document available from its research library website. Before using the information, you should carefully evaluate its accuracy, currency, completeness and relevance for your purposes. We recommend you also search for more recent information on DAFWA's research library website, DAFWA's main website (<https://www.agric.wa.gov.au>) and other appropriate websites and sources.

Information in, or referred to in, documents on DAFWA's research library website is not tailored to the circumstances of individual farms, people or businesses, and does not constitute legal, business, scientific, agricultural or farm management advice. We recommend before making any significant decisions, you obtain advice from appropriate professionals who have taken into account your individual circumstances and objectives.

The Chief Executive Officer of the Department of Agriculture and Food and the State of Western Australia and their employees and agents (collectively and individually referred to below as DAFWA) accept no liability whatsoever, by reason of negligence or otherwise, arising from any use or release of information in, or referred to in, this document, or any error, inaccuracy or omission in the information.

Phosphorus nutrition

M.D.A. Bolland
M.J. Baker
C.H. Phillips

SUMMARY OF RESULTS FOR 1985 SEASON

P NUTRITION COMPILED BY M.D. BOLLAND
M.J. BAKER
C. PHILLIPS

TRIALS REPORTED ON

85 NA 34
85 NA 35
85 NO 63
85 BA 34
85 BA 36
85 BA 37
76 WH 9
84 E 31
84 M 63
84 NO 69
77 MT 2
78 BA 7
65 A 1
69 WH 15

TRIAL NO.: 85 NA 35
LOCATION: Quartermaines Highbury
SOIL TYPE: Mallet soil
VEGETATION: Brown mallet
HISTORY: Topdressed with 200 kg/ha superphosphate NO. 1 mix (super containing Cu, Zn and Mo)

SEASONAL NOTES: Cultivated by farmer
28/5/85 Topdressed P rates
Topdressed basal Potash-Gypsum-TE at 260 kg/ha
Jacup wheat sown at 45 kg/ha
Schooner barley sown at 50 kg/ha
West oats sown at 55 kg/ha
Yandee lupins sown at 105 kg/ha
Derrimut peas sown at 100 kg/ha
Agran 34.0 topdressed at 200 kg/ha
27/8/85 Plant cuts from cereals for D.M. yields
10/9/85 Plant cuts from legumes for D.M. yields
27/11/85 Harvest Index cuts from all cereals
9/12/85 Trial harvested

SPECIES: Wheat

TMT No.	Kg P/ha	TDM t/ha 27/8/85	TDM t/ha 27/11/85	Hand harvest grain t/ha 27/11/85	Harvest index	Grain yield t/ha 9/12/85
1	0	0.7	3.6	1.3	0.35	0.6
2	8	1.0	4.5	1.4	0.32	0.7
3	13	1.1	4.7	1.5	0.32	0.9
4	20	1.0	4.2	1.3	0.32	0.9
5	26	1.6	5.7	1.9	0.33	1.2
6	87	1.8	6.7	2.2	0.33	1.5
7	174	1.8	6.8	2.5	0.36	1.7
8	433	1.1	5.8	2.2	0.38	1.5

COMMENTS: Evidence of P toxicity at highest level of applied P.

85 NA 35

1985 RESULTS MEAN OF 3 REPS

SPECIES:

Oats

TMT No.	Kg P/ha	TDM	TDM	Hand	Harvest	Grain yield
		t/ha	t/ha	harvest		
		27/8/85	27/11/85	grain	index	t/ha
				t/ha		9/12/85
				27/11/85		
1	0	1.3	4.4	1.6	0.38	0.8
2	8	1.9	5.2	2.0	0.38	1.1
3	13	1.6	4.8	1.9	0.38	1.0
4	20	2.2	5.1	2.0	0.39	1.3
5	26	1.9	6.3	2.4	0.38	1.4
6	87	2.0	6.1	2.4	0.39	1.4
7	174	2.4	6.1	2.1	0.35	1.6
8	433	2.9	7.3	2.6	0.36	1.8

SPECIES:

