

Chapter 12

AGRICULTURE

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Chapter 12

AGRICULTURE

Agriculture commenced in Tasmania with settlement in 1803, the total livestock amounting to one bull, ten cows, two rams, thirty sheep, thirty-eight pigs, eight goats and one horse. Ever since then, the agricultural sector has been vital to the development and prosperity of the State.

Despite all obstacles the settlers succeeded in the first season in harvesting a crop which gave them a small surplus for seed. On the government farm similar progress was made. By July 1804 it consisted of 19½ acres of wheat, 1¼ acres of oats and 2¼ acres of rye.

By 1820 wheat had emerged as Tasmania's principal agricultural produce; the climate favoured higher yields and the price differential resulting from its higher quality was regarded as being sufficient to outweigh the higher transport costs incurred in selling to the New South Wales markets.

By the early 1820s Tasmanian agriculturalists were sufficiently confident of their progress and potential to undertake further diversification and expansion.

The growth of the British textile industry encouraged a corresponding expansion of the State's wool industry; the 1830s and 40s saw the first utilisation of the midlands for sheep grazing. By 1850 Tasmanian sheep numbers exceeded the two million mark for the first time; their numbers were not to attain this level again until 1931. As a result, the wheat industry contracted somewhat; nevertheless wheat production still regularly exceeded that of New South Wales in this period.

The second half of the nineteenth century was marked by agricultural development in the northern regions of the State, led primarily by the growing numbers of small independent farmers. Their efforts, however, were not entirely successful partly due to the usual shortages of labour and capital. Of more significance was their failure to find any crop which could establish a comparative advantage. The newly-cleared forest lands of the north proved unsuitable for wheat and eventually potatoes were to emerge as a viable alternative in these areas.



The 12 500 megalitre Craighourne Dam on the Coal River between Colebrook and Campania was officially opened in November 1986.

Photo: Mercury

The 1880s and 90s brought significant developments. The successful shipment overseas of apples in the eighties and butter in the nineties led to the establishment of orcharding in the Huon region and of dairying in the north. Both industries were to become characteristic of their respective regions and were to cement trade links with Britain, the early principal consumer of these commodities.

From 1900 to 1914 Tasmanian agriculture prospered from the newly-established free trade within the Australian Federation as well as from its expanding overseas trade. Free trade had the effect of opening mainland markets to Tasmanian specialities. Potatoes, fruit and hops benefited considerably from this new access. Hops, for instance, doubled in acreage during this period. Rising prices after 1902 opened British markets yet further to Tasmanian wool and dairy products.

The First World War intervened to put an end to this expansionary trend. In a period of wartime shortage of labour, equipment and markets, beef production took precedence over dairying in many areas. The production of wool and fruit growing however, continued at a moderate level of prosperity.

The early 1920s saw a renewed vigour in Tasmania's agriculture in the wake of the optimism created by the Allied victory. After 1925, however, farming tended to become a rather less profitable activity. In 1926 a price support scheme was adopted for dairying and, as the prices of other products continued to fall, many non-dairy farmers turned their efforts to butter production, attracted by its apparent stability. The later twenties are characterised by the growing diversification of activity on farm holdings, principally as a hedge against the growing economic uncertainties of the period.

The arrival of the Depression in the early 1930s wrought changes which were to permanently alter the character of Tasmanian agriculture. The progressive impoverishment of arable soils and the low carrying capacity of pastoral properties became evident as farmers experienced the effects of inefficient techniques and low production. The later thirties, with the gradual lifting of the Depression, were marked by the greater use of mechanisation, the widespread adoption of new seed varieties and the discovery and remedying of trace element deficiencies. This period witnessed a substantial investment in pasture improvement, in contrast with the methods of the preceding century.

The advent of World War Two intervened to arrest these promising developments. Despite shortages the war brought at least one agricultural benefit to the State. The increased demand by the armed forces for conveniently packaged foods for front-line troops led to the introduction of vegetable canning facilities to Tasmania.

The early 1950s was a period of recovery. The wool boom of 1951 provided funds for desperately needed re-investment, and the period 1954-64 was one of unparalleled expansion. Farms tended toward greater size and specialisa-

tion while labour input and farm numbers declined. New Asian markets for wool were opened and governmental involvement increased. 1964 saw the setting up of the Artificial Breeding Board (known since 1977 as The Tasmanian Herd Improvement Organization) and artificial insemination techniques found increasingly wide favour. Today, almost one quarter of the State's dairy cows are bred artificially.

Far reaching changes faced Tasmanian agriculture in 1973, when Britain joined the European Economic Community. Tasmanian produce was effectively barred from its important and traditional British market causing a significant decline in apple and butter production. It is to this cause that Tasmania's gradual abandonment of its traditional orcharding activities can be attributed.

