

Chapter Fifteen

Agriculture

Contents	Page
CHARACTERISTICS OF AUSTRALIAN FARMS	457
EMPLOYMENT IN AGRICULTURE	460
GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED	460
FINANCIAL STATISTICS OF FARM BUSINESSES	462
LAND USED FOR AGRICULTURE	463
CROPS	464
Cereal grains	465
Wheat	465
Oats	466
Barley	467
Grain sorghum	467
Maize	468
Rice	468
Vegetables	469
Fruit	470
Grapes	470
Selected other crops	472
Oilseeds	472
Cotton	472
Sugar	472
Fodder crops	473

Contents	Page
LIVESTOCK	474
Cattle	474
Sheep	475
Pigs	476
Poultry	476
MEAT PRODUCTION AND SLAUGHTERINGS	477
WOOL	478
Wool production	478
Wool receivals	479
Wool marketing arrangements	479
DAIRYING	479
Production	480
Domestic market	480
BEEKEEPING	481
APPARENT CONSUMPTION OF FOODSTUFFS	481
AGRICULTURAL IMPROVEMENTS	482
Irrigation	482
Fertilisers	483
BIBLIOGRAPHY	483

The major source of the statistics in this chapter is the Agricultural Census conducted by the ABS at 31 March each year.

The ABS excludes from the Census those establishments which make only a small contribution to overall agricultural activity. From 1986–87 to 1990–91, the Census included establishments with agricultural activity which had an estimated value of agricultural operations of \$20,000 or more. Prior to this (1982–83 to 1985–86) the cut-off value was \$2,500. The cut-off was raised to \$22,500 for the 1991–92 Census.

While this alteration has resulted in some changes in the counts of numbers of establishments engaged in agricultural activities, the effect on the statistics of production of major commodities is small. Statistics of minor commodities normally associated with small-scale operations may be affected to a greater extent.

Unless indicated otherwise, Australian totals include data for all States and both Territories.

Details of the method used in the calculation of the estimated value of agricultural operations (EVAO) are contained in the publication *Characteristics of Australian Farms* (7102.0).

Financial statistics are collected in the Agricultural Finance Survey, conducted annually since 1986–87.

CHARACTERISTICS OF AUSTRALIAN FARMS

Tables 15.1 and 15.2 provide information on the number, size and type of agricultural establishments at 31 March 1991.

15.1 ESTIMATED VALUE OF AGRICULTURAL OPERATIONS OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY
YEAR ENDING 31 MARCH 1991

ASIC code	Industry of establishment (a)	Estimated value of agricultural operations (\$'000)(b)											Total establishments
		<20	20-29	30-39	40-49	50-59	60-74	75-99	100-149	150-199	200-499	>499	
0124	Poultry for meat	12	6	11	15	16	26	83	151	115	167	77	679
0125	Poultry for eggs	17	12	13	5	8	20	29	58	47	222	186	617
0134	Grapes	82	208	289	270	305	498	616	642	294	251	59	3,514
0135	Plantation fruit	118	145	138	140	123	126	156	205	121	175	74	1,521
0136	Orchard and other fruit	406	371	389	385	315	433	534	679	424	750	275	4,961
0143	Potatoes	9	20	37	38	46	71	126	190	155	446	181	1,319
0144	Vegetables (except potatoes)	163	195	198	188	185	227	287	418	267	741	445	3,314
0181	Cereal grains (incl. oilseeds n.e.c.)	190	234	285	296	292	408	664	1,109	768	1,843	776	6,865
0182	Sheep — cereal grains	68	233	388	523	616	1,013	1,982	3,912	3,012	6,477	1,336	19,560
0183	Meat cattle — cereal grains	85	139	176	165	168	212	282	439	261	564	169	2,660
0184	Sheep — meat cattle	255	481	616	551	590	770	1,087	1,583	980	1,855	476	9,244
0185	Sheep	716	1,142	1,345	1,382	1,327	1,802	2,800	4,255	2,863	5,553	1,113	24,298
0186	Meat cattle	2,561	2,727	2,668	1,919	1,393	1,576	1,707	1,776	949	1,665	568	19,509
0187	Milk cattle	84	179	298	408	561	1,126	2,435	4,302	2,225	2,099	137	13,854
0188	Pigs	41	57	71	70	82	94	153	275	205	442	208	1,698
0191	Sugar cane	27	65	114	176	233	446	879	1,269	720	958	109	4,996
0192	Peanuts	—	—	5	14	14	29	24	39	29	196	9	475
0193	Tobacco	—	2	2	5	9	21	31	127	116	156	6	669
0194	Cotton	2	—	3	3	2	—	8	15	20	200	416	675
0195	Nurseries	328	162	153	131	126	123	461	227	177	265	136	2,289
0196	Agriculture n.e.c.	272	439	376	265	231	229	244	199	129	195	62	2,641
	Total (ASIC code 01)	5,436	6,823	7,575	6,949	6,642	9,250	14,588	21,870	13,877	25,051	6,818	124,879
02	Services to agriculture	10	8	8	4	5	8	11	5	2	5	1	67
03	Forestry and logging	4	1	2	4	—	1	2	3	—	1	1	19
04	Fishing and hunting	1	1	2	—	—	1	3	1	—	—	—	10
	Total (ASIC division A)	5,451	6,833	7,587	6,957	6,647	9,260	14,604	21,879	13,880	25,057	6,820	124,975
B	Mining	1	9	15	—	—	—	3	2	—	—	—	7
C	Manufacturing	7	—	—	10	6	12	10	20	2	22	19	132
D	Electricity, gas and water	—	—	—	—	—	1	—	—	—	1	—	2
E	Construction	8	15	14	11	5	7	5	6	4	8	1	84
F	Wholesale and retail trade	13	16	15	7	12	7	10	8	4	6	4	102
G	Transport and storage	16	27	23	14	15	10	8	10	6	5	1	135
H	Communication	—	—	—	—	—	—	—	—	—	—	—	—
I	Finance, property and business services	6	6	6	—	2	—	—	—	—	1	1	23
J	Public administration and defence	—	—	1	—	—	1	—	1	—	—	—	3
K	Community services	4	3	7	10	1	9	11	13	15	39	14	126
L	Recreation, personal and other services	8	2	2	2	2	1	—	2	3	3	1	26
	Total	5,514	6,911	7,671	7,011	6,690	9,308	14,651	21,942	13,914	25,142	6,861	125,615

(a) As set out in the Australian Standard Industrial Classification (ASIC) (1201.0 and 1202.0). (b) Determined by valuing the principal crop and livestock information collected in the Agricultural

(a) As set out in the Australian Standard Industrial Classification (ASIC) (1201.0 and 1202.0). (b) Determined by valuing the principal crop and livestock information collected in the Agricultural Census.

Source: Characteristics of Australian Farms (7102.0).

15.2 ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY, 31 MARCH 1991

ASIC code	Industry of establishment(a)		NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
	Description										
0124	Poultry for meat	345	120	91	63	51	9	—	—	—	679
0125	Poultry for eggs	174	130	133	55	100	16	7	—	2	617
0134	Grapes	562	1,521	50	1,240	123	15	3	—	—	3,514
0135	Plantation fruit	699	—	710	—	107	—	5	—	—	1,521
0136	Orchard and other fruit	1,493	935	865	1,076	391	189	11	1	—	4,961
0143	Potatoes	140	468	208	133	149	221	—	—	—	1,319
0144	Vegetables (except potatoes)	537	582	1,124	416	391	243	19	2	—	3,314
0181	Cereal grains (incl. oilseeds n.e.c)	1,441	1,045	1,840	1,582	939	13	5	—	—	6,865
0182	Sheep — cereal grains	6,174	3,624	351	4,470	4,895	46	—	—	—	19,560
0183	Meat cattle — cereal grains	876	117	1,564	78	15	2	8	—	—	2,660
0184	Sheep — meat cattle	4,404	2,150	720	891	646	413	—	20	—	9,244
0185	Sheep	8,596	8,113	1,429	2,212	3,088	825	—	35	—	24,298
0186	Meat cattle	5,945	4,350	6,927	471	1,078	538	186	14	—	19,509
0187	Milk cattle	2,064	7,769	1,901	863	493	761	2	1	—	13,854
0188	Pigs	485	232	538	268	132	42	1	—	—	1,698
0191	Sugar cane	392	—	4,604	—	—	—	—	—	—	4,996
0192	Peanuts	1	—	194	—	1	—	—	—	—	196
0193	Tobacco	17	174	284	—	—	—	—	—	—	475
0194	Cotton	362	—	307	—	—	—	—	—	—	669
0195	Nurseries	960	313	571	195	183	54	11	2	—	2,289
0196	Agriculture n.e.c	856	616	593	264	206	99	7	—	—	2,641
Total (ASIC code 01)		36,523	32,259	25,004	14,277	12,988	3,486	265	77	—	124,879
02	Services to agriculture	4	12	16	12	20	3	—	—	—	67
03	Forestry and logging	1	1	7	—	2	8	—	—	—	19
04	Fishing and hunting	—	—	1	2	3	4	—	—	—	10
Total (ASIC Division A)		36,528	32,272	25,028	14,291	13,013	3,501	265	77	—	124,975
B	Mining	1	2	1	1	2	—	—	—	—	7
C	Manufacturing	16	29	6	36	37	6	1	1	—	132
D	Electricity, gas and water	—	2	—	—	—	—	—	—	—	2
E	Construction	13	33	14	10	9	5	—	—	—	84
F	Wholesale and retail trade	17	27	14	13	10	20	1	—	—	102
G	Transport and storage	30	38	13	21	15	18	—	—	—	135
H	Communication	—	—	—	—	—	—	—	—	—	—
I	Finance, property and business services	8	1	4	6	3	—	1	—	—	23
J	Public administration and defence	2	—	—	1	—	—	—	—	—	3
K	Community services	27	3	46	11	28	10	—	1	—	126
L	Recreation, personal and other services	9	8	3	2	4	—	—	—	—	26
Total all industries		36,651	32,415	25,129	14,392	13,121	3,560	268	79	—	125,615

(a) As set out in the Australian Standard Industrial Classification (ASIC) (1201.0 and 1202.0).

Source: Characteristics of Australian Farms (7102.0).