Barley

TMT No.	Kg P/ha	TDM t/ha 27/8/85	TDM t/ha 27/11/85	Hand harvest grain t/ha 27/11/85	Harvest index	Grain yield t/ha 9/12/85
1	0	0.6	2.8	1.0	0.37	0.5
2	8	0.6	3.2	1.2	0.36	0.9
3	13	1.2	4.0	1.5	0.38	0.9
4	20	1.0	3.7	1.3	0.34	0.8
5	26	1.3	4.4	1.6	0.36	1.2
6	87	1.8	4.8	1.9	0.40	1.7
7	174	2.0	5.8	2.2	0.38	1.9
8	433	2.7	5.9	2.3	0.39	2.2

TDM t/ha 27/8/85

TMT	Kg P/ha	Lupins	Peas
1	0	0.2	2.0
2	8	0.4	1.9
3	13	0.5	1.9
4	20	0.4	2.8
5	26	0.6	4.6
6	87	0.9	3.5
7	174	0.8	4.8
8	433	1.6	4.8

COMMENTS:

Gully erosion and non wetting soil contributed to poor establishment of legumes.

TRIAL NO.: 85 NA 34
LOCATION: Wheatleys North Bannister
SOIL TYPE: Lateritic-gravel sand
VEGETATION: Marri Jarrah Powderbark
HISTORY: New land

SEASONAL NOTES: 17/5/85 Cultivated by farmer
21/5/85 Topdressed P treatments
Basal Potash-Gypsum-TE at 250 kg/ha
Jacup wheat sown at 45 kg/ha
Schooner barley sown at 50 kg/ha
West oats sown at 55 kg/ha
Yandee lupin sown at 105 kg/ha
19/6/85 Topdressed 155 kg/ha of Agran 340 across all
cereals
1/7/85 Topdressed all lupin plots with Agran 34.0 at 240
kg/ha
20/8/85 Oats cut for D.M. yield
2/9/85 Barley and lupins cut for D.M. yields
16/9/85 Wheat cut for D.M. yields
25/11/85 Harvest Index cuts from oats and barley
12/12/85 Harvest Index cuts from wheat
Trial harvested

85 NA 34

1985 RESULTS MEAN OF 3 REPS

SPECIES:

Lupins

TMT No.	Kg P/ha	TDM t/ha 2/9/85	TDM t/ha	Hand harvest grain t/ha	Harvest index	Grain yield t/ha 12/12/85
1	0	0.04				
2	7	0.3				
3	12	0.1				
4	18	0.2				
5	24	0.3				
6	55	0.7				0.1
7	160	1.0				0.6
8	433	1.3				1.3

COMMENTS:

Poor establishment due to late start to season and late planting.

1985 RESULTS MEAN OF 3 REPS

SPECIES: Wheat

TMT No.	Kg P/ha	TDM t/ha 16/9/85	TDM t/ha 12/12/85	Hand harvest grain t/ha 12/12/85	Harvest index	Grain yield t/ha
1	0	0.7	0.2	0.06	0.32	0.03
2	7	1.6	1.7	0.3	0.20	0.3
3	12	1.2	1.4	0.3	0.22	0.1
4	18	2.4	2.3	0.5	0.24	0.4
5	24	2.2	2.6	0.6	0.23	0.4
6	55	2.8	3.8	0.8	0.22	0.7
7	160	2.8	3.8	1.1	0.29	0.9
8	433	3.3	4.2	1.3	0.31	1.2

COMMENTS: Heavily grazed by kangaroos.

1985 RESULTS MEAN OF 3 REPS

SPECIES: Oats

TMT No.	Kg P/ha	TDM t/ha 20/8/85	TDM t/ha 25/11/85	Hand harvest grain t/ha 25/11/85	Harvest index	Grain yield t/ha 12/12/85
1	0	0.2	0.9	0.2	0.24	0.2
2	7	1.1	6.1	1.6	0.26	1.2
3	12	1.2	6.0	1.8	0.30	1.0
4	18	1.8	8.5	2.0	0.24	1.6
5	24	1.8	7.9	2.1	0.27	1.7
6	55	2.4	10.7	2.7	0.25	2.0
7	160	2.5	11.1	2.6	0.23	2.3
8	433	3.0	12.4	2.9	0.24	2.4

85 NA 34

1985 RESULTS MEAN OF 3 REPS

SPECIES:

Barley

TMT No.	Kg P/ha	TDM	TDM	Hand	Harvest	Grain yield
		t/ha	t/ha	harvest		
		2/9/85	25/11/85	grain	index	t/ha
				t/ha		12/12/85
1	0	0.2	0.1	0	0.00	0
2	7	1.1	2.8	0.8	0.29	0.5
3	12	0.9	2.0	0.7	0.30	0.3
4	18	1.4	3.5	0.9	0.26	1.0
5	24	1.4	3.3	1.0	0.30	1.0
6	55	1.8	5.2	1.9	0.36	1.5
7	160	2.2	5.5	1.7	0.31	1.5
8	433	2.4	5.8	1.9	0.33	1.8

TRIAL NO.: 85 NO 63
LOCATION: Dwyers Southern Brook Road Meckering
SOIL TYPE: Sand over lateritic gravel
HISTORY: Low P 9 ppm

SEASONAL NOTES: 14/6/85 Sprayed and cultivated by farmer
17/6/85 Topdressed P treatments
Sowed Mortlock oats at 70 kg/ha
Stirling barley at 70 kg/ha
Eradu wheat at 50 kg/ha
Drilled Agran 34.0 with seed at 75 kg/ha
Topdressed basal Potash-Gypsum-TE across all plots at 175
kg/ha
12/7/85 Sprayed wheat and barley with Hoegrass at 1.25
l/ha
Sprayed oats with Glean 20 gms/ha
24/7/85 Sprayed wheat and barley with Brominil M at 1.4
l/ha
3/9/85 Plant cuts for D.M. yield
12/11/85 Harvest Index cuts
13/12/85 Trial harvested

85 NO 63

1985 RESULTS MEAN OF 3 REPS

SPECIES:

Barley

TMT No.	Kg P/ha	TDM t/ha 3/9/85	TDM t/ha 12/11/85	Hand harvest grain t/ha 12/11/85	Harvest index	Grain yield t/ha 13/12/85
1	0	1.3	4.6	2.1	0.46	1.7
2	6	1.2	3.8	1.8	0.47	1.9
3	13	1.4	4.5	2.2	0.49	1.9
4	19	1.4	4.7	2.2	0.48	2.0
5	25	1.4	4.6	2.2	0.47	1.8
6	40	1.5	4.4	2.1	0.48	2.1
7	146	1.7	4.7	2.3	0.48	2.2
8	433	1.4	5.8	2.8	0.48	2.3

SPECIES: Oats

TMT No.	Kg P/ha	TDM	TDM	Hand	Harvest	Grain yield
		t/ha	t/ha	harvest		
		3/9/85	12/11/85	grain	index	t/ha
				t/ha		13/12/85
1	0	1.0	3.7	1.6	0.42	1.3
2	6	1.2	4.1	1.9	0.46	1.9
3	13	1.2	4.2	1.7	0.40	1.6
4	19	1.3	4.0	1.6	0.38	1.7
5	25	1.2	4.7	1.8	0.38	1.8
6	40	1.4	4.0	1.7	0.43	1.8
7	146	1.5	5.5	2.2	0.41	2.3
8	433	1.5	5.3	2.1	0.40	2.1

85 NO 63

1985 RESULTS MEAN OF 3 REPS

SPECIES:

Wheat

TMT No.	Kg P/ha	TDM t/ha 3/9/85	TDM t/ha 12/11/85	Hand harvest grain t/ha 12/11/85	Harvest index	Grain yield t/ha
1	0	1.2	4.7	2.0	0.43	1.9
2	6	1.1	5.2	2.2	0.42	1.8
3	13	1.5	5.3	2.2	0.42	1.9
4	19	1.3	4.5	2.0	0.44	1.8
5	25	1.4	4.5	1.9	0.44	1.8
6	40	1.6	4.9	2.2	0.46	1.9
7	146	1.5	5.4	2.3	0.43	2.1
8	433	1.5	5.5	2.5	0.45	2.0

TRIAL NO.: 85 BA 35
LOCATION: Badgingarra Research Station (New block)
SOIL TYPE: Deep yellow sand
VEGETATION: Block butt and native pear
HISTORY: New land

SEASONAL NOTES: 7/5/85 Topdressed P treatments
Seeded trial with Chittick lupin at 100 kg/ha
Applied basal Potash-Gypsum-TE with seed at 205
kg/ha
14/8/85 Plant establishment counts and plant cuts for
D.M. yields
20/11/85 Harvest Index cuts
20/12/85 Trial harvested