In recent years the trend has again been towards diversification of both markets and products. Attempts to reach further Asian markets have met with varying degrees of success and a number of entirely new, often experimental, ventures have been undertaken. The State's unique poppy industry is one early and particularly successful instance. Tasmania's production of alkaloids from the poppy plant for pharmaceutical preparations today runs third to that of the traditional producers, India and Turkey. Other ventures which have made considerable progress include the nascent wine industry — the State has currently some twenty vineyards in operation — and experiments in the areas of berry fruit of various kinds, deer farming, and the cultivation of essential oil crops.

In 1986-87 the total value of agricultural production was \$436.8 million which was an increase of 12 per cent over the previous year's figure of \$390.2m. A major component of the rise was the increase in average wool prices from \$3.48/kg to \$4.26/kg giving a total value increase of \$21.9m, from \$83.7m in 1985-86 to \$105.6m in 1986-87.

The total value of crops in 1986-87 was \$147.8m with, for the first time, potato production being worth more than apple production.

12.1 GROSS VALUE OF AGRICULTURAL COMMODITIES PRODUCED, TASMANIA (\$million)

<i>Agricultural sector</i>	<i>1985-86</i>	<i>1986-87</i>
Crops	147.8	144.9
Livestock slaughtered and exported for slaughter	95.1	111.5
Livestock products	147.3	180.4
Total agriculture	390.2	436.8

12.1 LAND USE

At March 1987 a little under 1 873 000 hectares of land in Tasmania were being utilised for agricultural purposes. This represents some 30.4 per cent of the State's total land area of 6 833 100 hectares.

By far, the greatest proportion of Tasmania's agricultural land is given over to the grazing of sheep and cattle. This activity accounts for 95.8 per cent of the total use of agricultural land. Of this grazing land, 46.4 per cent is sown pasture, the remainder being simply cleared and fenced bushland.

The cultivation of crops used 4.2 per cent of the total agricultural land.

12.2 AGRICULTURAL LAND UTILISATION, TASMANIA, 1986-87 (hectares)

Purpose	Area
Crops	77 908
Sown pasture (including area harvested)	832 368
Balance (used mainly for grazing)	962 518
Total	1 872 794

Just over 3 637 commercial farming establishments make up Tasmania's agricultural sector. More than 75 per cent carry cattle.

12.3 NUMBER OF ESTABLISHMENTS GROWING PRINCIPAL CROPS OR CARRYING LIVESTOCK, TASMANIA, 1987

	1985-86	1986-87
Number of establishments growing —		
Barley for grain	522	426
Oats for grain	415	327
Wheat for grain	125	116
Hops	17	16
Orchard fruit	255	252
Potatoes	515	557
Carrying —		
Breeding ewes	1 803	1 793
Sheep (all types)	1 933	1 967
Breeding sows and gilts	165	166
Pigs	225	220
Cattle (all types)	2 767	2 817
Total establishments	3 413	3 637

12.1.1 Sown Pastures and Principal Crops

The area utilised for the raising of crops for both stock and human consumption amounts to 910 277 hectares. Of this, the majority is used for the cultivation of unharvested feed; stock are simply turned out to graze upon the mature crop. This form of cultivation comprised 778 554 hectares, while a further 53 815 hectares of harvested pasture was stored in the form of hay, green feed or silage.

The past few years have seen the growing popularity of silage as a form of feed storage. This can be attributed to the comparative ease with which silage can be collected and stored. Requiring only a covered pit and minimal preparation, silage eliminates the capital demands of hay baling and shed storage entirely.

12.4 AREA OF SOWN PASTURE, TASMANIA (hectares)

Pasture	1985-86	1986-87
Pasture harvested —		
Hay	47 956	45 116
Seed	1 473	1 422
Green feed or silage	8 257	8 700

The area planted to cereal grains consists mainly of barley, oats and wheat. Triticale, used principally for the feeding of poultry, continues to be a significant cereal grain crop in terms of area. The major grain growing areas are in the north of the State, centred around the Tamar Valley. The north-western regions continue to have the largest areas devoted to sown pastures. This predominance of the north-west can be related to the high proportion of the State's dairy cattle which is concentrated there. The principal green feed crops are oats and turnips, but other crops used for green feed include rape, chou moellier, barley, millet and wheat.

12.5 AREA OF SELECTED PRINCIPAL CROPS, TASMANIA, 1986-87 (hectares)

Crops	Area
Cereals for grain	19 208
Legumes mainly for grain	1 962
Hay	1 358
Orchard fruit	2 843
Berry and small fruit	223
Oil poppies	3 109
Hops	854
Vegetables	16 680

Artificial Fertiliser

In 1986-87 artificial fertiliser was applied to 446 614 hectares of agricultural land, 391 603 hectares of which were pasture. Of the 2 338 hectares of wheat sown in Tasmania 1 357 or 58 per cent were artificially fertilised. There were 100 813 tonnes of artificial fertiliser used of which 64 per cent was superphosphate.

