

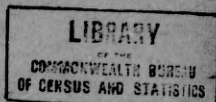
Commonwealth Bureau of Census and Statistics.

CANBERRA.

OFFICIAL STATISTICS, COMMONWEALTH OF AUSTRALIA.

MANUFACTURING INDUSTRIES,

1944-45.



No. 5. CHEMICAL FERTILIZERS.

PREPARED UNDER INSTRUCTIONS FROM THE
RIGHT HONORABLE THE TREASURER.

BY

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P R E F A C E

1. GENERAL: The publication of these surveys which cover 33 industries is being resumed following a period of suspension during the war. The previous issue respecting Chemical Fertilizers related to the year 1940-41. The following have already been issued:- Nos. 1. Cement, etc., 2. Bricks, etc., 4. Paints, etc., 6. Soap and Candles, 13. Stoves and Ovens, 14. Woollen Mills, 15. Hosiery, etc., 16. Tanneries, 30. Rubber Works.
2. CLASSIFICATION OF FACTORIES: The classification of factories in Australia is based on the nature of the product. Where two or more distinct types of industrial activity are carried on in one establishment, factory proprietors are requested to furnish separate returns for each activity. In some instances, however, this is not practicable, and in such cases there is no alternative but to classify the factory according to its predominant activity. This difficulty is most acute in the Metal Trades industries, (e.g. Engineering firms also producing Agricultural Implements, Stoves and Ovens, and/or Brass and Copper products), but it is also to be found in factories concerned with the treatment or manufacture of Skins, Leather, Clothing, Wood products and some other articles. In consequence, and to an extent which will vary with individual industries, the figures may include the subsidiary but extraneous activities of those establishments included in the industry, while they will exclude relevant activities which are subsidiary to the predominant activity of establishments classified to some other industry. This qualification is not important in the case of Chemical Fertilizers, the industry with which this summary is concerned.
3. BASIS OF THE STATISTICS: The scope of the factory statistics is fully explained in Part I of the annual Production Bulletin.

Briefly, a "factory" is taken to be an industrial establishment in which four or more hands are employed or in which power other than hand is used.

All persons employed in the manufacturing activities of the factory are counted as factory employees. The figures relating to employment, therefore, exclude all those engaged in selling and distribution, such as salesmen, travellers, collectors, carters engaged solely on outward delivery of manufactured goods, and retailing storemen. The figures do include, however, proprietors who work in their own factories as well as "outworkers".

The value of output is the wholesale selling value at the factory of goods made or processed during the year, including by-products. In addition, it includes the value of other work done, such as repair work, assembling and making up for customers.

The value of production is the value of output minus the cost of raw materials, containers, power, fuel, light, lubricants, water, tools replaced, and repairs to plant, and represents the value added in the process of manufacture within the factories. As full details of the costs of production are not collected the amount of profit resulting from operations cannot be ascertained. The value of production therefore is the source from which such items as wages, interest, depreciation, taxation, insurance, advertising and other sundry charges are met.

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COMMONWEALTH STATISTICIAN

CHEMICAL FERTILIZERS

2.

SUMMARY OF STATISTICS: The following table furnishes a summary of the principal statistics of the factories engaged in the manufacture of Chemical Fertilizers in Australia for the period 1934-35 to 1944-45:-

TABLE I. CHEMICAL FERTILIZERS : AUSTRALIA

Year	Number of Factories	Persons Employed (a)	Salaries and Wages Paid (b)	Power, Fuel, Light, Lubricants, and Water Used	Materials Used (c)	Value of Pro- duction	Value of Output
	No.	No.	£'000	£'000	£'000	£'000	£'000
1934-35	33	1,801	366	84	2,371	986	3,441
1935-36	33	1,996	442	88	2,727	1,091	3,906
1936-37	34	2,214	493	94	2,873	1,408	4,375
1937-38	32	2,474	600	109	3,239	1,556	4,904
1938-39	36	2,540	601	114	3,231	1,600	4,945
1939-40	36	2,392	604	108	3,123	1,421	4,652
1940-41	34	2,312	615	107	3,727	1,494	5,328
1941-42	35	2,136	640	115	3,822	1,283	5,220
1942-43	34	1,667	540	75	2,946	903	3,924
1943-44	36	1,818	632	87	3,659	1,121	4,867
1944-45	38	2,452	872	122	5,938	1,641	7,701

(a) Includes Working Proprietors. (b) Excludes amounts drawn by Working Proprietors.
(c) Includes also containers, packing etc., replacements of tools and repairs to plant.