SPECIES: Barley

TMT	Kg P/ha as SP	Establishment	TDM	TDM	Hand	Harvest	Grain
		counts plants/m ²	t/ha	t/ha	harvested grain yield t/ha	index	yields t/ha
		14/8/85	14/8/85	20/11/85	20/11/85		20/12/85
1	0	0	0	0.2	0.03	0.13	0
2	10	80	0.4	2.2	0.7	0.30	0.1
3	31	90	0.5	2.5	0.8	0.33	1.0
4	91	78	0.5	3.2	1.6	0.49	2.0
5	273	76	0.4	3.5	1.4	0.39	1.5
6	546	55	0.2	4.1	1.5	0.37	1.1

COMMENTS: Higher rates of applied P caused toxicity and thus reduction in yields.

TRIAL NO.: 85 BA 34
LOCATION: Badgingarra Research Station (New block)
SOIL TYPE: Deep yellow sand
VEGETATION: Black butt and native pear
HISTORY: New land

SEASONAL NOTES: 7/5/85 Topdressed P treatments
Topdressed Seaton Park at 100 kg/ha and covered
with trailing harrows
Basal Potash-Gypsum-TE mix applied with seed at
205 kg/ha
14/8/85 Topdressed basal Potash/Gypsum at 240 kg/ha
18/9/85 Rated trial for D.M. yields.

TMT	Kg P/ha as SP	Total dry matter yield kg/ha 18/9/85 mean of ratings of M. Baker and C. Phillips
1	0	212
2	10	1,100
3	31	1,820
4	91	1,980
5	182	2,000
6	455	1,350

COMMENTS: P toxicity at top rate.

TRIAL NO.: 85 BA 37
LOCATION: Badgingarra Research Station (New block)
SOIL TYPE: Deep yellow sand
VEGETATION: Black butt and native pear bush
HISTORY: New land

SEASONAL NOTES: 7/5/85 Topdressed phosphate sources and then rotary
hoed all treatments in to a depth of 10-20 cm
8/5/85 Seeded trial with Chittick lupins at 100 kg/ha
Applied basal Potash-Gypsum-TE with seed at 205
kg/ha
7/8/85 Plant establishment counts and cuts for D.M. yield
20/11/85 Harvest Index cuts

TMT	Source	Kg P/ha applied 1985	Establishment	TDM	TDM	Hand	Harvest
			counts plants/m ² 7/8/85	t/ha 7/8/85	t/ha 20/11/85	harvested grain yields t/ha 20/11/85	index
Nil	Nil	0	61	0.1	0.2	0.02	0.11
Nil	Nil	0	81	0.1	0.1	0.02	0.13
Nil	Nil	0	71	0.1	0.1	0.01	0.10
2	SP	20	69	0.3	2.1	1.0	0.44
3	SP	40	68	0.4	4.3	1.6	0.38
4	SP	60	79	0.4	3.5	1.3	0.38
5	SP	80	46	0.1	2.0	0.7	0.35
6	NCRP (med)	100	66	0.5	4.1	1.6	0.39
7	NCRP (med)	300	65	0.4	4.0	1.5	0.37
8	NCRP (med)	900	86	0.6	4.3	1.7	0.40
9	NCRP (med)	2,700	74	0.4	6.0	2.0	0.33
10	NCRP (gran)	100	56	0.2	1.8	0.6	0.35
11	NCRP (gran)	300	76	0.4	4.3	1.6	0.38
12	NCRP (gran)	900	78	0.4	5.1	1.9	0.36
13	NCRP (gran)	2,700	91	0.4	5.8	2.1	0.36
14	NCRP	100	61	0.4	4.7	1.8	0.39
15	FINES	200	62	0.4	3.8	1.0	0.27
16	FINES	400	105	0.5	5.0	2.0	0.39
17	FINES	800	67	0.3	4.3	1.4	0.33

SP = Superphosphate]
 NCRP = North Carolina Rock Phosphate]
 Gran = Granular NCRP] Analysis not yet available from
 Med = NCRP] Government Chemical Laboratories
 Fines = NCRP]

NEW LAND PHOSPHORUS SOURCES TRIAL

TRIAL NO.: 76 WH 9
LOCATION: Wongan Hills Research Station
SOIL TYPE: Wongany loamy sand
VEGETATION: Eucalyptus Pyriformis and scrub
HISTORY: New land when trial established. Pasture 1976, 1977, 1983
cropped 1978, 1979, 1981, 1982, 1984, 1985