12.6 ARTIFICIAL FERTILISER USED, TASMANIA, 1986-87

	Pastures	Wheat	Other crops	Total
Area fertilised (hectares)	391 603	1 357	53 654	446 614
Fertiliser used (tonnes) —				
Superphosphate	54 334	200	9 869	64 403
Straight nitrogenous types	998	22	1 203	2 250
Other artificial fertilisers	20 241	111	13 806	34 158

Oil poppies were initially grown on the mid-north-west coast; more recently they have been grown in other northern areas of the State, although adverse weather conditions, particularly excessive rain, have proved to be a problem in some areas. 1979-80 saw a sudden contraction in the area of poppies planted due to the closure of the United States market to the Tasmanian product. Subsequent negotiations reopened this market, thus ensuring the industry's survival.

12.2 LIVESTOCK

Numbers of sheep and lambs, meat cattle and pigs in Tasmania increased over the last year whilst the number of dairy cattle decreased. The number of goats and deer also showed a large increase.

12.7 LIVESTOCK NUMBERS, TASMANIA ('000)

Livestock	1986	1987
Sheep and lambs	4 822.5	4 954.0
Meat cattle	368.6	395.3
Milk cattle	140.5	139.5
Pigs	42.1	46.1
Goats	9.6	14.5
Deer	3.3	5.4
Bees (hives)	13.5	13.3

12.2.1 Sheep

The predominant breed of sheep in Tasmania is the Polwarth, accounting for 38 per cent of sheep numbers. The Polwarth is particularly suited to cool, moist areas or to sparse grazing. This makes it particularly suitable to Tasmanian

conditions where sheep farming suffers from the climatic limitations of summers too dry and winters too cold for the adequate growth of pasture throughout the year.

Merino numbers have been gradually increasing in recent years, their finer wool attracting growers seeking to sell to the lucrative Japanese markets.

12.8 SHEEP NUMBERS TASMANIA, 1986 ('000)

Breed	Rams, 1 year and over	Other sheep and lambs	Total
Border Leicester	2.0	70.5	72.5
Cormo	1.7	133.1	134.8
Corriedale	3.3	429.0	432.2
Dorset Horn	1.3	27.2	28.5
Merino	12.1	674.3	686.3
Poll Dorset	5.6	76.4	81.9
Polwarth	15.0	1 891.9	1 907.0
Romney-Marsh	1.0	49.6	50.6
Southdown	2.6	39.1	41.7
Suffolk	3.1	42.9	46.0
Other Breeds	1.4	82.0	83.4
Merino comebacks	3.9	926.8	930.7
Merino Crossbreeds	0.4	214.4	214.8
Other Crossbreeds	0.5	372.2	372.7
Total	53.9	5 029.3	5 083.2

12.2.2 Cattle

The main breeds of cattle in Tasmania for beef production are the Hereford, the Aberdeen Angus, Shorthorn, Murray Greys and the Devon. In recent years new breeds such as the Charolais, Santa Gertrudis, Simmental and the Main Ainjou

have been introduced by farmers keen to utilise the advantages offered by crossbreeding. This development is in contrast to the situation which existed previously, when beef production was not a great priority and beef cattle were generally culled from dairy herds. Even today, only about 10 per cent of beef producing properties rely upon beef as a sole source of income. Stocking rates vary greatly, ranging from one beast to 16 hectares on undeveloped country, to two and a half beasts to a hectare on improved pasture. The majority of Tasmanian beef cattle is run on improved pasture.

The main dairy breeds in Tasmania are Holstein-Friesian and Jersey. Other breeds are the Illawarra, Ayrshire and Guernsey. There has been a general decline in the number of dairy cattle and dairies over the last few years.

12.9 CATTLE NUMBERS, TASMANIA, 1987 ('000)

Breed	Bulls 1 year and over	Other cattle and calves	Total
Straight breeds —			
Angus	2.0	84.5	86.4
Charolais	0.1	2.6	2.7
Poll Devon	0.1	3.0	3.1
Holstein-Friesian	0.9	106.8	107.7
Poll Hereford	4.0	121.1	125.1
Jersey	0.4	14.1	14.5
Murray Grey	0.3	7.1	7.4
Red Poll	0.1	1.7	1.8
Poll Shorthorn	0.5	11.5	12.0
Simmental	0.1	1.4	1.5
South Devon	0.1	2.4	2.5
Other	0.2	5.5	5.7
Cross breeds —			
British/British	0.3	87.1	87.4
European/Other	0.1	10.0	10.1
Beef/Dairy	0.1	57.7	57.8
Other	0.1	8.7	8.7
Total	9.4	525.0	534.4

The distribution of the State's beef cattle is subject to considerable variation, with some 37 per cent in the north-west, 44 per cent in the remaining northern areas and only 19 per cent of the total number in the south.