In the following table particulars of the Industry are given for each State during the year 1944-45:-

TABLE II. CHEMICAL FERTILIZERS : STATES, 1944-45

Particulars	New South Wales	Victoria	Queens- land	South Aus- tralia	Western Aus- tralia	Tas- mania	AUSTRALIA
	No.	No.	No.	No.	No.	No.	No.
Number of Factories ..	6	8	6	6	6	6	38
Number Employed (a) -							
Males ..	260	953	85	531	514	36	2,379
Females ..	7	32	5	18	11	-	73
Total ..	267	985	90	549	525	36	2,452
	£.	£.	£.	£.	£.	£.	£.
Due of -							
Salaries and Wages							
Paid (b) ..	97,543	363,644	28,339	181,957	186,916	14,067	872,466
Power, Fuel and Light							
etc. used ..	11,236	41,631	1,160	29,066	38,017	1,105	122,215
Materials etc. used	778,192	2,141,612	228,591	1,075,823	1,514,381	199,474	5,938,073
Production ..	266,741	632,095	71,979	314,599	341,647	13,546	1,640,607
Output ..	1,056,169	2,815,338	301,730	1,419,488	1,894,045	214,125	7,700,895
Land and Buildings	117,388	465,051	67,451	252,310	526,256	40,187	1,468,653
Plant and Machinery	112,300	660,746	79,808	626,580	869,127	17,334	2,365,895
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
H.P. of Engines ordin- arily in use ..	2,333	6,655	1,290	5,402	3,692	277	19,649

(a) Includes Working Proprietors.
(b) Excludes amounts drawn by Working Proprietors.

CHEMICAL FERTILIZERS (Continued)

3.

2. AVERAGE SALARIES, OUTPUT AND PRODUCTION: Particulars of the average salary and wage paid to employees are shown in the following table together with the average values of output, production, etc. per person engaged for each of the years 1934-35 to 1944-45:-

TABLE III. AVERAGE SALARIES AND WAGES PAID, OUTPUT, ETC.
PER EMPLOYEE : AUSTRALIA.

Year	Salaries and Wages per Employee (a)	Value of Output per Person Engaged(b)	Value of Production per Person Engaged(b)	Ratio per cent. of Salaries and Wages to Value of Production
	£.	£.	£.	%
1934-35	214	1,911	547	39.17
1935-36	222	1,957	547	40.52
1936-37	223	1,976	636	35.03
1937-38	243	1,982	629	38.57
1938-39	237	1,947	630	37.59
1939-40	253	1,945	594	42.53
1940-41	266	2,304	646	41.19
1941-42	300	2,444	601	49.85
1942-43	325	2,354	542	59.80
1943-44	348	2,677	617	56.37
1944-45	356	3,141	669	53.18

(a) Excludes Working Proprietors and amounts drawn by them.

(b) Includes Working Proprietors.

3. MATERIALS USED AND ARTICLES PRODUCED: Particulars of the materials used and articles produced in the year 1944-45 are shown in the following table. The quantities and values shown here are those furnished by the establishments included in this Summary only. The figures do not include similar materials used or articles produced in establishments not classified as "Chemical Fertilizers".

TABLE IV. MATERIALS USED AND ARTICLES PRODUCED : AUSTRALIA, 1944-45.