EMPLOYMENT IN AGRICULTURE

15.3 EMPLOYED PERSONS(a) IN AGRICULTURE AND SERVICES TO AGRICULTURE (^{'000})

<i>August</i>	<i>Males</i>	<i>Married females</i>	<i>All females</i>	<i>Persons</i>
1987	271.6	90.1	103.1	374.7
1988	284.0	97.5	118.7	402.7
1989	269.0	93.3	111.1	380.1
1990	282.9	99.4	116.8	399.7
1991	267.0	94.3	115.2	382.2
1992	260.5	91.9	113.6	374.1

(a) The estimates of employed persons include persons who worked without pay for at least 1 hour per week in a family business or on a farm (that is, unpaid family helpers).

Source: *The Labour Force, Australia* (6203.0).

GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED

production at the wholesale prices realised in the market place.

The gross value of agricultural commodities produced is the value placed on recorded

15.4 GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED (\$ million)

<i>Commodity</i>	<i>1986-87</i>	<i>1987-88</i>	<i>1988-89</i>	<i>1989-90</i>	<i>1990-91</i>	<i>1991-92p</i>
Crops						
Barley for grain	423.0	454.9	558.1	708.8	568.3	641.2
Oats for grain	160.5	191.0	232.6	178.0	147.3	177.9
Wheat for grain	2,379.4	2,002.8	2,950.3	2,775.1	1,988.1	1,948.5
Other cereal grains	316.4	392.5	411.0	360.7	304.8	430.9
Sugar cane cut for crushing	580.2	608.9	744.2	874.0	748.0	602.0
Fruit and nuts	785.9	832.1	951.6	1,022.1	1,059.6	1,258.0
Grapes	251.5	345.6	427.3	392.2	362.0	410.4
Vegetables	868.2	928.4	1,165.3	1,328.2	1,284.2	1,300.0
All other crops(a)	1,614.3	1,882.4	2,202.9	2,237.2	2,611.6	2,845.7
<i>Total crops</i>	<i>7,379.4</i>	<i>7,638.6</i>	<i>9,643.3</i>	<i>9,876.3</i>	<i>9,073.9</i>	<i>9,614.6</i>
Livestock slaughtering and other disposals(b)						
Cattle and calves(c)	2,824.7	3,047.9	3,189.6	3,860.5	3,869.4	3,658.8
Sheep and lambs	721.2	803.9	738.3	585.4	373.3	462.0
Pigs	(d)468.5	(d)536.1	629.3	656.0	691.0	638.5
Poultry	(d)601.7	(d)671.2	730.3	777.9	788.3	787.0
<i>Total livestock slaughtering and other disposals(e)</i>	<i>(d)4,624.6</i>	<i>(d)5,074.3</i>	<i>5,302.3</i>	<i>5,893.3</i>	<i>(e)5,730.0</i>	<i>(e)5,586.0</i>

For footnotes see end of table.

15.4 GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED — continued
(*\$ million*)

<i>Commodity</i>	<i>1986-87</i>	<i>1987-88</i>	<i>1988-89</i>	<i>1989-90</i>	<i>1990-91</i>	<i>1991-92^p</i>
Livestock products						
Wool	3,333.6	5,517.3	5,906.0	5,718.1	4,180.9	2,979.4
Milk	1,257.4	1,390.9	1,635.1	1,749.0	1,824.8	1,971.3
Eggs	291.6	304.4	321.4	311.8	322.5	278.6
<i>Total livestock products(f)</i>	<i>(g)4,915.6</i>	<i>(h)7,247.0</i>	<i>(i)7,910.8</i>	<i>(j)7,806.7</i>	<i>(j)6,355.7</i>	<i>(j)5,260.1</i>
Total value of agricultural commodities produced	(j)16,927.8	(j)19,962.5	(k)22,862.5	(k)23,585.1	(k)21,168.2	(k)20,474.9

(a) Includes pastures and grasses. Excludes crops for green feed or silage. (b) Includes net exports of livestock. (c) Includes dairy cattle slaughtered. (d) Excludes Northern Territory pigs and poultry. (e) Includes goat slaughtering, exports and buffalo slaughtering. (f) Includes honey and beeswax. (g) Excludes Northern Territory and Australian Capital Territory milk and eggs. (h) Includes cashmere, cashgora, mohair, liquid goat milk, honey and beeswax. Excludes Northern Territory and Australian Capital Territory milk and eggs. (i) Excludes Northern Territory milk and eggs. (j) Includes Northern Territory pigs, poultry, milk and eggs. (k) Includes Northern Territory pigs, poultry, milk and eggs and Australian Capital Territory milk and eggs.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)*.

The following table shows the index of the gross value of commodities produced at constant prices, that is, it is a measure of change in value after the direct effects of price changes have been eliminated.

15.5 INDEX OF VALUES AT CONSTANT PRICES OF AGRICULTURAL COMMODITIES PRODUCED(a)
(Reference base year 1984-85 = 1,000)

<i>Commodity</i>	<i>1986-87</i>	<i>1987-88</i>	<i>1988-89</i>	<i>1989-90</i>	<i>1990-91</i>
Crops					
Barley for grain	645	625	596	728	740
Oats for grain	1,171	1,276	1,325	1,164	1,086
Wheat for grain	880	652	750	759	802
Other cereal grains	924	1,066	899	815	698
Sugar cane(b)	967	978	1,036	1,049	987
Fruit and nuts	1,099	1,148	1,121	1,122	1,074
Grapes	936	921	1,002	912	951
Vegetables	1,046	1,171	1,197	1,132	1,117
All other crops(c)	1,053	1,134	1,133	1,107	1,168
<i>Total crops</i>	<i>932</i>	<i>873</i>	<i>910</i>	<i>908</i>	<i>926</i>
Livestock slaughtering and other disposals					
Cattle and calves(d)	1,138	1,202	1,139	1,280	1,343
Sheep and lambs	1,106	1,073	1,007	1,004	971
Pigs	1,086	1,141	1,184	1,218	1,198
Poultry	1,100	1,161	1,178	1,231	1,245
<i>Total livestock slaughtering(e)</i>	<i>1,122</i>	<i>1,170</i>	<i>1,129</i>	<i>1,224</i>	<i>1,256</i>
Livestock products					
Wool	1,070	1,109	1,154	1,328	1,284
Milk	1,019	1,015	1,038	1,033	1,056
Eggs	1,022	1,051	1,010	999	1,022
<i>Total livestock products(f)</i>	<i>1,052</i>	<i>1,078</i>	<i>1,110</i>	<i>1,219</i>	<i>1,198</i>
Total agricultural commodities produced	1,008	997	1,013	1,062	1,074

(a) Indexes of values at constant prices (weighted by average unit values of the year 1984-85). (b) Sugar cane cut for crushing and planting. (c) Includes pasture and grasses. Excludes crops for green feed or silage. (d) Includes dairy cattle slaughtered. (e) Component series based on carcass weight. Includes goat slaughtering. (f) Includes honey, beeswax and goat products.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)*.

FINANCIAL STATISTICS OF FARM BUSINESSES

Estimates of selected financial aggregates of enterprises predominantly engaged in agricultural activity are shown in the following tables. The estimates have been derived from the Agricultural Finance Survey (AFS), which was conducted on an irregular basis until

1986-87 when it became an annual survey. From 1986-87 the population for the AFS consisted of all farm businesses classified to an industry class within Subdivision 01 'Agriculture' of the Australian Standard Industrial Classification and with an estimated value of agricultural operations of \$20,000 or more. This was increased to \$22,500 in 1991-92.

15.6 ESTIMATES OF SELECTED FINANCIAL AGGREGATES OF AGRICULTURAL ENTERPRISES(a), 1987-88 TO 1991-92 (\$ million)

	1987-88	1988-89	1989-90	1990-91	1991-92p
Sales from crops	6,507.7	6,991.2	7,795.2	7,196.7	7,550.1
Sales from livestock	5,052.1	5,399.3	5,519.1	4,864.5	4,874.1
Sales from livestock products	6,024.1	6,715.7	7,157.9	5,853.6	4,734.3
Turnover	18,708.0	20,272.3	21,823.5	19,190.6	18,371.8
Purchases and selected expenses	9,852.5	10,672.6	11,447.8	10,892.5	10,590.3
Value added(b)	10,239.0	11,690.3	10,237.4	7,347.7	7,881.8
Adjusted value added(b)	9,160.6	10,500.3	8,924.4	6,023.1	6,585.7
Gross operating surplus(b)	7,563.1	8,643.3	6,897.0	4,133.6	4,778.1
Interest paid	1,473.6	1,681.1	2,227.5	2,066.0	1,811.0
Cash operating surplus(c)	4,999.9	5,227.3	5,330.6	3,412.8	3,104.1
Total net capital expenditure	1,566.1	1,849.1	1,906.3	1,216.6	1,445.6
Gross indebtedness	11,425.6	12,948.0	14,518.0	14,140.6	14,965.4

(a) Statistics for 1991-92 are not strictly comparable with previous periods (see paragraph above). (b) Includes an estimate for the value of the increase in livestock. (c) Excludes an estimate for the value of the increase in livestock.

Source: *Agricultural Industries, Financial Statistics, Australia (7507.0)* and *Agricultural Industries, Financial Statistics, Australia, 1991-92, Preliminary (7508.0)*.

15.7 ESTIMATES OF SELECTED FINANCIAL AGGREGATES OF AGRICULTURAL ENTERPRISES, 1991-92p (\$ million)

	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(a)
Sales from crops	1,941.8	1,083.0	1,913.3	1,009.1	1,296.2	149.1	7,550.1
Sales from livestock	1,357.9	778.7	1,458.5	356.1	337.6	111.1	4,874.1
Sales from livestock products	1,437.1	1,364.5	583.0	400.2	723.2	157.9	4,734.3
Turnover	5,034.6	3,457.7	4,328.9	1,885.1	2,479.3	457.3	18,371.8
Purchases and selected expenses	2,921.0	1,875.9	2,534.7	1,057.0	1,554.2	263.0	10,590.3
Value added(b)	2,045.0	1,624.0	1,671.8	894.2	1,138.9	194.1	7,881.8
Adjusted value added(b)	1,653.5	1,377.5	1,395.9	763.6	959.7	163.3	6,585.7
Gross operating surplus(b)	1,108.8	1,034.6	935.5	636.6	779.8	107.9	4,778.1
Interest paid	610.9	305.1	412.8	154.7	220.0	50.7	1,811.0
Cash operating surplus(c)	633.2	713.4	720.6	454.6	367.0	62.3	3,104.1
Total net capital expenditure	431.0	237.3	322.0	176.5	201.0	28.0	1,445.6
Gross indebtedness	4,799.6	2,337.9	3,752.1	1,313.7	1,900.6	442.5	14,965.4

(a) Includes Northern Territory and estimates for multi-State enterprises. (b) Includes an estimate for the value of the increase in livestock. (c) Excludes an estimate for the value of the increase in livestock.