12.10 CATTLE DISTRIBUTION, TASMANIA, 1987 ('000)

Region	Dairy cattle	Beef cattle	Total
South	7.7	74.3	80.7
North	48.4	175.5	223.9
North-west	84.6	145.6	230.2
Total	139.5	395.3	534.8

12.2.3 Pigs, Goats and Deer

Over the last 10 years the number of agricultural establishments with pig herds has fallen dramatically, although this decrease has levelled out over the last couple of years. In the last year the number of breeding sows and the number of pigs slaughtered have increased.

12.11 PIGS, TASMANIA

	1986	1987
Number of establishments	225	220
Number of ('000) —		
Boars	0.4	0.4
Breeding sows and gilts	6.0	6.3
Other pigs (incl. suckers, weaners, and growers)	35.6	39.4
Total pigs	42.1	46.1
Pigs slaughtered	84.4	89.6

Tasmania's goat population has grown steadily, if not spectacularly, and currently numbers 14 500. Goat products appear to be finding wider public acceptance, with some establishments marketing goat's milk commercially in Tasmania. Of particular note is the demand for fibre goats by New Zealand producers. During 1985-86 some 1 499 were sent to New Zealand from Tasmania.

Many graziers are incorporating cashmere goats on their properties and exporting the fibre to manufacturers in Scotland, the United States and Italy. In september 1987, the average price for fine white cashmere was \$120 a kilogram.

Commercial deer farming, while remaining very much in its infancy, continues to show potential for further development. There are presently 18 licensed farmers in the State with other licence applications under consideration. Many farmers see in deer a profitable sideline, as they can be grazed on the lush pastures which are maintained for dairy production. Deer prices have been kept high as the demand for breeding stock has exceeded supply.

12.12 DEER, TASMANIA

Year	Number
1982	1 000
1983	1 700
1984	2 100
1985	2 200
1986	3 300
1987	5 400

The market for venison has also grown at a steady rate and Tasmanian deer meat is gradually replacing the imported product on restaurant tables.

12.3 LIVESTOCK PRODUCTS

The total value of livestock slaughtered and livestock products in Tasmania during 1986-87 was \$291.9 million of which 37 per cent was for wool production, 26 per cent was for cattle and calves slaughtered and 22 per cent was for dairy products. There was an increase of 20 per cent in the total gross value, from \$242.4 million in 1985-86 to \$291.9 million in 1986-87.

12.13 GROSS VALUE OF LIVESTOCK PRODUCTS, TASMANIA (\$ million)

Product	1985-86	1986-87
Livestock slaughtered —		
Cattle and calves	58.9	75.7
Sheep and lambs	18.1	17.0
Pigs	8.5	9.1
Poultry	9.5	9.8
Wool	83.7	108.7
Dairy products	56.9	64.0
Eggs	5.9	6.1
Honey and beeswax	0.8	1.6
Total	242.4	291.9

Tasmanian production of livestock commodities has been subject to considerable variation in output, due to combinations of various factors, including economic, marketing and climatic conditions.

12.14 LIVESTOCK PRODUCTION, TASMANIA, YEAR ENDED 30 JUNE

Product	Unit	1986	1987
Meat —			
Beef and veal	tonnes	31 757	39 159
Mutton and lamb	"	19 680	20 380
Pigmeat	"	4 665	5 491
Poultry	"	5 087	5 319
Wool —			
Sheep and lambs shorn	'000	5 270	5 234
Shorn wool	tonnes	22 989	24 147
Other wool	"	2 005	2 194
Total wool	"	24 994	26 341
Whole milk	million litres	351	352
Eggs	'000 dozen	3 396	3 551
Honey	tonnes	706	905

12.3.1 Meat

The beef and veal industry provides a good example of the operation of these sort of factors in relation to livestock commodity production. Tasmania's principal overseas beef markets are American, with some exports of special and prime beef to Japan. Tasmanian exports have been indirectly affected by internal legislative

measures taken to protect the US economy. Legislative intervention by Congress, in the form of an export-enhancement program, was designed to reduce US agricultural surpluses of wheat, beef and dairy products. In connection with this effort, restrictions were placed on imports and attempts made to stifle production. Thus exports of Tasmanian beef were dealt a double blow; apart from the limitations placed on imports, the US administration offered a subsidy to encourage the slaughter of dairy herds. The resulting beef stocks were sold as hamburger beef, which has been the principal export market in America for Australian beef.

Main Shearing, Lambing and Slaughtering Periods, Tasmania

Activity	Period
Shearing	September to December
Lambing —	
Spring	August to October
Autumn and winter	March to July
Slaughtering for export —	
Lambs	November to March

Interstate lamb and mutton exports from Tasmania are generally subject to highly variable mainland markets. Stocks of lamb are often sought from Tasmania by mainland supermarket chains when conditions have resulted in insufficient quantities being produced locally.