Particulars	Unit of Quantity	Quantity	Value
Materials used -			£.
Meat Works Refuse, Offal, etc. ..	ton	9,310	58,186
Muriate of Potash ..	"	2,734	72,112
Sulphate of Potash ..	"	1,119	21,279
Phosphate Rock ..	"	500,936	3,505,830
Pyrites ..	"	102,398	249,523
Sulphate of Ammonia ..	"	10,443	175,314
Sulphur ..	"	36,573	451,816
Nitrate of Soda ..	"	4,479	89,286
Superphosphate - Own manufacture ..	"	35,343	(a)
Purchased ..	"	34,633	216,145
Sulphuric Acid - Own manufacture ..	"	231,537	(a)
Purchased ..	"	56,688	207,363
Other Materials ..	"	(b)	184,179
<u>Total Value of Materials Used:</u>		(b)	5,231,033
Articles produced -			
Ground Phosphate produced for sale ..	ton	(c)	(c)
Superphosphate - made for own use ..	"	35,343	(b)
made for sale ..	"	804,110	6,248,301
Sulphate of ammonia made for sale ..	"	(c)	(c)
Complete Manures ..	"	(d) 746,563	446,308
Super Mixtures ..	"	32,659	311,876
Sulphuric Acid - made for own use ..	"	232,258	(a)
made for sale ..	"	25,082	168,586
Other Acids ..	"	(c)	(c)
Sprays ..	"	(b)	4,200
Other Articles ..	"	(b)	521,624
<u>Total Value of Output:</u>		(b)	7,700,895

(a) Quantity only collected. (b) Quantities not available. (c) Not available for publication. Values included in Other Articles Produced. (d) Includes a small quantity of super mixture.

CHEMICAL FERTILIZERS (Continued)

4.

4. **EMPLOYMENT:** The number of persons employed shown in Tables I, II and VI has been adjusted to represent the average employment over the whole year in those cases where short time was worked. In the following table the factories have been classified for the years 1938-39 and 1941-42 to 1944-45 according to the average number employed during the actual period worked.

TABLE V. FACTORIES CLASSIFIED ACCORDING TO HANDS EMPLOYED : AUSTRALIA.

Number of Persons Employed in each Factory	1938-39		1941-42		1942-43		1943-44		1944-45	
	Number of Factories	Number of Em-ployed	Number of Factories	Number of Em-ployed	Number of Factories	Number of Em-ployed	Number of Factories	Number of Em-ployed	Number of Factories	Number of Em-ployed
Under 4	6	11	7	15	5	8	4	8	5	11
4	3	12	-	-	3	12	1	4	1	4
5 to 10	3	18	4	23	5	35	8	48	10	78
11 to 20	3	48	4	61	1	12	3	35	1	12
21 to 50	6	221	7	268	8	243	8	241	7	260
51 to 100	4	303	5	353	7	530	6	475	4	327
Over 100	11	1,935	8	1,428	5	833	6	1,017	10	1,769
TOTAL:	36	2,548	35	2,148	34	1,673	36	1,828	38	2,461
Average Number Employed per Factory:	71		61		49		51		65	

Further details of employment in Chemical Fertilizer Works are furnished in the next three tables. In the first, the males employed during the years 1938-39, and 1940-41 to 1944-45 have been classified according to the nature of their employment.

TABLE VI. MALES EMPLOYED CLASSIFIED ACCORDING TO GRADE OF OCCUPATION : AUSTRALIA.

Grade of Occupation	1938-39	1940-41	1941-42	1942-43	1943-44	1944-45
	No.	No.	No.	No.	No.	No.
Working Proprietors ..	2	1	4	4	1	4
Managers and Overseers ..	60	63	68	47	57	66
Clerical Staff ..	111	109	95	80	79	89
Engine Drivers and Firemen ..	27	35	35	22	20	38
Workers, Skilled and Unskilled ..	2,252	2,009	1,840	1,405	1,541	2,134
Other (Carters and Messengers) ..	59	59	47	57	52	48
Total Males:	2,511	2,276	2,089	1,615	1,750	2,379
Total Females:(a)	29	36	47	52	68	73
TOTAL ALL PERSONS:	2,540	2,312	2,136	1,667	1,818	2,452

(a) Mainly Clerical Staff.