SEASONAL NOTES: 14/5/85 Trial area burnt
30/5/85 Trial sprayed with Simazine
2 l/ha and Sprayseed 2 l/ha
31/5/85 Yandee lupin strip sown at 99 kg/ha
3/6/85 Trial sprayed with Sprayseed at 2 l/ha
4/6/86 Basal mix Potash/Gypsum and TE across trial area
at 228 kg/ha
10/6/85 Soil sampled and applied 1985 Super treatments in
Nil areas
20/6/85 Moore oats, Eradu wheat and O'Connor barley
strips all sown at 50 kg/ha
17/9/85 Lupin cut for D.M. yields
9/10/85 Wheat, oats and barley cut for D.M. yields
20/11/85 All species cut for Harvest Index

SPECIES: Oats

TMT	Source	Kg P/ha	Year applied	TDM t/ha 9/85	TDM t/ha 11/85	Grain yields t/ha 11/85	Harvest index
1	SP	80	1976	1.1	2.2	0.8	0.34
2	SP	160	1976	1.7	2.3	0.6	0.26
3	SP	320	1976	1.3	2.0	0.7	0.33
4	SP	400	1976	1.6	2.1	0.7	0.35
1	C5	85	1976	1.8	2.6	0.8	0.31
2	C5	256	1976	1.2	2.3	0.8	0.34
3	C5	427	1976	1.3	2.5	0.8	0.34
4	C5	599	1976	1.3	2.5	0.8	0.34
1	'C' ore	173	1976	1.2	2.0	0.6	0.30
2	'C' ore	288	1976	1.0	1.7	0.5	0.27
3	'C' ore	635	1976	1.0	1.9	0.7	0.36
4	'C' ore	865	1976	1.3	1.8	0.5	0.29
1	Nil	Nil		0.7	1.4	0.4	0.3
2	SP	25	1985				
3	SP	75	1985				
4	SP	100	1985				
5	SP	150	1985				

COMMENTS: Oats not sown on area treated with current P - no results.

SPECIES:

Wheat

TMT	Source	Kg P/ha	Year applied	TDM t/ha 9/85	TDM t/ha 11/85	Grain yields t/ha 11/85	Harvest index
1	SP	80	1976	0.8	1.6	0.7	0.41
2	SP	160	1976	1.4	2.3	1.0	0.43
3	SP	320	1976	1.8	1.9	0.8	0.42
4	SP	400	1976	1.5	2.0	0.9	0.43
1	C5	85	1976	1.3	2.2	1.0	0.44
2	C5	256	1976	1.5	2.5	1.1	0.44
3	C5	427	1976	1.4	2.7	1.2	0.45
4	C5	599	1976	1.2	1.9	0.8	0.45
1	'C' ore	173	1976	1.2	1.8	0.7	0.42
2	'C' ore	288	1976	1.2	1.8	0.8	0.45
3	'C' ore	635	1976	1.9	2.1	0.9	0.43
4	'C' ore	865	1976	1.2	1.6	0.7	0.45
1	Nil	Nil		0.8	1.3	0.5	0.39
2	SP	25	1985	0.9	1.4	0.6	0.43
3	SP	75	1985	1.7	2.1	1.0	0.46
4	SP	100	1985	1.4	2.7	1.2	0.44
5	SP	150	1985	1.9	2.9	1.4	0.47

SPECIES:

Lupins

TMT	Source	Kg P/ha	Year applied	TDM t/ha 9/85	TDM t/ha 11/85	Grain yields t/ha 11/85	Harvest index
1	SP	80	1976	1.3	1.6	0.4	0.27
2	SP	160	1976	4.5	5.2	1.8	0.34
3	SP	320	1976	5.1	5.7	2.0	0.36
4	SP	400	1976	4.4	6.1	2.1	0.34
1	C5	85	1976	4.2	4.4	1.5	0.35
2	C5	256	1976	5.2	6.6	2.3	0.34
3	C5	427	1976	5.1	5.9	2.1	0.36
4	C5	599	1976	5.6	7.1	2.4	0.34
1	'C' ore	173	1976	1.4	1.3	0.2	0.19
2	'C' ore	288	1976	3.2	3.9	1.0	0.27
3	'C' ore	635	1976	3.1	3.8	1.2	0.32
4	'C' ore	865	1976	3.6	3.4	0.9	0.26
1	Nil	Nil		0.4	0.2	0.08	0.34
2	SP	25	1985	2.6	4.5	1.2	0.27
3	SP	75	1985	4.8	7.3	2.5	0.34
4	SP	100	1985	4.8	6.5	2.3	0.35
5	SP	150	1985	5.3	7.0	2.3	0.33