The value of livestock slaughtered in 1986-87 showed a large increase over the previous year. This was mainly due to the large increase in the value of cattle and calves slaughtered; more slaughterings and an increase in value per animal, from \$382.99 to \$414.95.

12.15 GROSS VALUE OF LIVESTOCK SLAUGHTERED, TASMANIA (\$ million)

Livestock	1985-86	1986-87
Cattle and calves	58.9	75.7
Sheep and lambs	18.1	17.0
Pigs	8.5	9.1
Poultry	9.5	9.8
Total	95.1	111.5

12.3.2 Wool

There has been a large increase in the unit price of wool produced over the last twelve months. The average unit price for shorn wool in 1986-87 was \$4.26 a kilogram compared with of \$3.48 a kilogram for 1985-86.

12.16 WOOL PRODUCTION AND VALUE, TASMANIA

Season	Quantity (tonnes)	Gross value (\$ million)
1980-81	20 049	50.8
1982-83	21 680	58.9
1983-84	21 887	64.7
1984-85	21 935	73.3
1985-86	24 994	83.7
1986-87	26 341	108.7

12.3.3 Dairy Products

Dairy production in 1986-87 has been valued at some \$64 million. The demand from local producers of cheese, confectionery and processed milk products has continued to expand.

12.17 MILK UTILISATION, TASMANIA

Year	Whole milk intake by factories (million litres)	Market milk sold (million litres)
1980-81	288	43
1981-82	295	44
1982-83	323	45
1983-84	339	43
1984-85	r 347	44
1985-86	351	44
1986-87	352	45

Year	Butter (tonnes)	Cheese (tonnes)
1980-81	n.p.	14 147
1981-82	3 964	15 167
1982-83	5 768	14 100
1983-84	6 191	14 080
1984-85	7 690	12 567
1985-86	6 180	16 695
1986-87	5 839	17 183

Source: Australian Dairy Corporation.

12.3.4 Honey

Honey bees are not native to Tasmania but were first introduced during the 1830s. They flourished, with copious amounts of honey being produced by many swarms, and within a few years bees could be found throughout many parts of the State.

Although the clearing of land made some inroads into honey production, as time went by the development of clover based pastures and the introduction of the blackberry, diverted honey production from predominantly forest based flora to a mixture of forest and ground flora.

When, early this century, roads were opening up the west coast, beekeepers began to exploit the leatherwood tree to produce leatherwood

honey, unique to Tasmania, and today export to many parts of the world.

Approximately 75 per cent of Tasmania's honey production is from leatherwood with blackberry and clover making up the bulk of the remainder. Tasmania's Blue Gum (*Eucalyptus globulus*) provides a honey flow every other year for Southern beekeepers.

12.18 HONEY PRODUCTION, TASMANIA, 1986-87

Variety	Tonnes
Leatherwood	631
Other	210
Total	841

Most of the State's commercial beekeepers are located in the north of the State where conditions are most favourable. Every summer Tasmania's beekeepers take their 13 000 hives to the leatherwood blossom on the West Coast where sites containing up to 50 hives are set up in clearings by the roads in the area.



Location of Apiaries

Source: The Tasmanian Beekeepers' Association

Elsewhere, the extensive pastures of the north-east and north-west coasts are rich in a variety of clovers including the well-known 'Wild White' (*Trifolium repens*), and the less common 'Red' clover. Both produce a honey of a very high quality, ranging in colour from water white to pale amber, with a mild, sweet flavour which candies with an extra fine grain. Known simply as 'clover' honey, it has found a ready market in Japan.

In 1986-87 the average productive hive produced about 76 kilograms of honey at a gross value of just under \$1.5 million.

12.4 CROPS

The gross value of all crops produced in the State represents about one third of the total value of Tasmanian agricultural production. For the first time potatoes were the largest contributor to the total value of crops. Previously apple production had been the largest contributor.

12.19 VALUE OF PRINCIPAL CROPS, TASMANIA (\$ million)

<i>Crop</i>	<i>1985-86</i>	<i>1986-87</i>
Cereals for grain	6.8	5.8
Legumes	1.1	0.8
Pasture for hay	23.6	24.9
Apples	34.0	28.0
Carrots	2.1	2.7
Peas for processing	5.8	5.0
Onions	10.7	10.1
Potatoes	27.7	33.8
Total	150.2	144.9

12.4.1 Vegetables

In terms of value, growing vegetables for human consumption is the most important cropping activity undertaken in Tasmania. In the first half of the 1980s this activity has typically accounted for 40 to 44 per cent of the total gross value of all crops produced and 13 to 15 per cent of total gross value of agriculture.