Source: *Agricultural Industries, Financial Statistics, Australia, 1991-92, Preliminary (7508.0)*.

LAND USED FOR AGRICULTURE

The total area of agricultural establishments in 1991-92 constituted 59.7 per cent of the Australian land area, the remainder being urban areas, State forests, mining leases and national parks etc., with an overwhelming proportion of unoccupied land (mainly desert).

The balance data include large areas of arid or rugged land held under grazing licences but not always used for grazing. Balance data also include variable amounts of fallow land.

The area cropped represents up to 3.8 per cent of the area of agricultural establishments.

15.8 AREA OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY (million hectares)

<i>At 31 March</i>	<i>NSW</i>	<i>Vic.</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas.</i>	<i>NT</i>	<i>Aust. (incl. ACT)</i>
1987	60.8	13.1	151.7	59.5	112.7	1.9	71.2	471.0
1988	61.5	13.1	152.5	60.0	113.5	1.9	69.6	472.0
1989	61.6	13.1	151.3	58.0	112.6	1.9	68.3	466.9
1990	62.0	13.1	152.3	57.5	110.9	1.9	66.6	464.3
1991	60.7	12.7	150.8	57.0	110.9	1.9	68.8	462.8
1992	60.4	12.4	150.0	56.9	115.7	1.8	68.7	466.0

Source: *Summary of Crops, Australia (7330.0)*.

15.9 LAND UTILISATION (million hectares)

<i>Year</i>	<i>Area of</i>			<i>Area of establishments</i>	<i>Percentage of Australian land area (768,284,000 hectares)</i>
	<i>Crops(a)</i>	<i>Sown pastures and grasses</i>	<i>Balance(b)</i>		
1986-87	19.8	27.3	423.9	471.0	61.3
1987-88	18.4	28.6	425.0	472.0	61.4
1988-89	17.5	30.2	419.2	466.9	60.8
1989-90	17.0	30.9	416.4	464.3	60.4
1990-91	17.4	28.3	417.1	462.8	60.2
1991-92	16.4	30.8	418.8	466.0	60.7

(a) Excludes pastures and grasses harvested for hay and seed which have been included in 'sown pastures and grasses'. (b) Used for grazing, lying idle, fallow, etc.

Source: *Summary of Crops, Australia (7330.0)*.

CROPS

1870-71, and a summary of the area, production and gross value of the principal crops in Australia in recent years.

The following tables show the area of crops in the States and Territories of Australia since

15.10 AREA OF CROPS(a)
(⁰000 hectares)

<i>Year</i>	<i>NSW</i>	<i>Vic.</i>	<i>Qld</i>	<i>SA</i>	<i>WA</i>	<i>Tas.</i>	<i>NT</i>	<i>ACT</i>	<i>Aust.</i>
1870-71	156	280	21	235	22	64	—	—	868
1880-81	245	627	46	846	26	57	—	—	1,846
1890-91	345	822	91	847	28	64	—	—	2,197
1900-01	990	1,260	185	959	81	91	—	—	3,567
1910-11	1,370	1,599	270	1,112	346	116	—	—	4,813
1920-21	1,807	1,817	316	1,308	730	120	—	1	6,099
1930-31	2,756	2,718	463	2,196	1,939	108	1	2	10,184
1940-41	2,580	1,808	702	1,722	1,630	103	—	2	8,546
1949-50	2,295	1,881	832	1,518	1,780	114	—	4	8,424
1954-55	2,183	1,904	1,049	1,711	2,069	122	—	2	9,040
1959-60	2,888	1,949	1,184	1,780	2,628	130	1	3	10,564
1964-65	4,182	2,621	1,605	2,414	3,037	163	2	4	14,028
1969-70	4,999	2,212	2,208	2,290	3,912	98	6	2	15,728
1971-72	4,186	1,925	2,017	2,278	3,751	67	7	1	14,231
1972-73	4,329	1,943	1,963	2,122	3,814	80	12	1	14,265
1973-74	4,628	1,981	1,786	2,451	4,133	74	6	1	15,060
1974-75	4,089	1,772	1,898	2,257	3,754	67	7	1	13,845
1975-76	4,285	1,851	2,010	2,116	4,208	60	8	1	14,539
1976-77	4,520	1,943	2,026	2,036	4,417	65	2	1	15,010
1977-78	4,984	2,163	2,107	2,564	4,910	70	1	1	16,800
1978-79	5,020	2,209	2,307	2,827	4,993	80	2	1	17,438
1979-80	5,243	2,243	2,334	2,771	5,281	79	2	1	17,954
1980-81	5,208	2,180	2,481	2,772	5,547	84	1	1	18,273
1981-82	5,744	2,184	2,765	2,865	5,963	90	2	1	19,613
1982-83	5,200	2,234	2,648	2,856	6,380	98	3	1	19,420
1983-84	6,566	2,655	2,998	3,108	6,526	101	5	1	21,961
1984-85	5,789	2,569	3,047	2,902	6,723	99	6	1	21,136
1985-86	5,990	2,528	3,231	3,039	5,970	88	7	1	20,853
1986-87	5,325	2,317	3,036	3,066	5,930	78	12	—	19,764
1987-88	4,908	2,159	2,870	2,990	5,334	84	13	1	18,359
1988-89	4,560	1,990	2,842	2,961	5,082	82	11	1	17,527
1989-90	4,077	1,989	2,580	3,042	5,174	83	9	1	16,953
1990-91	4,073	2,063	2,872	2,933	5,359	75	6	—	17,382
1991-92	3,846	2,039	2,302	2,920	5,216	76	5	—	16,404

(a) The classification of crops was revised in 1971-72 and adjustments made to statistics back to 1967-68. After 1966-67 lucerne for green feed, hay and seed, and pasture cut for hay and harvested for seed or green feed are excluded.

NOTE: From 1970-71 to 1980-81 figures related to area 'used for' crops, that is, an area used for more than one purpose during the year was counted only once. From 1981-82, an area double cropped has been counted separately each time used.

Source: *Summary of Crops, Australia (7330.0)*.

15.11 SELECTED CROPS: AREA, PRODUCTION AND GROSS VALUE

	1989-90			1990-91			1991-92		
	Area (^{'000} ha)	Prod- uction (^{'000} tonnes)	Gross value (\$m)	Area (^{'000} ha)	Prod- uction (^{'000} tonnes)	Gross value (\$m)	Area (^{'000} ha)	Prod- uction (^{'000} tonnes)	Gross value (\$m)
Cereals for grain									
Barley	2,310	4,044	709	2,556	4,108	568	2,744	4,530	641
Grain sorghum	380	946	136	378	751	99	569	1,447	169
Maize	52	219	39	49	194	32	52	269	37
Oats	1,089	1,640	178	1,044	1,530	147	1,160	1,690	178
Rice	105	846	141	89	740	138	114	957	183
Wheat	9,004	14,214	2,775	9,218	15,066	1,988	7,183	10,557	1,948
Legumes for grain	1,294	1,362	295	1,388	1,363	286	1,762	1,899	424
Crops for hay									
Oats	206	720	79	252	(a)829	89	327	(a)1,155	n.a.
Wheat	57	159	17	19	52	4	30	64	n.a.
Crops for green feed, silage									
Barley	85	n.a.	n.a.	n.a.	n.a.	n.a.	757	n.a.	n.a.
Forage sorghum	147			154					
Oats	633			329					
Wheat	32			n.a.					
Sugar cane cut for crushing	322	26,940	874	325	24,370	748	329	20,640	602
Tobacco	5	12	73	5	13	78	5	11	75
Cotton	240	792	640	279	1,129	898	312	1,278	882
Peanuts (in shell)	18	18	18	18	27	30	21	39	27
Soybean	49	77	29	40	62	22	30	63	25
Rapeseed	50	78	24	73	98	n.a.	151	170	n.a.
Sunflower	66	73	25	166	152	42	79	84	29
Fruit (excl. grapes)	117	n.a.	1,022	113	n.a.	1,060	117	n.a.	1,258
Fruit									
Orchard	99	n.a.	754	95	n.a.	733	99	n.a.	n.a.
Oranges	n.a.	487	176	n.a.	(b)453	165	n.a.	(b)470	194
Apples	19	319	212	n.a.	289	183	n.a.	316	251
Pears	n.a.	164	79	n.a.	160	84	n.a.	180	113
Peaches	n.a.	58	51	n.a.	58	44	n.a.	62	45
Bananas	9	180	181	10	165	235	10	177	279
Pineapples	6	142	41	6	126	37	6	133	38
Grapes	59	824	392	60	851	362	61	986	410
Vegetables	126	n.a.	1,328	121	n.a.	1,284	117	n.a.	1,300
Potatoes	41	1,178	393	40	1,372	377	40	1,150	385
Total all crops (excluding pastures and grasses)	16,953	n.a.	9,381	17,382	n.a.	8,492	16,404	n.a.	8,995

(a) Includes all cereals not collected separately. (b) Excludes Queensland.

Source: *Summary of Crops, Australia (7330.0)*; *Value of Agricultural Commodities Produced, Australia (7503.0)*; *Value of Selected Agricultural Commodities Produced, Australia (7502.0)*; and *Viticulture, Australia (7310.0)*.

The characteristics of the main crops are outlined below.

Cereal grains

In Australia, cereals are conveniently divided into autumn-winter-spring growing ('winter' cereals) and spring-summer-autumn growing ('summer' cereals). Winter cereals such as wheat, oats, barley and rye are usually grown in rotation with some form of pasture such as grass, subterranean clover, medics or lucerne. In recent years, alternative winter crops such as rapeseed, field peas and lupins have been introduced to cereal rotation in areas where they had not previously been grown. Rice, maize and sorghum are summer cereals with

the latter being grown in association with winter cereals in some areas. In northern Queensland and Western Australia there are two rice growing seasons.

Wheat is Australia's most important crop. It is produced in all States but primarily on the mainland in a narrow crescent known as the wheat-belt. Inland of the Great Dividing Range, the wheat-belt stretches in a curve from central Queensland through New South Wales, Victoria and southern South Australia. In Western Australia, the wheat-belt continues around the south-west of the State and some way north up the western side of the continent.