The next table shows the actual number of persons employed (excluding Working Proprietors) on the pay-day nearest to the 15th of each month of the years 1943-44 and 1944-45:-

TABLE VII. PERSONS EMPLOYED ON PAY-DAY NEAREST TO THE 15TH OF EACH MONTH : AUSTRALIA.
(Working Proprietors excluded)

Month	1943-44			1944-45		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
July ..	1,547	66	1,613	1,943	68	2,011
August ..	1,553	67	2,620	1,970	67	2,037
September ..	1,569	66	1,635	1,987	66	2,053
October ..	1,584	68	1,652	2,042	69	2,111
November ..	1,571	72	1,643	2,184	72	2,256
December ..	1,650	73	1,723	2,367	73	2,440
January ..	1,715	66	1,781	2,497	73	2,570
February ..	1,828	61	1,889	2,623	75	2,698
March ..	1,910	65	1,975	2,697	75	2,772
April ..	1,999	66	2,065	2,751	77	2,828
May ..	2,041	72	2,113	2,774	77	2,851
June ..	1,971	64	2,035	2,656	75	2,731

CHEMICAL FERTILIZERS (Continued)

5.

A classification, according to age and sex of the number of employees on or about the 15th June, for the years 1939 to 1945, is shown in the next table:-

TABLE VIII. DISTRIBUTION OF EMPLOYEES ACCORDING TO AGE AND SEX : AUSTRALIA.

JUNE	MALES				FEMALES				PERSONS			
	Under 16 years	16 & under 21yrs.	Adults	Total	Under 16 years	16 & under 21yrs.	Adults	Total	Under 16 years	16 & under 21yrs.	Adults	Total
1939	24	201	2,136	2,361	-	9	22	31	24	210	2,158	2,392
1940	39	198	2,024	2,261	1	14	18	33	40	212	2,042	2,294
1941	35	272	2,047	2,354	1	13	25	39	36	285	2,072	2,393
1942	43	197	1,782	2,022	3	22	30	55	46	219	1,812	2,077
1943	33	158	1,433	1,624	2	20	36	58	35	178	1,469	1,682
1944	27	159	1,785	1,971	7	21	36	64	34	180	1,821	2,035
1945	30	194	2,432	2,656	2	30	43	75	32	224	2,475	2,731

5. **POWER EQUIPMENT:** Statistics of the power equipment of the factories included in this group are given in the next table. The details given for the years 1938-39, 1943-44 and 1944-45, include the rated horse-power of engines ordinarily in use, together with those in reserve or idle.

TABLE IX. TYPES AND RATED HORSEPOWER OF ENGINES : AUSTRALIA.

Class of Engine	Rated H.P. of Engines					
	Ordinarily in Use			In Reserve or Idle		
	1938-39	1943-44	1944-45	1938-39	1943-44	1944-45
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Steam - Reciprocating ..	422	602	602	340	150	550
Turbine ..	-	-	-	-	-	-
Internal Combustion -						
Gas ..	-	-	-	-	-	-
Petrol or Other Light Oils ..	30	5	5	-	-	-
Heavy Oils ..	1,881	1,784	2,301	566	607	590
Water ..	-	-	-	-	-	-
Total Prime Movers:	2,333	2,391	2,908	906	757	1,140
Motors driven by electricity -						
Purchased ..	15,832	16,996	16,741	4,775	2,544	2,593
Own Generation ..	2,786	2,582	3,008	579	1,047	971
Total Electricity:	18,618	19,578	19,749	5,354	3,591	3,564
TOTAL POWER USED: (a)	18,165	19,387	19,649	6,260	4,348	4,704

(a) Without Duplication.

6. **POWER, FUEL AND LIGHT:** Details of the quantities and values of the various items of power, fuel and light used in Chemical Fertilizer Works are shown for the years 1938-39, 1943-44 and 1944-45 in the following table:-

TABLE X. POWER, FUEL AND LIGHT, ETC. USED : AUSTRALIA.