This cash cropping activity is principally under contract for vegetable processing — major processors being located at Smithton, Ulverstone, Devonport and Scottsdale. Only a small part of production is for the fresh market.

Vegetable growing is concentrated along a predominantly coastal strip stretching from the local government area of Westbury to Circular Head. The vegetable growing area is characterised by deep friable krasnozem soil types, relatively high (900 to 1400mm) and reliable rainfall and good distribution of streams and rivers for irrigation.

Three vegetables predominate — green peas for processing, potatoes and French and runner beans. Together these crops account for around 85 per cent of the total area planted to vegetables for human consumption. The other main vegetable crops, into which farmers have diversified over the period, are onions, broad beans, carrots, cauliflowers, Brussels sprouts and cabbages. Much of these vegetable crops are also grown for processing.

12.20 VEGETABLE PRODUCTION, TASMANIA (tonnes)

<i>Crop</i>	<i>1985-86</i>	<i>1986-87</i>
Potatoes	193 019	223 443
Peas for processing	27 279	22 676
Onions	31 411	33 315
Carrots	13 278	15 123
Beans, French and runner	9 449	6 368

12.4.2 Fruit

Tasmania's once buoyant apple industry has declined significantly, particularly since the peak experienced in the mid-sixties. In terms of orchard tree fruit the only other crops of any significance are pears and apricots. However, when compared with apples they have remained only minor activities. Both have declined significantly over

Planting and Harvesting Periods, Tasmania

<i>Crop</i>	<i>Planting</i>	<i>Harvesting</i>	<i>Crop</i>	<i>Harvesting</i>
Cereals —			Fruit —	
Barley	Sept. to Nov.	Feb. to Mar.	Apples	Feb. to May
Oats	Mar. to Oct.	Nov. to Mar.	Apricots	Jan. to Feb.
Wheat	May to Sept.	Jan. to Feb.	Peaches	Jan. to Feb.
Vegetables —			Pears	Feb. to April
Beans, French and runner	Sept. to Jan.	Feb. to April	Plums	Jan. to Feb.
Peas, green	June to Dec.	Nov. to Feb.	Raspberries	Dec. to Jan.
Potatoes —			Currants	Jan. to Feb.
Early	May to July	Oct. to Nov.	Goosberries	Nov. to Dec.
Late	Aug. to Nov.	Feb. to June	Strawberries	Nov. to Jan.
Tomatoes	Oct. to Nov.	Feb. to April		
Other crops —				
Hops	..	Feb. to Mar.		
Field peas	July to Sept.	Jan. to Mar.		
Oil Poppies	Aug. to Oct.	Jan. to Feb.		

the period 1964-65 to 1985-86. The number of pear trees dropped from approximately 250 000 to just over 32 000. The reason for the decline of pear production was the same as for the apple industry; both were orientated to the European export market. The number of apricot trees has fallen from around 70 000 to only 27 000. This decline is principally attributable to the closure in Tasmania of Henry Jones IXL which was the principal market for the State's apricot crop.

12.21 FRUIT PRODUCTION, TASMANIA (tonnes)

Variety	1985-86	1986-87
Orchard fruit —		
Apples	56 548	48 088
Pears	1 200	972
Apricots	213	151
Cherries	18	19
Peaches	11	9
Plums & Prunes	9	8
Nectarines	22	19
Berry & small fruit —		
Blackcurrants	640	630
Raspberries	136	153
Grapes	119	148
Strawberries	82	89
Loganberries	22	12
Gooseberries	—	1

Fruit growing is nevertheless an economically important activity within the State. Over recent years the production of fruit has provided about 23 per cent of the gross value of the State's crops. A variety of berry and small fruit crops, including grapes, have been established in recent years and have made considerable progress. American markets have been established by growers for blueberries, and raspberry production is proving successful. Tasmanian berries are also made into jams, including specialty liqueur jams.

Wine Grapes

Tasmania has become a wine producer of genuine world standing. The cool climate and long hours of sunlight enabling the grapes to ripen over a long season and the small scale of the vineyards, have resulted in a high quality product. Tasmania is one of the few wine making areas in Australia in the enviable position of having demand for its product outstripping supply.

In the 1986-87 season 148 tonnes of wine grapes were produced, 29 tonnes more than that harvested in 1985-86.

The 1985-86 season was the first year under the Tasmanian Appellation of Origin Scheme. This is a wine certification system which provides a guarantee of origin to those using the system.

12.22 GRAPE PRODUCTION, TASMANIA (tonnes)

Variety	1985-86	1986-87
Red grapes —		
Cabernet Sauvignon	35	31
Pinot Noir	14	17
Total	48	48
White grapes —		
Chardonnay	37	44
Rhine Riesling	27	46
Traminer	4	9
Other	3	2
Total	70	100
Total all grapes	119	148

By legislation it prevents producers calling a wine Tasmanian unless the wine has been made from grapes grown in Tasmania, a move which growers say will ensure the future of the industry.