SPECIES:

Barley

TMT	Source	Kg P/ha	Year applied	TDM t/ha 9/85	TDM t/ha 11/85	Grain yields t/ha 11/85	Harvest index
1	SP	80	1976	1.0	2.7	1.6	0.47
2	SP	160	1976	1.3	3.7	1.7	0.46
3	SP	320	1976	1.6	2.4	1.1	0.48
4	SP	400	1976	1.5	3.5	1.7	0.48
1	C5	85	1976	1.9	3.4	1.7	0.49
2	C5	256	1976	1.6	4.0	1.8	0.45
3	C5	427	1976	1.3	3.0	1.6	0.53
4	C5	599	1976	1.0	3.1	1.5	0.47
1	'C' ore	173	1976	1.5	2.7	1.1	0.43
2	'C' ore	288	1976	1.0	2.9	1.3	0.44
3	'C' ore	635	1976	1.1	3.6	1.7	0.48
4	'C' ore	865	1976	1.7	4.1	1.9	0.46
1	Nil	Nil		1.7	3.3	1.5	0.44
2	SP	25	1985	1.6	4.4	2.1	0.47
3	SP	75	1985	1.9	5.6	2.6	0.47
4	SP	100	1985	2.0	6.4	3.2	0.49
5	SP	150	1985	2.8	6.8	3.3	0.48

TRIAL NO.: 84 E 31
LOCATION: Esperance Downs Research Station
SOIL TYPE: Sandy gravel
VEGETATION: Blue mallee
HISTORY: New land when trial established in 1984

SEASONAL NOTES: 14/5/85 Soil sampled
21/6/85 Trial cultivated
24/7/85 Topdressed basal Agran 34.0 at 120 kg/ha,
Sulphate of Potash at 131 kg/ha. Sowed Forrest
barley at 50 kg/ha X strip of TSP across all
plots at 2,400 kg/ha
11/9/85 Plant cuts for D.M. yields
2/12/85 Harvest Index cuts
11/12/85 Trial harvested

TMT	Source	Kg P/ha applied	TDM t/ha	TDM t/ha	Hand	Harvest index	Grain yield t/ha	X strip 470 Kg P/ha Applied 1985		
					grain yield t/ha			TDM t/ha	HHG t/ha	Harvest index
		1984	11/9/85	2/12/85	2/12/85		11/12/85	2/12/85	2/12/85	
1	Nil	Nil	0.02	0.3	0.1	0.42	0.1	4.0	1.7	0.43
2	TSP(TD)	60	0.1	3.4	1.6	0.47	1.3	4.3	1.8	0.42
3	TSP(TD)	120	0.3	4.1	1.9	0.45	1.6	5.1	2.2	0.42
4	TSP(TD)	240	0.3	4.2	1.8	0.44	1.6	5.3	2.1	0.40
5	TSP(TD)	480	0.3	4.3	2.0	0.47	1.5	4.3	1.9	0.44
6	TSP(TD)	960	0.4	4.5	2.1	0.46	1.8	4.3	1.9	0.44
7	TSP(C)	60	0.1	3.3	1.6	0.48	1.1	4.3	1.8	0.43
8	TSP(C)	120	0.2	4.0	1.9	0.48	1.4	3.9	1.7	0.43
9	TSP(C)	240	0.3	3.5	1.7	0.48	1.4	3.6	1.7	0.47
10	TSP(C)	480	0.4	4.9	2.1	0.44	1.5	4.6	1.9	0.40
11	TSP(C)	960	0.4	4.6	2.0	0.42	1.6	5.1	2.1	0.40
12	NCRP(C)	315	0.2	3.3	1.6	0.47	1.1	4.4	1.9	0.43
13	NCRP(C)	608	0.2	3.8	1.8	0.48	1.2	4.8	2.0	0.42
14	NCRP(C)	1,215	0.2	3.7	1.8	0.47	1.4	5.0	2.1	0.42
15	NCRP(C)	2,430	0.2	3.2	1.5	0.48	1.0	4.6	1.9	0.42
16	NCRP(C)	4,360	0.2	2.8	1.4	0.51	1.2	4.5	1.8	0.40
17	QRP(C)	230	0.05	1.8	0.8	0.47	0.6	4.5	1.9	0.42
18	QRP(C)	460	0.2	3.6	1.7	0.48	1.4	4.2	1.9	0.44
19	QRP(C)	1,120	0.2	3.6	1.7	0.46	1.1	4.4	1.9	0.43
20	QRP(C)	2,300	0.3	4.1	1.9	0.46	1.4	4.3	1.8	0.41
21	QRP(C)	4,600	0.3	3.9	1.8	0.46	1.4	4.7	1.9	0.40