15.12 WHEAT: AREA, PRODUCTION AND RECEIVALS

Season	Area(a)		Production(a)		Australian Wheat Board receivals (^{'000 tonnes})
	For grain (^{'000 ha})	All purposes (^{'000 ha})	Grain (^{'000 tonnes})	Gross value (\$m)	
1986-87	11,135	11,274	16,119	2,410.3	15,288
1987-88	9,005	9,141	12,287	2,015.7	10,740
1988-89	8,827	8,932	13,935	2,975.9	12,954
1989-90	9,004	9,093	14,214	2,792.0	13,057
1990-91	9,218	9,237	15,066	1,988.1	13,047
1991-92	7,183	7,213	10,557	1,942.2	6,769

(a) Area and production data relate to the year ending 31 March.

Source: *Summary of Crops, Australia (7330.0)*; *Value of Agricultural Commodities Produced, Australia (7503.0)*; and *Value of Selected Agricultural Commodities Produced, Australia (7502.0)*.

15.13 WHEAT FOR GRAIN: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA (^{'000 hectares})							
1986-87	3,099	1,364	795	1,616	4,260	2	11,135
1987-88	2,464	1,026	646	1,556	3,312	1	9,005
1988-89	2,309	931	768	1,520	3,297	1	8,827
1989-90	2,123	952	894	1,557	3,476	1	9,004
1990-91	2,166	911	1,060	1,448	3,632	1	9,218
1991-92	1,499	664	492	1,297	3,230	1	7,183
PRODUCTION (^{'000 tonnes})							
1986-87	4,855	2,795	833	2,255	5,377	5	16,119
1987-88	3,997	1,882	718	1,803	3,882	4	12,287
1988-89	4,105	1,691	1,550	1,361	5,225	2	13,935
1989-90	3,423	1,961	1,420	2,607	4,800	3	14,214
1990-91	4,128	1,493	1,973	2,021	5,449	2	15,066
1991-92	2,183	1,150	344	2,141	4,736	3	10,557

Source: *Summary of Crops, Australia (7330.0)*.

Oats are traditionally a cereal of moist temperate regions. However, improved varieties and management practices have enabled oats to be grown over a wide range of soil and climatic conditions. They have a high feed value and produce a greater bulk of growth than other winter cereals; they need less cultivation and respond well to superphosphate

and nitrogen. Oats have two main uses: as a grain crop, or as a fodder crop, (following sowing or fallow or rough sowing into stubble or clover pastures). Fodder crops can either be grazed and then harvested for grain after removal of livestock or else mown and baled or cut for chaff.

15.14 OATS FOR GRAIN: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA (^{'000 hectares})							
1986-87	482	215	20	113	302	8	1,140
1987-88	526	216	19	132	373	10	1,275
1988-89	548	189	18	156	389	10	1,309
1989-90	365	189	15	172	340	8	1,089
1990-91	374	177	24	135	324	9	1,044
1991-92	457	183	15	129	367	9	1,160

... continued

15.14 OATS FOR GRAIN: AREA AND PRODUCTION — *continued*

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
PRODUCTION ('000 tonnes)							
1986-87	635	356	19	149	414	11	1,584
1987-88	707	325	14	135	502	16	1,698
1988-89	780	276	15	131	618	18	1,838
1989-90	504	330	14	250	529	13	1,640
1990-91	538	301	27	148	497	19	1,530
1991-92	579	300	5	172	614	19	1,690

Source: *Summary of Crops, Australia (7330.0)*.

Barley. This cereal contains two main groups of varieties, 2-row and 6-row. The former is generally, but not exclusively, preferred for malting purposes. Barley is grown principally as a grain crop although in some areas it is used as a fodder crop for grazing, with grain being subsequently harvested if conditions are suitable. It is often

grown as a rotation crop with wheat, oats and pasture. When sown for fodder, sowing may take place either early or late in the season, as it has a short growing period. It may therefore provide grazing or fodder supplies when other sources are not available. Barley grain may be crushed to meal for stock or sold for malting.

15.15 BARLEY FOR GRAIN: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 hectares)							
1986-87	408	265	168	955	468	8	2,274
1987-88	465	366	169	876	461	8	2,346
1988-89	413	350	200	837	383	8	2,190
1989-90	413	389	179	900	421	8	2,310
1990-91	463	463	177	945	498	10	2,556
1991-92p	517	534	128	999	554	11	2,744
PRODUCTION ('000 tonnes)							
1986-87	614	444	276	1,592	601	21	3,548
1987-88	744	529	244	1,261	617	22	3,417
1988-89	712	545	374	1,036	552	22	3,242
1989-90	656	696	321	1,724	628	19	4,044
1990-91	822	651	361	1,506	742	26	4,108
1991-92	749	898	70	1,882	900	32	4,530

Source: *Summary of Crops, Australia (7330.0)*.

Grain sorghum. The sorghums are summer growing crops which are used in three ways: grain sorghum for grain; sweet or fodder sorghum, sudan grass and, more recently, columbus grass for silage, green feed and grazing; and broom millet for brooms and brushware.

Grain sorghum has been grown extensively only in the last two decades. Rapid increases in production have resulted in a substantial increase in exports over this period. The grain is used primarily as stockfeed and is an important source for supplementing other coarse grains for this purpose.

15.16 GRAIN SORGHUM FOR GRAIN: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 hectares)							
1986-87	188	—	625	—	—	—	818
1987-88	175	—	565	—	—	—	745
1988-89	152	—	468	—	—	—	625
1989-90	138	—	238	—	—	—	380
1990-91	84	—	291	(a)	1	(a)	378
1991-92	147	—	420	(a)	—	(a)	569
PRODUCTION ('000 tonnes)							
1986-87	392	1	1,019	—	1	—	1,419
1987-88	412	1	1,213	—	—	—	1,633
1988-89	301	1	934	—	1	—	1,244
1989-90	359	1	578	—	1	—	946
1990-91	187	1	558	(a)	2	(a)	751
1991-92	398	—	1,045	(a)	—	(a)	1,447

(a) Not collected.

Source: Summary of Crops, Australia (7330.0).

Maize. Like sorghum, maize is a summer cereal demanding specific soil and climatic conditions. Maize for grain is almost entirely confined to the south-east regions and the Atherton Tablelands of Queensland; and the north coast, northern slopes and tablelands and

the Murrumbidgee Irrigation Area in New South Wales. Small amounts are grown in all States, except South Australia, for green feed and silage, particularly in association with the dairy industry.

15.17 MAIZE FOR GRAIN: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 hectares)							
1986-87	16	1	38	—	1	—	58
1987-88	15	1	37	—	1	—	56
1988-89	14	—	36	—	1	—	52
1989-90	17	—	34	—	1	—	52
1990-91	18	—	29	(a)	1	(a)	49
1991-92	17	—	34	(a)	1	(a)	52
PRODUCTION ('000 tonnes)							
1986-87	77	3	118	1	6	—	206
1987-88	72	6	124	—	5	—	208
1988-89	78	1	132	—	4	—	217
1989-90	98	1	115	—	5	—	219
1990-91	91	2	95	(a)	5	(a)	194
1991-92	119	3	141	(a)	5	(a)	269

(a) Not collected.

Source: Summary of Crops, Australia (7330.0).

Rice. In Australia, rice was first grown commercially in 1924-25 in the Murrumbidgee Irrigation Area, one of three irrigation areas in southern New South Wales where rice is now produced. About 96 per cent of Australia's

rice is grown in New South Wales. The remainder is grown in the Burdekin River basin at Mareeba in northern Queensland and in the Adelaide River District in the Northern Territory.

15.18 RICE FOR GRAIN: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 hectares)							
1986-87	92	—	4	—	—	—	96
1987-88	102	—	4	—	—	—	106
1988-89	94	—	3	—	—	—	97
1989-90	100	—	5	—	—	—	105
1990-91	85	(a)	4	(a)	(a)	(a)	89
1991-92	109	(a)	4	(a)	(a)	(a)	114
PRODUCTION ('000 tonnes)							
1986-87	589	—	19	—	—	—	608
1987-88	721	—	19	—	—	—	740
1988-89	730	—	18	—	—	—	748
1989-90	816	—	30	—	—	—	846
1990-91	719	(a)	21	(a)	(a)	(a)	740
1991-92	929	(a)	28	(a)	(a)	(a)	957

(a) Not collected.

Source: *Summary of Crops, Australia (7330.0)*.

Vegetables

The area sown to vegetables reached a peak of over 200,000 hectares in 1945. It remained static at around 109,000 hectares from the mid-seventies to the mid-eighties but has been

increasing steadily since. Yields from most vegetable crops have increased due to variety breeding for increased yields, greater use of irrigation and better control of disease and insect pests.

15.19 SELECTED VEGETABLES FOR HUMAN CONSUMPTION: AREA UNDER PRODUCTION

Year	French and runner beans	Cabb- ages	Carrots	Cauli- flowers	Onions	Green peas	Potatoes	Tomatoes	Other	Total vege- tables
AREA ('000 hectares)										
1986-87	5.9	2.9	4.6	3.7	4.3	11.7	36.7	8.6	32.9	111.3
1987-88	6.0	2.8	4.6	3.4	5.0	11.2	39.8	8.9	35.0	116.7
1988-89	6.9	2.2	4.8	3.5	5.3	11.9	37.6	9.1	37.7	119.0
1989-90	7.3	2.3	4.8	3.7	5.1	13.3	40.6	9.6	39.1	125.8
1990-91	6.4	2.3	4.3	3.8	5.7	10.8	39.8	10.1	37.5	120.7
1991-92	6.8	2.3	4.7	3.6	5.4	8.9	39.8	9.0	37.0	117.5

Source: *Summary of Crops, Australia (7330.0)*.

15.20 PRODUCTION OF SELECTED VEGETABLES FOR HUMAN CONSUMPTION

	French and runner beans	Cabb- ages	Carrots	Cauli- flowers	Onions	Green peas		Potatoes	Tomatoes
						Process- ing (shelled weight)	Sold in pod (pod weight)		
PRODUCTION ('000 tonnes)									
1986-87	29.4	82.9	146.0	91.6	164.7	33.4	1.2	1,015.2	266.0
1987-88	32.7	80.1	144.0	112.2	181.7	43.0	1.2	1,081.5	282.6
1988-89	35.5	87.8	148.7	79.6	196.3	46.0	1.1	1,048.0	318.6
1989-90	38.4	77.8	154.9	88.6	192.5	49.8	1.0	1,178.0	322.1
1990-91	29.9	76.8	152.1	90.3	222.3	40.9	1.0	1,136.2	364.1
1991-92	32.5	78.6	158.3	78.3	220.5	37.2	0.5	1,150.1	330.5

Source: *Summary of Crops, Australia (7330.0)*.