For the 1986-87 season Tasmania had 43 hectares of bearing grapes and 53 hectares of non-bearing. An increased interest in Tasmanian wine by overseas companies has led to an expansion of grape growing particularly of Pinot Noir and Chardonnay which are used for producing sparkling wines.

12.23 AREA OF GRAPE GROWING, TASMANIA, 1986-87 (hectares)

Variety	Bearing	Non-bearing
Red grapes —		
Cabernet Sauvignon	15	9
Pinot Noir	5	20
Other	—	1
Total	20	30
White grapes —		
Chardonnay	8	16
Rhine Riesling	10	5
Traminer	4	—
Other	2	2
Total	23	23
Total all grapes	43	53

12.4.3 Essential Oil Crops

Essential oils had their beginning as a crop in Tasmania in the 1920s. At that time a few grams of true lavender (*Lavandula angustifolia*) were imported by the Denny family at Lilydale. These seeds, followed by plant selection and oil evaluation, formed the basis of the present day enterprises still run by the Denny family.

Lavender was followed in the 1950s by peppermint, but the area of this crop did not expand appreciably until the late 1970s. Since

that time the increasing interest in alternative crops combined with the depression in prices of other agricultural products has seen a growth in the area and number of essential oil crops grown.

Peppermint and spearmint are both members of the family *Labiatae* which produce an essential oil, extracted by distillation, in small glands on the leaves, flowers and stems. The crop is perennial and is established by vegetative propagation of stolons.

Peppermint oil is used mainly as a flavouring component in a very wide range of products, including confectionery, pharmaceuticals and liqueurs. The major component which is immediately identified upon tasting is menthol. However, components such as menthone, menthyl acetate and menthofuran go to impart the balanced flavour which is characteristic of peppermint oil.

Tasmania is ideally situated climatically for the expansion of peppermint and other essential oil crops. Mild, warm days in summer with cool evenings, and a day length in excess of 15 hours are the necessary environmental conditions required for the production of high quality peppermint oil.

The industry in Tasmania is based on establishing and maintaining a sound reputation in the market place for a regular supply of consistent quality products. To achieve these objectives crops are sampled regularly through the growth cycle to aid harvest predictions by assessments of oil quality and yield.

Fennel, which belongs to the family *Umbelliferae*, is another plant under investigation for essential oil production. This plant, together with other members of this family, produce fruits which contain a high proportion of steam extractable aromatic oil. Fennel as a crop is treated as a short term perennial which is initially established from seed. This crop is complementary to peppermint as it matures at a different time and can therefore make more efficient use of harvesting and distillation equipment.

A number of other essential oil crops are at various stages of development including parsley, caraway, boronia, and blackcurrant bud.

12.5 SERVICES TO AGRICULTURE

12.5.1 Agricultural Quarantine

Agricultural quarantine is administered by government to protect all facets of agriculture and the environment with the aim of preventing the introduction or spread of pests and diseases.

Legislation by the Commonwealth and the States provide the authority for any action taken.

In 1904 authorities from each State and the Commonwealth recommended the creation of a Federal Quarantine Service. In 1906 the States agreed to hand over quarantine administration of all overseas imports to the Commonwealth, and this led to the *Quarantine Act* of 1908. On 1 July 1909 the Federal Quarantine Service commenced operation.

Today, the Commonwealth retains this responsibility for overseas imports, and it discharges its responsibilities under Section 51 of the Constitution. The Department of Primary Industry delegates the operational aspects of plant and animal quarantine to the State Department of Agriculture and reimburses it for the costs involved.

The basis for Tasmanian commercial rural production is introduced livestock and plant material. State legislation restricts the entry of such goods and stock from interstate, appropriate to the pest and disease risk involved. Measures taken under the *Quarantine Act* function on a similar basis and are arrived at in consultation with the States. Commonwealth restrictions apply uniformly throughout Australia with provision made for specific State requirements.

Quarantine measures make it possible for industry to obtain the best available material from overseas with adequate safeguards appropriate to its pest and disease status. At times, this may involve extended periods before release, but such delays are preferable to costly controls and the loss of possible market opportunities.

12.5.2 Research and Development

On an annual basis approximately one third of the resources available to the Department of Agriculture is committed to programs of agricultural research and development. The principal aims of this research are to assist the development of new industries, to foster the adoption of improved agricultural technologies and to provide solutions to current agricultural problems. As such, the research is predominantly of an applied nature.

An example of the Department's research is the project of the Forthside Vegetable Research Station. At the end of 1987 a number of plants were being investigated for medicinal applications. These included foxglove, deadly nightshade, henbane, thorn apple, fenugreek, kangaroo apple, Madagascar periwinkle, medicinal parsnip, mountain tobacco, liquorice and artemisia. Other trials involved the development of an edible oil linseed, and the testing of new row covers for vegetable production.