C = cultivated
TD = topdressed

TSP = triple superphosphate
NCRP = North Carolina rock phosphate
QRP = Queensland rock phosphate

TRIAL NO.: 84 M 63
LOCATION: South Bodallin (Merredin Research Station)
SOIL TYPE: Uniform yellow sandplain soil with some ironstone gravel
VEGETATION: Wodgil
HISTORY: New land when trial established in 1984

SEASONAL NOTES: 31/5/85 Cultivated and topdressed
Agran 34.0 at 127 kg/ha
1/6/85 Trial sown to Tyalla
Triticale at 60 kg/ha
Basal K₂ SO₄ at 126 kg/ha
28/8/85 Plant cuts for D.M. yields
4/12/85 Harvest Index cuts
Trial harvested

TMT	Source	Kg P/ha applied in 1984	TDM	TDM	Hand	Harvest index	Grain
			t/ha	t/ha	harvest grain yields t/ha		yields t/ha
			28/8/85	4/12/85	4/12/85	5/12/85	
1	Nil	Nil	0.1	0.3	0.0	0.0	0.0
2	TSP(TD)	60	0.4	2.2	0.4	0.20	0.5
3	TSP(TD)	120	1.8	5.2	1.6	0.27	1.4
4	TSP(TD)	240	1.9	5.4	1.7	0.31	1.6
5	TSP(TD)	480	2.2	5.9	2.0	0.36	2.1
6	TSP(TD)	960	3.3	6.5	2.3	0.32	2.1
7	TSP(C)	60	0.6	2.7	0.6	0.25	0.7
8	TSP(C)	120	1.7	5.2	1.6	0.26	1.4
9	TSP(C)	240	2.5	5.8	1.9	0.33	1.9
10	TSP(C)	480	2.5	6.9	2.4	0.30	2.1
11	TSP(C)	960	2.9	6.0	2.0	0.35	2.1
12	NCRP(C)	315	0.6	3.5	1.0	0.26	0.9
13	NCRP(C)	608	0.8	4.1	1.2	0.31	1.3
14	NCRP(C)	1,215	0.7	4.7	1.5	0.35	1.6
15	NCRP(C)	2,300	1.0	4.8	1.5	0.32	1.5
16	NCRP(C)	4,360	0.6	4.0	1.2	0.35	1.4
17	QRP(C)	230	0.2	1.4	0.3	0.22	0.3
18	QRP(C)	460	0.3	2.2	0.5	0.30	0.7
19	QRP(C)	1,150	0.8	3.9	1.1	0.29	1.2
20	QRP(C)	2,300	0.9	4.5	1.4	0.34	1.5
21	QRP(C)	4,600	1.7	5.4	1.7	0.30	1.6

C = cultivated
TD = topdressed

TSP = triple superphosphate
NCRP = North Carolina rock phosphate
QRP = Queensland rock phosphate

TRIAL NO.: 84 NO 69
LOCATION: D. Luptons West Dale
SOIL TYPE: Gravelly sandy loam (Yalanbee gravel type) 69% gravel
> 2 mm
VEGETATION: Powder bark and Wandoo
HISTORY: New land when trial established in 1984
SEASONAL NOTES: Trial in pasture
19/3/85 Topdressed basal
K₂SO₄ + Mn at 220 kg/ha
Topdressed maximum strip 2,550 kg of double
superphosphate
15/8 and 24/9 metered all plots for D.M. yields