Particulars	Unit of Quantity	Quantity			Value		
		1938-39	1943-44	1944-45	1938-39	1943-44	1944-45
Power, Fuel and Light -					£.	£.	£.
Coal - Black ..	ton	6,367	3,384	4,190	8,251	7,165	7,888
Brown ..	"	290	146	315	346	239	514
Coke ..	"	1,960	1,856	1,915	2,747	4,763	4,859
Wood ..	"	1,486	686	3,072	930	1,024	3,906
Fuel Oil ..	gal.	521,751	317,594	388,179	13,426	15,117	20,799
Electricity ..	-	(a)	(a)	(a)	69,708	44,892	63,708
Gas ..	-	(a)	(a)	(a)	797	1,037	552
Other (Charcoal, etc.) ..	-	(a)	(a)	(a)	5,070	1,595	3,217
Water and Lubricating Oil							
Used ..	-	(a)	(a)	(a)	12,474	11,044	16,772
TOTAL:		(a)	(a)	(a)	113,749	86,876	122,215

(a) Value only available.

CHEMICAL FERTILIZERS (Continued)

7. VALUE OF LAND, BUILDINGS, PLANT & MACHINERY: Particulars of the book values of premises and plant used for factory purposes at the 30th June for each of the seven years ended 1945 are shown in the next table. Details of the values of additions and replacements made and depreciation allowed during the same period are also shown.

It should be noted that the amounts shown are those recorded by factories which were operating during each year and that changes in their number, as well as other factors, affect comparison from year to year.

TABLE XI. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY : AUSTRALIA.

Year	Book Value as at 30th June (a)		Additions & Replacements made during year		Depreciation allowed during year	
	Land and Buildings	Plant and Machinery	Land and Buildings	Plant and Machinery	Land and Buildings	Plant and Machinery
	£.	£.	£.	£.	£.	£.
1938-39	1,449,157	2,352,819	46,770	214,983	99,699	187,922
1939-40	1,529,219	2,386,943	94,500	139,242	27,313	126,624
1940-41	1,513,639	2,352,793	30,235	108,826	46,627	140,516
1941-42	1,538,321	2,295,124	30,737	77,995	33,115	125,702
1942-43	1,464,411	2,176,426	14,628	75,324	27,903	101,962
1943-44	1,454,051	2,244,501	29,166	156,299	31,152	95,917
1944-45	1,468,653	2,365,895	34,425	99,245	27,363	121,645

(a) Includes estimated value of rented premises and machinery.

8. EXTERNAL TRADE: The next two tables furnish particulars of the quantities of imports and exports of Fertilizers for the years 1938-39 and 1940-41 to 1944-45:-

TABLE XII. IMPORTS OF FERTILIZERS : AUSTRALIA.

Item	1938-39	1940-41	1941-42	1942-43	1943-44	1944-45
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
Ammonium Sulphate ..	710,065	274,808	2,771	1,369	27	113,459
Guano ..	122,400	-	-	-	-	-
Potash Salts ..	223,202	121,531	62,887	45,889	66,590	90,547
Rock Phosphate ..	16,008,437	7,501,462	6,219,408	4,503,569	6,042,101	9,468,506
Soda Nitrate ..	203,666	390,155	86,539	64,972	735,954	327,426
Superphosphates ..	-	100,420	3	200	-	-
Other, including Bone Dust ..	3,151	774	579	1,205	5,526	4,942
TOTAL:	17,270,921	8,389,150	6,372,187	4,617,204	6,850,198	10,004,790

TABLE XIII. EXPORTS OF FERTILIZERS : AUSTRALIA.

Item	1938-39	1940-41	1941-42	1942-43	1943-44	1944-45
	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
Ammonium Sulphate ..	2,097	1,266	640	66	423	4,636
Bonedust ..	5,238	3,612	119	54	-	-
Blood and Bone including Tankage ..	(a)	2,086	8,834	11,732	4,601	1,228
Rock Phosphates ..	61	55	-	-	375	27
Soda Nitrate ..	22	72	12	640	100	84
Superphosphates ..	37,062	6,191	1,041	426	975	990
Other, including Guano	53,197	14,290	5,059	3,241	5,407	3,354
TOTAL:	97,677	27,572	15,705	16,159	11,881	10,319

(a) Not recorded separately.