Creative advisory projects, such as demonstrations of current lines of research, go to create a continuous process of information production, disseminated through the scientific media, the popular press, the Department's own publications unit and by personal contact with producers.

The Department has only limited physical and financial resources to conduct its research activities, and thus it is considered necessary to subject project proposals to a system of scrutiny and evaluation at all stages of development. This ensures a co-ordinated approach to research to guarantee the most effective use of available resources.

The Department operates six research farms throughout the State for extensive animal research. Funding for the Department's activities is provided mainly by the State Government, with some contribution from industry sources.

12.5.3 Veterinary Services, Department of Agriculture

The Animal Health Division of the Tasmanian Department of Agriculture supervises and maintains all Government veterinary services. It is administered by the Chief Veterinary Officer, and comprises two branches, the Veterinary Field Branch and the Veterinary Laboratory Branch, both headed by their respective chiefs assisted by senior Veterinary Officers in specialist and administrative roles.

The principal objectives of veterinary services relate to maintaining Tasmania's firmly established control of stock disease. They thus revolve around disease detection and prevention. In some instances specific policies have resulted in actual eradication. Examples are provided by bovine tuberculosis, bovine brucellosis and the sheep ked. Considerable progress has been made with the Hydatid Limitation Program and this disease could be the next to be eliminated.

Another important task of the Veterinary Field Branch is the control of rural vermin. Where poisoning is necessary, the requisite chemical can be supplied and laid by Veterinary Field Branch officers.

These same officers also inspect livestock in saleyards, monitor sheep body lice in district flocks, examine offal in abattoirs for hydatid cysts, test dogs for hydatids, collect blood samples from animals being screened for disease free accreditation, maintain swill feeding surveillance and generally assist their supervising veterinary officer.

Backing up the Field Branch staff is the Veterinary Laboratory Branch at Mt Pleasant

Laboratories, which carries out the pathological, chemical, seriological and bacteriological tests on material submitted by field and private veterinarians. The service offered is an efficient and substantial contribution to the high standard of animal disease control prevailing in Tasmania.

Rural Youth — Young Farmer of the Year Award

The annual Rural Youth — Young Farmer of the Year Award for 1987 was won by Robert Bayles of Cressy, by half a point from John Denison of Flowery Gully.



Robert Bayles, winner with 54.75 points

Photo: Mercury

The competition was held at Bishopsbourne and tested the skills of the competitors in a wide variety of all agricultural and related activities, ranging from ploughing, through seed identification and meat judging, to public speaking.



John Denison, runner up with 54.25 points

Photo: Mercury

12.6 REFERENCES

ABS Publications Produced by the Tasmanian Office:

Principal Agricultural Commodities, Tasmania (Preliminary) (7111.6), annual.

Livestock and Livestock Products, Tasmania (7221.6), annual.

Crops and Pastures, Tasmania (7321.6), annual.

Apples and Pears in Cool Stores, Tasmania (7323.6), monthly seasonal; June to November.

Fruit, Tasmania (7322.6), annual.

Agricultural Land Use and Selected Inputs, Tasmania (7411.6), annual.

Value of Agricultural Commodities Produced, Tasmania (7501.6), annual.

ABS Publications Produced by the Canberra Office:

Agricultural Industries Structure of Operating Units, Australia (7102.0), annual.

Principal Agricultural Commodities, Australia (Preliminary) (7111.0), annual.

Shearing and Wool Production Forecast, Australia (Preliminary) (7210.0), annual.

Sheep Numbers, Shearing and Wool Production Forecast, Australia (7211.0), annual.

Cereal Grains: Estimates of Area Sown, Australia (7312.0), annual.

Value of Principal Agricultural Commodities Produced, Australia (7501.0), annual.

Selected Agricultural Commodities, Australia (Preliminary) (7112.0), annual.

Livestock and Livestock Products, Australia (7221.0), annual.

Livestock Products, Australia (7215.0), monthly.

Viticulture, Australia (7310.0), annual.

Crops and Pastures, Australia (7321.0), annual.

Fruit, Australia (7322.0), annual.

Agricultural Land Use and Selected Inputs, Australia (7411.0), annual.

Other Publications:

Australian Meat and Livestock Corporation, *Annual Report* Watkins and Murphy, Sydney.

Department of Agriculture, *Annual Report*, Government Printer, Hobart.

Tasmanian Dairy Industry Authority, *Annual Report*, Government Printer, Hobart.

Reid, R.L., *A Manual of Australian Agriculture*, Heinemann, Melbourne, 1981.

Soft Fruit Industry Board, *Annual Report*, Government Printer, Hobart.

Sulyak, T., *The Farmers Handbook*, The Herald and Weekly Times Ltd., Victoria, 1978.