Fruit

A wide variety of fruit is grown in Australia ranging from pineapples, mangoes and papaws in the tropics to pome, stone and berry fruits in the temperate regions.

In recent years there has been rapid expansion in the cultivation of many relatively new fruit crops in Australia and there is considerable scope for continued growth in the future.

15.21 SELECTED FRUIT STATISTICS

Year	Orchard fruit number of trees ('000)				Tropical and other fruits area (ha)			Total area of fruit (ha)
	Apples	Oranges	Pears(a)	Peaches	Bananas	Pineapples	Other fruit	
1986-87	6,350	6,897	1,552	1,797	9,391	3,762	1,245	107,492
1987-88	6,555	6,873	1,779	1,867	9,195	6,269	2,024	166,100
1988-89	6,810	7,122	2,028	2,004	9,319	6,660	1,239	119,756
1989-90	7,023	7,187	2,201	2,035	9,092	6,461	1,427	121,785
1990-91	6,919	7,357	2,205	2,104	9,578	5,927	1,941	113,225
1991-92	7,206	7,536	2,183	2,123	9,913	5,745	2,531	116,702

PRODUCTION ('000 tonnes)

	Apples	Apricots	Bananas	Cherries	Oranges	Peaches	Pears(a)	Pineapples	Plums and prunes
1986-87	325.0	27.0	157.7	4.0	504.0	61.1	145.0	142.3	22.0
1987-88	300.0	28.0	160.1	5.0	479.0	66.0	162.0	146.5	18.0
1988-89	323.0	27.9	195.8	4.0	399.2	51.9	142.1	154.4	19.9
1989-90	319.4	29.7	180.3	4.7	487.2	58.0	164.2	141.6	19.9
1990-91	288.7	25.2	165.1	5.4	453.3	57.9	159.6	126.0	19.6
1991-92	316.1	31.8	176.9	4.8	469.9	61.7	180.1	133.3	21.6

GROSS VALUE OF PRODUCTION (\$ million)

	Apples	Apricots	Bananas	Cherries	Oranges	Peaches	Pears(a)	Pineapples	Plums and prunes
1986-87	197.3	21.3	125.1	10.5	120.4	35.8	74.9	40.2	22.7
1987-88	183.1	30.4	118.8	14.2	143.9	44.9	77.0	34.0	21.8
1988-89	235.6	27.8	134.8	14.0	177.0	42.4	63.9	43.2	26.7
1989-90	211.6	28.0	181.3	17.4	175.9	50.9	79.3	40.7	24.3
1990-91	182.6	23.6	235.2	19.7	164.6	44.0	83.6	37.3	26.3
1991-92p	201.3	n.y.a.	n.y.a.	n.y.a.	n.y.a.	n.y.a.	n.y.a.	n.y.a.	n.y.a.

(a) Includes Nashi.

Source: *Summary of Crops, Australia (7330.0)*; *Value of Agricultural Commodities Produced, Australia (7503.0)*; and *Value of Selected Agricultural Commodities Produced, Australia (7502.0)*.

Grapes

Grapes are a temperate crop which require warm to hot summer conditions for ripening and predominantly winter rainfall. Freedom from late spring frosts is essential. They are grown for wine-making, drying and, to a lesser extent, for table use. Some of the better

known wine producing areas are the Barossa, Clare, Riverland, Southern Districts and Coonawarra (South Australia); north-eastern Victoria and Great Western (Victoria); Hunter and Riverina (New South Wales); Sunraysia (New South Wales and Victoria); Swan Valley and Margaret River (Western Australia).

15.22 VITICULTURAL STATISTICS: AREA, PRODUCTION AND VALUE

Year	Area		Production: grapes used for(a)			Total(b)
	Bearing (^{'000} ha)	Total (^{'000} ha)	Winemaking (^{'000} tonnes fresh weight)	Drying (^{'000} tonnes fresh weight)	Quantity (^{'000} tonnes fresh weight)	Gross value (\$m)
1986-87	54	57	477	262	783	251.5
1987-88	54	57	460	293	799	345.6
1988-89	54	57	563	248	859	427.3
1989-90	54	59	530	249	824	392.2
1990-91	54	60	487	317	851	362.0
1991-92	56	61	565	373	987	410.4

(a) Excludes Northern Territory and Australian Capital Territory. (b) Includes grapes used for table and other purposes.

Source: *Summary of Crops, Australia* (7330.0); *Value of Agricultural Commodities Produced, Australia* (7503.0); and *Value of Selected Agricultural Commodities Produced, Australia, Preliminary* (7502.0).

15.23 VITICULTURE: AREA AND PRODUCTION, BY VARIETY, 1992 SEASON(a)

Variety	Area of vines at harvest			Production of grapes used for			
	Bearing	Not yet bearing	All vines	Wine- making	Drying	Other	Total
	— hectares —			— tonnes (fresh weight) —			
Red grapes							
Cabernet							
Sauvignon	4,535	930	5,465	44,906	—	—	44,906
Current							
(incl. Carina)	1,155	58	1,213	123	20,236	—	20,359
Grenache	1,992	26	2,018	29,834	—	29	29,862
Mataro	610	13	622	10,031	—	—	10,031
Pinot Noir	1,078	178	1,256	10,625	—	—	10,625
Shiraz	5,088	674	5,762	56,476	—	—	56,476
Other red grapes	3,902	728	4,631	23,397	617	15,046	39,060
Total red grapes	18,360	2,607	20,967	175,392	20,853	15,075	211,319
White grapes							
Chardonnay	4,459	735	5,194	48,748	—	—	48,748
Doradillo	717	1	718	17,539	—	13	17,552
Muscat Gordo							
Blanco	3,460	37	3,497	78,295	10,485	422	89,202
Palomino and							
Pedro Ximenes	927	1	928	14,929	—	—	14,929
Rhine Riesling	3,571	108	3,679	39,125	—	—	39,125
Semillon	2,649	217	2,867	36,947	—	—	36,947
Sultana	15,194	460	15,654	54,788	335,365	25,280	415,433
Waltham Cross	790	2	793	3,143	6,023	2,610	11,776
Other white grapes	6,167	443	6,609	94,751	209	6,306	101,266
Total white grapes	37,934	2,004	39,939	388,265	352,082	34,631	774,978
Total grapes	56,295	4,611	60,906	563,657	372,935	49,706	986,298

(a) Excludes Northern Territory and the Australian Capital Territory where varietal data is not collected.

Source: *Viticulture, Australia* (7310.0).

Selected other crops

Oilseeds. The oilseeds industry is a relatively young industry by Australian agricultural standards. The specialist oilseed crops grown in Australia are sunflower, soybeans, rapeseed, safflower and linseed. Sunflower and soybeans are summer grown

while the others are winter crops. In Australia, oilseeds are crushed for their oil, which is used for both edible and industrial purposes and protein meals for livestock feeds.

Oilseed crops are grown in all States but the largest producing regions are the grain growing areas of the eastern States.

15.24 OILSEEDS: AREA AND PRODUCTION

Season	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
AREA ('000 hectares)							
1986-87	150	39	145	9	6	—	349
1987-88	109	50	175	10	4	—	348
1988-89	103	46	189	8	3	—	349
1989-90	84	39	69	7	1	—	200
1990-91	134	23	135	7	2	—	302
1991-92	155	47	71	15	17	—	305
PRODUCTION ('000 tonnes)							
1986-87	157	40	116	12	3	—	329
1987-88	116	48	201	12	4	—	381
1988-89	138	46	195	11	3	—	394
1989-90	119	38	84	7	2	—	251
1990-91	169	21	124	9	2	—	325
1991-92	191	44	78	19	16	—	348

Source: *Summary of Crops, Australia* (7330.0).

Cotton is grown primarily for its fibre (lint). When the cotton is matured, seed cotton is taken to a gin where it is separated (ginned) into lint, seed and thrash. Lint is used for yarn while seed is further processed at an oil mill. There the short fibres (linters) remaining on the seed after ginning are removed. They

are too short to make into cloth but are used for wadding, upholstery and paper. The seeds are then separated into kernels and hulls. Hulls are used for stock feed and as fertiliser, while kernels are crushed to extract oil. The remaining cake is ground into meal which is protein roughage used as stock feed.

15.25 COTTON: AREA, PRODUCTION AND EXPORTS

Year	Seed cotton(a)			Raw cotton export			
	Area (^{'000} ha)	Quantity (^{'000} tonnes)	Gross value (\$m)	Cotton- seed(b) (^{'000} tonnes)	Lint(b) (^{'000} tonnes)	Quantity (^{'000} tonnes)	Value f.o.b. (\$m)
1986-87	156	612	372.1	418	214	251	344.7
1987-88	245	762	421.6	435	281	176	353.0
1988-89	194	769	536.9	449	286	286	461.0
1989-90	240	792	639.5	493	305	291	539.0
1990-91	279	1,129	898.0	686	433	314	689.0
1991-92	315	1,278	n.y.a.	749	499	398	943.0

(a) Before ginning. (b) Estimated by the Australian Bureau of Agricultural and Resource Economics.

Source: *Summary of Crops, Australia* (7330.0) and *Value of Agricultural Commodities Produced, Australia* (7503.0).

Sugar cane is grown commercially in Australia along the east coast over a distance of some 2,100 kilometres in a number of

discontinuous areas from Maclean in northern New South Wales to Mossman in Queensland. The geographical spread contributes to the

overall reliability of the sugar cane crop and to Australia's record as a reliable sugar supplier.

Approximately 95 per cent of production occurs in Queensland, with some 75 per cent

of the crop grown north of the Tropic of Capricorn in areas where rainfall is reliable and the warm, moist and sunny conditions are ideal for the growing of sugar cane. Farm sizes generally range between 20 and 70 hectares.