9. MINIMUM WEEKLY RATES OF WAGE. The following table shows in respect of Chemical Fertilizer Works, the weekly minimum rates of wage and hours of labour in operation at 30th June, 1945. These have been prescribed by Commonwealth or State Industrial Tribunals. Where no rate is shown it indicates that the particular occupation is not specifically provided for in the award or determination. In all cases the hours of labour constituting a full week's work is 44.

TABLE XIV. MINIMUM WEEKLY RATES OF WAGE AS AT 30TH JUNE, 1945.

OCCUPATION	N.S.W.	VIC.	QLD.	S.A.	W.A.	TAS.
	(S)	(C)	(S)	(C)	(S)	(S)
	s. d	s. d	s. d	s. d	s. d	s. d
ROCK PHOSPHATE -			(a)			(b)
Trimmer, screener, crusher ..	116. 0	107. 0		102. 0	104. 5	
Barrowman, bagger ..	113. 0	108. 6		103. 6	104. 5	
Workman in tunnels ..	..	111. 6		106. 6	107. 5	
Millman at crusher ..	..	111. 6		106. 6	110. 5	
SUPERPHOSPHATE -						
Shed man ..	..	107. 0		102. 0	..	
Elevator feeder ..	108. 6	107. 0		102. 0	108. 5	
Den labourer ..	108. 6	107. 0		102. 0	108. 5	
Conveyor beltman ..	114. 6	107. 0		102. 0	113. 5	
Hand sewer ..	111. 6	107. 0		102. 0	104. 5	
Barrowman ..	..	108. 6		103. 6	113. 5	
Dryer ..	113. 0	108. 6		103. 6	..	
Mixer Assistant ..	..	108. 6		103. 6	107. 5	
Denman ..	114. 6	108. 6		103. 6	108. 5	
Bagger ..	113. 0	111. 6		106. 6	104. 5	
Weigher ..	..	111. 6		106. 6	..	
Machine sewer ..	111. 6	111. 6		106. 6	..	
Super heap man ..	107. 0	111. 6		106. 6	104. 5	
Screen cleaner ..	113. 0	111. 6		106. 6	104. 5	
Super tunnel man ..	..	111. 6		106. 6	111.11	
Green super trimmer ..	..	111. 6		106. 6	..	
Mixer ..	116. 0	111. 6		106. 6	113. 5	
Denman on excavator ..	..	111. 6		106. 6	108. 5	
Loader ..	111. 6	111. 6		106. 6	113. 5	
Stacker ..	111. 6	111. 6		106. 6	..	
Truck loader, single handed ..	..	120. 6		115. 6	..	
Wharf lumper ..	..	120. 6		115. 6	..	
MIXED MANURE -						
Handling mixed manures ..	107. 0	107. 0		102. 0	104. 5	
Handling animal manures, mixing, cleaning animal manure bags, working in bins ..	113. 0	108. 6		103. 6	107. 5	
Bagging and weighing ..	113. 0	111. 6		106. 6	104. 5	
Lumping animal manures ..	107. 0	114. 6		109. 6	..	
JUNIOR MALE -						
15 years ..	31. 9	34. 4	32. 6 to 37. 6	32. 7	35. 0	
16 years ..	39. 4	44. 1	40. 0 to 45. 0	41.10	45. 0	
17 years ..	46.10	53.11	53. 0 to 58. 0	51. 2	57. 5	
18 years ..	62. 9	63. 8	57. 0 to 62. 0	60. 5	69.11	
19 years ..	77. 6	73. 6	Adult Rates	69. 9	84.11	
20 years ..	94. 1	83. 4	Adult Rates	79. 1	Adult Rates	

(a) The Queensland Fertilizer Manufacturing (State) Award prescribes for all adults a minimum wage of 107/- in the Southern Division, Eastern District; 112/6 in Mackay Division and 117/- in Northern Division, Eastern District.

(b) A Determination of the Produce Wages Board prescribes a minimum wage of 108/- for Adult Storeman or Packer, plus threepence for each hour when engaged in mixing, sieving or re-bagging artificial or natural manure and sixpence for each hour when engaged in stacking artificial or natural manure.

(S) State Award. (O) Commonwealth Court Award.

ROLAND WILSON
COMMONWEALTH STATISTICIAN.