		<u>Kg P/ha applied in 1985</u>					
		Nil plate metered	Nil (rated)	450 plate metered	Nil plate metered	450 plate metered	
TMT	Source	Kg P/ha applied in 1984	TDM t/hd 16/8/85	TDM t/ha 16/8/85	TDM t/ha 16/8/85	TDM t/ha 24/9/85	TDM t/ha 24/9/85
1	Nil	0	-	0.3	3.1	0	5.5
2	TSP(TD)	60	-	1.4	3.1	3.5	5.2
3	TSP(TD)	120	1.6	1.8	2.8	4.2	5.0
4	TSP(TD)	240	1.7	2.1	2.6	4.5	5.3
5	TSP(TD)	480	1.9	2.2	2.6	4.7	5.3
6	TSP(TD)	960	1.9	2.2	2.7	4.7	5.2
7	TSP(C)	60	-	1.2	3.0	4.5	5.1
8	TSP(C)	120	1.7	1.8	2.7	4.2	5.2
9	TSP(C)	240	2.2	2.5	2.8	4.9	5.1
10	TSP(C)	480	2.2	2.7	2.7	5.3	5.1
11	TSP(C)	960	2.5	2.8	3.0	4.3	5.3
12	NCRP(C)	300	-	1.2	3.2	3.6	5.4
13	NCRP(C)	600	1.0	1.6	3.1	4.0	5.3
14	NCRP(C)	1,200	1.6	2.0	3.0	4.7	5.3
15	NCRP(C)	2,400	2.2	2.6	2.8	5.0	5.3
16	NCRP(C)	4,444	2.2	2.7	2.8	5.0	5.5
17	QRP(C)	230	-	0.8	3.2	0	5.2
18	QRP(C)	460	-	1.5	3.3	3.3	5.1
19	QRP(C)	920	2.1	1.8	3.3	4.2	5.4
20	QRP(C)	1,840	2.2	2.5	3.1	5.1	5.4
21	QRP(C)	3,091	3.0	3.4	3.6	5.5	5.1
22	C5(C)	244	1.5	1.5	3.5	3.5	5.2
23	C5(C)	444	1.7	1.8	3.2	3.8	5.4
24	C5(C)	889	1.9	2.1	3.0	4.9	5.3
25	C5(C)	1,778	2.6	3.1	3.4	5.3	5.2
26	C5(C)	2,667	2.5	2.8	3.0	5.3	5.2
CS	Coastal super	60		1.7	2.2	4.3	4.9

TRIAL NO.: 77 MT 2
LOCATION: Mt Barker Research Station
SOIL TYPE: Loamy gravel
VEGETATION: Marri and Jarrah
HISTORY: Old land

SEASONAL NOTES: 15/10/85 Plate metered for D.M. yields

Kg P/ha : Applied in 1977, 1980, 1983		TDM t/ha 15/10/85	
1	SP	0	2.0
2	SP	9	2.0
3	SP	18	2.3
4	SP	32	2.8
5	SP	64	2.9
1	DSP	0	2.2
2	DSP	13	2.6
3	DSP	26	2.8
4	DSP	27	2.5
5	DSP	54	2.8
1	TSP	0	2.3
2	TSP	15	2.3
3	TSP	25	2.5
4	TSP	30	2.6
5	TSP	50	2.8
1	C5	0	2.2
2	C5	8	2.1
3	C5	16	2.9
4	C5	32	2.5
5	C5	64	3.2
1	C	0	2.0
2	C	7	2.1
3	C	14	2.0
4	C	29	2.1
5	C	58	2.2
1	QRP	0	2.3
2	QRP	9	1.9
3	QRP	18	2.6
4	QRP	30	2.5
5	QRP	60	2.4

TRIAL NO.: 78 BA 7
LOCATION: Badgingarra Research Station
SOIL TYPE: Gravelly sand - Type 1
HISTORY: No super since about 1974

SEASONAL NOTES: 10/4/85 Soil sampled
19/6/85 Topdressed annual rate
18/9/85 Plate metred for D.M. yields

Kg P/ha	Year applied	Pasture TDM t/ha 18/9/85
400	1978	1.6
400	1979	1.3
400	1980	1.1
400	1981	1.4
Nil	1982	1.3
50	1982	0.8
100	1982	1.2
200	1982	1.4
400	1982	2.0
400	1983	1.1
400	1984	2.4
400	1985	1.6