15.26 SUGAR CANE: AREA, PRODUCTION AND YIELD

Year	New South Wales						Queensland			
	Sugar cane cut for crushing			Raw sugar(a)			Sugar cane cut for crushing			Raw sugar(a)
	Area har- vested	Produc- tion	Yield	Yield	Area har- vested	Produc- tion	Yield	Yield	Area har- vested	Produc- tion
	('000 ha)	(tonnes)	('000 t/ha)	Quantity (tonnes)	('000 ha)	(tonnes)	('000 t/ha)	Quantity (tonnes)	('000 ha)	(tonnes)
1986-87	14	1,276	93.2	168	7.0	287	23,466	81.8	3,202	11.2
1987-88	16	1,632	60.4	195	7.2	291	23,200	64.4	3,483	9.7
1988-89	15	1,560	104.0	196	13.1	302	25,586	85.9	3,483	11.5
1989-90	15	1,388	92.5	179	11.9	307	25,552	83.2	3,618	11.8
1990-91	14	1,137	81.2	180	12.9	311	23,232	74.7	2,931	9.4
1991-92	15	1,416	94.4	240	16.0	314	19,225	61.2	4,016	12.8

(a) In terms of 94 net titre.

Source: *Summary of Crops, Australia (7330.0)*.

Fodder crops. Considerable areas of Australia are devoted to fodder crops which are utilised either for grazing (as green feed), or harvested and conserved as hay, ensilage, etc.

This development of fodder conservation as a means of supplementing pasture and natural sources of stockfeed is the result of the seasonal and comparatively unreliable nature of rainfall in Australian agricultural areas.

15.27 FODDER CROPS: AREA AND PRODUCTION

Year	Hay(a)			Green feed or silage(b)	
	Area (<i>'000</i> ha)	Production		Area (<i>'000</i> ha)	Silage made (<i>'000</i> tonnes)
		Quantity (<i>'000</i> tonnes)	Gross value (\$m)		
1986-87	306	942	72.9	1,190	679
1987-88	344	1,003	85.8	1,313	878
1988-89	323	1080	106.8	1,152	825
1989-90	297	964	104.0	1,054	723
1990-91	336	1,068	112.3	786	574
1991-92	450	1,489	123.1	756	n.y.a.

(a) Principally oaten and wheaten hay. (b) Principally from oats, barley, wheat and forage sorghum.

Source: *Summary of Crops, Australia (7330.0)*.

15.28 FARM STOCKS OF CEREAL GRAINS, HAY AND SILAGE (’000 tonnes)

At 31 March	Cereal grains				
	Barley	Oats	Wheat	Hay	Silage
1987	729	1,406	1,045	5,783	817
1988	693	1,366	962	4,972	757
1989	702	1,550	1,028	5,550	975
1990	655	1,610	954	5,687	991
1991	697	1,420	1,213	5,332	1,018
1992	868	1,378	1,035	5,394	1,014

Source: *Summary of Crops, Australia* (7330.0).

LIVESTOCK

The numbers of each of the principal kinds of livestock in Australia at ten-yearly intervals from 1861 to 1971, and yearly from 1981, are given in the following table.

The years in which the numbers of livestock attained their peaks are as follows: cattle, 1976 (33,434,000); sheep, 1970 (180,080,000); and pigs, 1973 (3,259,000).

15.29 LIVESTOCK (’000)

Year	Cattle	Sheep	Pigs	Year	Cattle	Sheep	Pigs
1861	3,958	20,135	351	1981	25,168	134,407	2,430
1871	4,276	41,594	543	1982	24,553	137,976	2,373
1881	7,527	62,184	816	1983	22,478	133,237	2,490
1891	10,300	97,881	891	1984	22,161	139,242	2,527
1901	8,640	70,603	950	1985	22,784	149,747	2,512
1911	11,745	98,066	1,026	1986	21,820	146,776	2,512
1921	13,500	81,796	674	1987	21,915	149,157	2,611
1931	11,721	110,568	1,072	1988	21,851	152,443	2,706
1941	13,256	122,694	1,797	1989	22,434	161,603	2,671
1951	15,229	115,596	1,134	1990	23,191	170,297	2,648
1961	17,332	152,579	1,615	1991	23,662	163,238	2,531
1971	24,373	177,792	2,590	1992	23,880	148,203	2,792

Source: *Livestock and Livestock Products, Australia* (7221.0).

Cattle

Cattle-raising is carried out in all States, the main object in certain districts being the production of stock suitable for slaughtering purposes and in others the raising of dairy herds. While dairy cattle are restricted mainly to southern and to coastal districts, beef cattle are more concentrated in Queensland and New South Wales. Cattle numbers in Australia increased slowly during the 1960s and 1970s, despite

seasonal changes and heavy slaughterings, to a peak of 33.4 million in 1976. Beef cattle production is often combined with cropping, dairying and sheep. In the northern half of Australia, cattle properties and herd sizes are very large, pastures are generally unimproved, fodder crops are rare and beef is usually the only product. The industry is more intensive in the south because of the more favourable environment including more improved pasture.

15.30 CATTLE BY AGE, SEX AND PURPOSE (*000)

Classification	31 March					
	1987	1988	1989	1990	1991	1992
Milk cattle						
Bulls used or intended for service	37	36	36	33	31	31
Cows, heifers and heifer calves	2,561	2,506	2,476	2,461	2,399	2,379
House cows and heifers	41	38	34	28	(a)	(a)
Total	2,639	2,581	2,546	2,523	2,430	2,432
Meat cattle						
Bulls used or intended for service	513	528	551	582	538	521
Cows and heifers (1 year and over)	9,795	9,818	10,120	10,577	10,687	10,748
Calves under 1 year	4,738	4,716	4,816	5,107	5,208	5,128
Other cattle (1 year and over)	4,230	4,207	4,402	4,401	4,799	5,050
Total	19,276	19,270	19,888	20,668	21,232	21,447
Total all cattle	21,915	21,851	22,434	23,191	23,662	23,880

(a) Not collected.

Source: *Livestock and Livestock Products, Australia (7221.0)*.

15.31 CATTLE (*000)

31 March	NSW	Vic.	Qld	SA	WA	Tas.	NT	Aust.
1987	4,868	3,478	9,011	912	1,660	535	1,439	21,915
1988	4,962	3,474	8,825	947	1,705	542	1,385	21,851
1989	5,329	3,509	8,994	943	1,702	560	1,388	22,434
1990	5,506	3,646	9,489	969	1,673	569	1,327	23,191
1991	5,653	3,631	9,856	990	1,584	584	1,353	23,662
1992	5,697	3,574	10,005	1,016	1,649	593	1,334	23,880

Source: *Livestock and Livestock Products, Australia (7221.0)* and *Selected Agricultural Commodities, Australia, Preliminary (7112.0)*.

Sheep

With the exception of a short period in the early 1860s, when the flocks in Victoria outnumbered those of New South Wales, the latter State has occupied the premier position in sheep raising. Western Australia is presently the second largest sheep raising State, with Victoria ranking third in numbers of sheep.

Sheep numbers reached a peak of 180 million in Australia in 1970. Following subsequent falls, by March 1990, flock numbers had risen to 170 million. However, poor market prospects for both wool and live sheep exports since 1990 have had a marked impact on flock reduction and numbers declined to 147 million in 1992.

15.32 SHEEP AND LAMBS (millions)

31 March	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
1987	52.2	26.6	14.6	17.2	33.5	5.0	149.2
1988	54.9	27.0	14.4	17.4	34.0	4.7	152.4
1989	59.1	28.1	14.9	17.4	37.1	4.9	161.6
1990	62.1	29.3	16.7	18.4	38.4	5.3	170.3
1991	59.8	27.5	17.4	17.2	36.5	4.8	163.2
1992	53.6	24.8	15.3	16.1	34.1	4.3	148.2

Source: *Livestock and Livestock Products, Australia (7221.0)* and *Selected Agricultural Commodities, Australia, Preliminary (7112.0)*.

15.33 SHEEP AND LAMBS (millions)

31 March	Sheep (1 year and over)				Lambs and hoggets (under 1 year)	Total sheep and lambs
	Rams	Breeding ewes	Other ewes	Wethers		
1987	1.7	72.1	4.2	37.5	33.6	149.2
1988	1.7	71.6	4.3	39.1	35.7	152.4
1989	1.8	74.8	4.7	43.7	36.6	161.6
1990	1.8	74.8	6.0	47.7	40.1	170.3
1991	1.7	67.0	9.7	48.7	36.1	163.2
1992	1.6	65.5	7.9	45.5	27.8	148.2

Source: Livestock and Livestock Products, Australia (7221.0).

Pigs

15.34 PIGS ('000)

31 March	NSW	Vic.	Qld	SA	WA	Tas.	Aust.
1987	830	432	579	422	295	46	2,611
1988	853	437	617	441	307	48	2,706
1989	855	423	611	450	285	45	2,671
1990	865	428	600	437	272	42	2,648
1991	821	403	596	400	271	38	2,531
1992	1,022	431	560	420	318	40	2,792

Source: Livestock and Livestock Products, Australia (7221.0).

Poultry

15.35 POULTRY ('000)

	Chickens			Other poultry			Total all poultry
	Hens and pullets for egg production	Meat strain chickens (broilers)	Total chickens(a)	Ducks	Turkeys	Other poultry	
31 March							
1987	13,506	39,187	55,579	350	1,249	430	57,608
1988	13,463	47,988	64,201	663	1,585	365	66,813
1989	13,193	39,709	56,149	263	1,125	420	57,957
1990	13,084	43,906	59,956	276	1,240	449	61,920
1991	12,590	39,883	55,116	364	1,446	455	57,382
1992	10,994	44,750	60,071	n.p.	n.p.	(b)2,354	62,364

(a) Includes breeding stock. (b) Includes ducks and turkeys.

Source: Livestock and Livestock Products, Australia (7221.0).

MEAT PRODUCTION AND SLAUGHTERINGS

Tables 15.36 and 15.37 contain details of slaughterings and meat production from abattoirs, commercial poultry and other

slaughtering establishments and include estimates of animals slaughtered on farms and by country butchers. The data relate only to slaughterings for human consumption and do not include animals condemned or those killed for boiling down.

15.36 PRODUCTION OF MEAT(a) (^{'000 tonnes})

Year	Carcass weight					Dressed weight(b)(c)	
	Beef	Veal	Mutton	Lamb	Pig meat	Total all chickens	Poultry(d)
1986-87	1,481	40	288	296	283	2,388	344
1987-88	1,549	39	293	293	297	2,471	(e)362
1988-89	1,459	32	254	290	308	2,343	(e)368
1989-90	1,642	35	333	295	317	2,622	(e)380
1990-91	1,723	36	381	287	312	2,741	(e)388
1991-92	1,753	38	392	275	336	2,793	416

(a) Excludes offal. (b) Excludes the Northern Territory and the Australian Capital Territory. (c) Dressed weight of whole birds, pieces and giblets. (d) Includes other fowls, turkeys, ducks and drakes. (e) Excludes Tasmania.

Source: *Livestock Products, Australia (7215.0)*.

15.37 NUMBERS OF LIVESTOCK AND POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION (million head)

Year	Cattle	Calves	Sheep	Lambs	Pigs	Chickens (a)	Other fowls(b) and turkeys	Ducks and drakes
1986-87	6.8	1.2	14.7	17.7	4.7	269.3	11.2	2.1
1987-88	6.9	1.2	14.9	17.2	4.9	(c)273.6	11.1	2.3
1988-89	6.3	1.0	12.4	16.5	5.0	(c)274.1	10.6	2.2
1989-90	6.9	1.0	16.1	16.8	4.9	(c)285.5	10.8	2.2
1990-91	7.3	1.0	18.2	16.4	4.9	(c)283.7	9.9	2.3
1991-92	7.6	1.1	18.8	15.8	5.1	(c)293.5	8.7	2.2

(a) Comprises broilers, fryers and roasters. (b) Comprises hens, roosters, etc. (c) Excludes Tasmania.

Source: *Livestock Products, Australia (7215.0)* and *Agricultural Statistics, Australian Bureau of Statistics*.

15.38 GROSS VALUE OF LIVESTOCK SLAUGHTERINGS AND OTHER DISPOSALS(a) (\$ million)

Year	Cattle and calves	Sheep and lambs	Pigs	Poultry	Total
1986-87	2,824.7	721.2	468.5	601.7	4,624.6
1987-88	3,047.9	803.9	536.1	671.2	(b)5,074.3
1988-89	3,189.6	738.3	629.3	730.3	(b)5,300.8
1989-90	3,860.5	585.4	656.0	777.9	(b)5,893.3
1990-91	3,869.4	373.3	691.0	788.3	(b)5,730.0
1991-92	3,738.2	430.4	657.1	768.0	(b)5,635.7

(a) Includes adjustment for net exports of live animals. (b) Includes goats and buffalo.

Source: *Value of Agricultural Commodities Produced, Australia (7503.0)* and *Value of Selected Agricultural Commodities Produced, Australia, Preliminary (7502.0)*.

15.39 EXPORTS OF FRESH, CHILLED OR FROZEN MEAT(a)
(^{'000 tonnes})

	<i>Beef(b)(c)</i>		<i>Veal(b)</i>		<i>Mutton(b)</i>		<i>Lamb</i>		<i>Pork</i>
	<i>Bone-in</i>	<i>Bone-out</i>	<i>Bone-in</i>	<i>Bone-out</i>	<i>Bone-in</i>	<i>Bone-out</i>	<i>Bone-in</i>	<i>Bone-out</i>	
1986-87	4.6	555.3	2.1	3.5	49.9	57.9	53.7	1.5	3.9
1987-88	7.6	310.2	0.4	2.7	31.5	34.0	26.3	1.3	3.0
1988-89	47.4	493.7	1.0	5.3	32.6	53.7	34.9	2.7	6.6
1989-90	83.1	579.8	1.1	4.6	63.3	55.0	36.4	3.6	6.2
1990-91	83.8	661.9	1.0	5.1	91.0	64.9	41.4	3.4	5.4
1991-92	99.8	691.2	1.5	5.7	103.7	75.0	39.4	4.6	5.0

(a) Excludes offal. (b) Factors can be applied to beef, veal, mutton and lamb bone-out figures to derive bone-in carcass weight which, when added to bone-in figures, shows total exports in carcass weight. The factor for beef and veal is 1.5 and that for mutton and lamb 2.0 (Source: Australian Meat and Livestock Corporation). (c) Includes buffalo meat.

Source: *Agricultural Statistics, Australian Bureau of Statistics.*

Production of sheep meats in Australia is closely associated with the wool industry. Sheep grazing often occurs on mixed farms in conjunction with beef and/or grain enterprises and in some areas producers specialise in lamb production. The supply of sheep meat depends greatly on seasonal conditions, decisions to build up or reduce flock numbers, expectations of wool prices, live sheep exports and the pattern of domestic consumption of meat. Production in 1991-92 has decreased by 2.5 per cent to 367,000 tonnes.

The opening of the Japanese and Korean beef markets in 1988 has provided substantial opportunities to increase beef exports. Exports to Korea reached 98,000 tonnes in 1991-92, 21 per cent higher than the previous season. Liberalisation of the Japanese market occurred in 1991. This involved removal of import quotas in exchange for a percentage of customs value. To cater for the type of beef required by the Japanese market, the number of feedlots is expected to increase.

Significant changes have taken place in the pig producing industry in recent years. Capital investment and corporate takeovers have seen the emergence of a few large companies

producing 30 per cent of all pigs sold in Australia. These moves, on top of the trend to more intensive and efficient production techniques, have seen pigmeat production rise steadily since 1982 to reach 326,150 tonnes in 1991-92. In addition, there has been an increase in the slaughter weights of pigs reflecting the demands of the fresh pork trade.

WOOL

Wool production

Wool as shorn from the sheep ('greasy wool') contains an appreciable amount of grease, dirt, vegetable matter and other extraneous material. The exact quantities of these impurities in the fleece vary between differing climatic and pastoral conditions, with seasonal fluctuations and with the breed and condition of the sheep. It is, however, the clean wool fibre that is ultimately consumed by the textile industry and the term 'clean yield' is used to express the net wool fibre content present in greasy wool. Clean yields for Australia have gradually trended upwards; in 1990-91 and 1991-92 the clean yield of the Australian clip was 65.6 and 65.1 per cent, respectively.

15.40 SHEARING, WOOL PRODUCTION AND VALUE

Year	Sheep and lambs shorn (million)	Average fleece weight (kg)	Shorn wool ('000 tonnes)	Other wool(a) ('000 tonnes)	Wool production	
					Total wool	
					Quantity ('000 tonnes)	Gross value (b) (\$m)
1986-87	180.8	4.50	813.7	76.6	890.4	3,334
1987-88	186.3	4.53	843.0	73.4	916.4	5,517
1988-89	196.4	4.58	898.9	60.1	959.0	5,906
1989-90	215.1	4.79	1,030.9	71.1	1,102.0	5,718
1990-91	212.9	4.65	989.2	76.9	1,066.1	4,181
1991-92	181.2	4.42	801.2	73.7	875.0	3,019

(a) Comprises dead and fellmongered wool, and wool exported on skins. (b) Gross value is based, for shorn wool, upon the average price realised for greasy wool sold at auction and, for skin wools, on prices recorded by fellmongers and skin exporters.

Source: *Shearing and Wool Production Forecast, Australia (7211.0)*; *Value of Agricultural Commodities Produced, Australia (7503.0)*; and *Value of Selected Agricultural Commodities Produced, Australia, Preliminary (7502.0)*.

Wool receivals

The total amounts of taxable wool received by selling brokers and dealers in recent years are

shown in the following table. It excludes wool received by brokers on which tax had already been paid by other dealers (private buyers) or brokers.

15.41 TAXABLE WOOL RECEIVALS

Year	Brokers (NCWSB)	Receivals		Dealers as per cent of total receivals %
		Dealers(a) — '000 tonnes —	Brokers and dealers	
1986-87	625.8	188.2	814.0	23.1
1987-88	707.3	135.1	842.4	16.0
1988-89	755.1	136.5	891.5	15.3
1989-90	911.8	138.0	1,049.8	13.1
1990-91	916.3	96.4	1,012.7	9.5
1991-92	733.8	102.3	836.1	12.2

(a) Includes brokers who are not members of the National Council of Wool Selling Brokers of Australia (NCWSB).

Source: *Livestock Products, Australia (7215.0)*.

Wool marketing arrangements

The auction system reverted to a 'free marketing' system during the 1990-91 season. The Reserve Price Scheme that had operated since 1974 was suspended in February 1991. It had become unworkable due to the massive accumulation of wool in the stockpile and the substantial debt which had been incurred. The stockpile of bales at 19 June 1992 was 4,069,294.

From 1 July 1991 the Australian Wool Corporation (AWC) was split into three separate organisations. The Australian Wool Corporation continues in a reduced form and is responsible for wool promotions programs, market regulations, shear training and encouraging

efficiency within the sphere of wool handling and transport and market reporting. The Australian Wool Realisation Commission is responsible for the disposal of the wool stockpile, sale of assets and repayment of loans borrowed by the previous AWC to purchase wool. The Wool Research and Development Corporation is responsible for coordinating, developing and funding the wool research and development program.

DAIRYING

Dairying is a major Australian rural industry, ranking fourth behind the wheat, wool and beef

industries in terms of value of production. The gross value of dairy production at farm gate prices in 1990-91 was \$1,825 million or approximately nine per cent of the gross value of rural production. The gross value of this industry at an ex-factory level is approximately \$4,200 million per annum. The industry is also one of Australia's leading rural industries in terms of the proportion of down stream employment and processing it generates. Employment at manufacturing, processing and farm establishments is estimated to be in the vicinity of 50,000 people.

Production

Australian milk production in 1991-92 was 6,732 million litres, an increase of 5.1 per cent compared with the previous year. This largely reflected productivity gains through a combination of farm and herd management techniques. Average production per dairy cow of 4,125 litres in 1991-92 was around a third higher than the levels of the early 1980s.

Domestic market

Average annual per capita milk consumption has stabilised at around 100 litres since the mid-1980s. However, there have been substantial changes in the types of fresh milk consumed, with fat reduced and modified milks taking an increasing share of overall market milk sales.

After growing strongly throughout the late 1980s, domestic sales of cheese have stabilised in recent years at slightly above 150,000 tonnes. This is approximately nine kilograms per capita on an annual basis. This reflects the fact that recent increases in sales of cheddar varieties (particularly lower fat varieties) have been offset by a decline in sales of round eye cheese (such as Swiss, Gouda and Edam). Imports, mainly of specialty cheese brands, account for around 15 per cent of domestic cheese sales.

Consumer preferences for healthier, more natural foods has boosted demand for short shelf life products in recent years. Yogurt sales in 1991-92 reached 72,055 tonnes which is about two-thirds higher than those recorded in the mid-1980s.

15.42 MILK CATTLE (^{'000})

31 March	Bulls used or intended for service	Cows and heifers used or intended for production of milk or cream for sale		
		Cows (in milk and dry)	Heifers	House cows and heifers(a)
1987	37	1,716	845	41
1988	36	1,676	830	38
1989	36	1,663	813	34
1990	33	1,653	808	28
1991	31	1,637	762	(b)
1992	31	1,652	749	(b)

(a) One year and over, kept for the establishment's own milk supply. (b) Not collected.

Source: *Livestock and Livestock Products, Australia (7221.0) and Selected Agricultural Commodities, Australia, Preliminary (7112.0).*

15.43 PRODUCTION, UTILISATION AND GROSS VALUE OF WHOLE MILK

Year	Whole milk intake by factories			
	Market milk sales by factories	Milk used in the manufacture of dairy products	Total intake	Gross value
	— million litres —			\$m
1986-87	1,655	4,517	6,172	1,257.4
1987-88	1,667	4,462	6,129	1,390.9
1988-89	1,695	4,594	6,289	1,635.1
1989-90	1,705	4,558	6,263	1,749.0
1990-91	1,736	4,667	6,403	1,824.8
1991-92	1,765	4,965	6,731	1,911.0

Source: Australian Dairy Corporation.

BEEKEEPING

The beekeeping industry consists of approximately 300-400 full-time apiarists, who produce approximately 70 per cent of the Australian honey production, and a large number of part-time apiarists who produce the

rest. Some of these apiarists move as far afield as from Victoria to Queensland in an endeavour to obtain a continuous supply of nectar for honey from suitable flora. While honey production remains the predominant sector of the industry, production of breeding stock and provision of pollination services is significant.

15.44 BEEKEEPING

Year	Number of apiarists	Honey produced			Average pro- duction per pro- ductive hive (kg)	Gross value (\$ '000)	Beeswax produced	
		Number of beehives		Quantity (^{'000} tonnes)			Quantity (tonnes)	Gross value (\$ ^{'000})(a)
		Productive (^{'000})	Total (^{'000})					
1986-87	760	293	364	19.2	65.6	31,050	334	1,988
1987-88	770	285	366	23.0	80.8	32,523	428	1,940
1988-89	836	307	405	22.6	73.8	29,586	530	1,967
1989-90	819	298	405	21.2	71.2	26,113	412	1,546
1990-91	726	290	384	20.6	71.2	26,078	381	1,389
1991-92	651	264	366	18.9	71.9	29,693	390	1,175

(a) Includes pollen.

Source: Agricultural Census, Australian Bureau of Statistics.

APPARENT CONSUMPTION OF FOODSTUFFS

Estimates of the consumption of foodstuffs in Australia are compiled by deducting exports from the sum of production and imports and allowing for recorded movement in stocks of the respective commodities. The term 'consumption' is used in a specialised sense. The estimates derived are broadly the quantities available for consumption at a particular level of distribution, that is, ex-market, ex-store or ex-factory depending on the method of marketing and/or

processing. Because consumption of foodstuffs is measured, in general, at 'producer' level no allowance is made for wastage before they are consumed. The effect of ignoring wastage is ultimately to overstate consumption to some extent.

The estimates of consumption per capita have been obtained by using the mean resident population for the period.

Table 15.45 shows the changes in trends in the consumption of various foodstuffs over the past fifty years.

15.45 APPARENT PER CAPITA CONSUMPTION OF FOODSTUFFS
(kg — unless otherwise indicated)

Commodity	Average 3 years ended						Latest year
	1938-39	1948-49	1958-59	1968-69	1978-79	1988-89	
Meat and meat products							
Meat (carcass equivalent weight)							
Beef	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	39.2
Veal	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1.5
Beef and Veal	63.6	49.5	56.2	40.0	64.8	40.1	40.7
Lamb	6.8	11.4	13.3	20.5	14.4	14.9	14.1
Mutton	27.2	20.5	23.1	18.8	3.6	7.3	7.7
Pigmeat(a)	3.9	3.2	4.6	6.7	13.3	17.5	18.0
Total	101.5	84.6	97.2	85.9	96.1	79.8	80.5
Offal and meat, n.e.i.	3.8	4.0	5.2	5.1	5.9	3.1	3.8
Total meat and meat products (carcass equivalent weight)	118.5	103.0	112.4	98.8	102.0	83.0	84.4
Canned meat (canned weight)	1.0	1.2	1.9	2.2	1.6	n.a.	n.a.
Bacon and ham (cured carcass weight)	4.6	5.3	3.2	3.6	6.0	6.9	7.1
Poultry							
Poultry (dressed weight)	n.a.	n.a.	n.a.	8.3	17.1	24.3	25.4
Milk and milk products							
Market milk (fluid whole litres)	106.4	138.7	128.7	128.2	100.5	101.8	101.1
Cheese (natural equivalent weight)	2.0	2.5	2.6	3.5	5.3	8.3	8.7
Oils and fats							
Butter	14.9	11.2	12.3	9.8	5.1	3.2	2.8
Margarine							
Table margarine	0.4	0.4	n.a.	1.5	5.4	6.8	6.7
Other margarine	1.8	2.4	2.2	3.4	3.1	2.2	1.9
Total margarine	2.2	2.8	n.a.	4.9	8.5	9.0	8.6
Beverages							
Tea	3.1	2.9	2.7	2.3	1.7	1.2	1.0
Coffee(b)	0.3	0.5	0.6	1.2	1.6	2.0	2.1
Aerated and carbonated waters (litres)	n.a.	n.a.	n.a.	47.3	67.4	79.9	96.7
Beer (litres)	53.2	76.8	99.7	113.5	133.2	111.7	108.4
Wine (litres)	2.7	5.9	5.0	8.2	14.7	20.2	17.8
Spirits (litres alcohol)	0.5	0.8	0.7	0.9	1.2	1.2	1.2

(a) Includes pigmeat for bacon and ham. (b) Coffee and coffee products in terms of roasted coffee.

Source: *Apparent Consumption of Foodstuffs and Nutrients, Australia (4306.0)*.

AGRICULTURAL IMPROVEMENTS

Irrigation

Irrigation is one of the factors by which agriculture is developed. The variability in stream flow and annual rainfall means that successful irrigation of crops and pastures is

dependent on storage. Ground water supplies are used in areas where the quantity is adequate and the quality is suitable. The area of land irrigated (approximately 2.0 million hectares in 1990-91) forms 10.8 per cent of the total area under crops.

15.46 AREA IRRIGATED, YEAR ENDED 31 MARCH 1991(a)
(hectares)

Source of water used	NSW	Vic.	Qld	SA	WA	Tas.	Aust.(b)
Surface water							
From State irrigation schemes	419,017	453,648	144,299	21,658	14,817	4,202	1,057,710
From other schemes (including private group schemes)							
Direct from rivers, creeks, lakes, etc.	395,162	38,884	38,336	17,890	2,130	14,389	507,224
From farm dams	38,209	29,407	44,890	5,030	7,451	24,907	150,094
Total surface water	852,389	521,939	227,525	44,578	24,398	43,499	1,715,027
Underground water supply (for example, bore, spear, well)	53,324	28,461	130,214	64,967	6,989	2,565	287,641
Town or country reticulated water supply	1,085	2,899	196	640	101	133	5,133
Total all water sources	906,798	553,299	357,935	110,185	31,488	46,197	2,007,781 (c)

(a) Data for irrigation collected every 3 years. (b) Also includes figures for the Australian Capital Territory and Northern Territory.
(c) Includes unspecified sources.

Source: *Summary of Crops, Australia (7330.0)*.

Fertilisers

Most Australian soils are deficient in phosphorous. Because of this and the significant but less widespread deficiency of sulphur in many soils, phosphatic fertilisers, particularly single superphosphate, account for the bulk of fertiliser usage. Over half of superphosphate is used on pastures in areas

with moderate to good rainfall. Large quantities are also used on cereal crops. Nitrogen deficiency is also general in Australian soils and the use of nitrogenous fertilisers is increasing. Potassium deficiency however is confined mainly to soils in the higher rainfall areas which are intensively cropped or used for irrigated pastures.

15.47 ARTIFICIAL FERTILISERS: AREA AND USAGE

Year	Area fertilised ('000 ha)	Super-phosphate used ('000 tonnes)	Nitrogenous fertilisers used ('000 tonnes)	Other fertilisers used ('000 tonnes)
1986-87	24,064	1,981	416	830
1987-88	26,651	2,454	431	953
1988-89	27,871	2,523	438	971
1989-90	27,360	2,378	483	1,010
1990-91	23,627	(a)	(a)	(b)3,239
1991-92	19,517	(a)	(a)	(b)2,678

(a) Not collected. (b) Includes all fertiliser categories.

Source: *Summary of Crops, Australia (7330.0)*.

BIBLIOGRAPHY

ABS Publications

Agricultural Industries, Financial Statistics, Australia, (7507.0)

Agricultural Industries, Financial Statistics, Australia, First Preliminary Estimates (7509.0)

Agricultural Industries, Financial Statistics, Australia, Preliminary (7508.0)

BIBLIOGRAPHY — continued

- Apparent Consumption of Foodstuffs and Nutrients, Australia (4306.0)*
Apparent Consumption of Selected Foodstuffs, Australia, Preliminary (4315.0)
Australian Standard Industrial Classification (1201.0, 1202.0)
Characteristics of Australian Farms (7102.0)
Foreign Trade, Australia: Merchandise Exports and Imports (5410.0)
The Labour Force, Australia (6203.0)
Livestock and Livestock Products, Australia (7221.0)
Livestock Products, Australia (7215.0)
Principal Agricultural Commodities, Australia, Preliminary, Agricultural Production and Farmers' Intentions for (next) Season (7111.0)
Selected Agricultural Commodities, Australia, Preliminary (7112.0)
Shearing and Wool Production Forecast, Australia (7211.0)
Shearing and Wool Production Forecast, Australia, Preliminary (7210.0)
Summary of Crops, Australia (7330.0)
Value of Agricultural Commodities Produced, Australia (7503.0)
Value of Principal Agricultural Commodities Produced, Australia, Preliminary (7501.0)
Value of Selected Agricultural Commodities Produced, Australia, Preliminary (7502.0)
Viticulture, Australia (7310.0)

Other Publications

- INTERNATIONAL WHEAT COUNCIL. Grain Marketing Report, December 1992*
LEWIS, HOLT AND ENGLISH. Composition of Foods, Australia, AGPS, Canberra, 1992

FOR MORE INFORMATION

The ABS has a far wider range of information on Australia than that contained in the *Year Book*. Information is available in the form of regular publications, electronic data services, special tables and from investigations of published and unpublished data.

For further information contact ABS Information Services at one of the addresses listed on the page facing the Introduction to the *Year Book*.