

## 5. General statistics

### A. Prices received by dairy farmers

#### i) Milksolids

Up until the end of the 2000/01 season, dairy farmers received payment from the New Zealand Dairy Board through a system of advance and final payouts via dairy companies. Seasonal supply dairy companies passed on the Dairy Board advance payout to its suppliers in addition to a margin based on dairy company efficiency, product mix and investment policies; together known as the total payout.

The introduction of the *Dairy Industry Restructuring Act 2001* opened the way for New Zealand's largest dairy companies, Kiwi Co-operative Dairy Company (Kiwi) and New Zealand Dairy Group (NZDG) to merge with the Dairy Board to form Fonterra. Further, the Act allowed the smaller dairy companies, such as Tatua and Westland to become separate co-operatives. Consequently, the historic payment system became redundant. Tatua and Westland have now established commercial arrangements for sale of dairy products.

Payments to seasonal supply farmers are still based on the "A+B-C" system, which incorporates payments for milkfat (A) and protein (B) with penalties for milk volume (C). The payment system for suppliers to town supply dairy companies varies between companies. Some town supply payment systems are based on the milk volume only, whereas other payment systems are similar to seasonal supply payment systems, which incorporate components of milkfat, protein and volume.



## General statistics – Prices received by dairy farmers – Milksolids

- Average dairy company payout was \$3.66

The average dairy company total payout (per kilogram of milksolids) received by dairy farmers from seasonal supply dairy companies is shown in Table 5.1. The average payout is given in both nominal and inflation adjusted dollars using the Consumer's Price Index.

Table 5.1 Trend in prices received for milksolids since 1973/74

Season	Average Dairy Company total payout (\$/kg milksolids)	Dairy Company payout (inflation adjusted) <sup>a</sup>
1973/74	0.76	6.73
1974/75	0.75	6.03
1975/76	0.83	5.81
1976/77	0.87	5.22
1977/78	0.98	5.14
1978/79	1.03	4.80
1979/80	1.22	5.07
1980/81	1.52	5.33
1981/82	1.95	5.95
1982/83	2.11	5.50
1983/84	2.09	5.04
1984/85	2.33	5.37
1985/86	2.29	4.52
1986/87	2.03	3.64
1987/88	2.34	3.52
1988/89	3.28	4.63
1989/90	3.59	4.86
1990/91	2.42	3.04
1991/92	3.34	4.09
1992/93	3.66	4.43
1993/94	3.32	3.97
1994/95	3.40	4.02
1995/96	3.99	4.51
1996/97	3.63	4.02
1997/98	3.42	3.75
1998/99	3.58	3.86
1999/00	3.78	4.09
2000/01	5.01	5.31
2001/02	5.35	5.50
2002/03	3.66	3.66

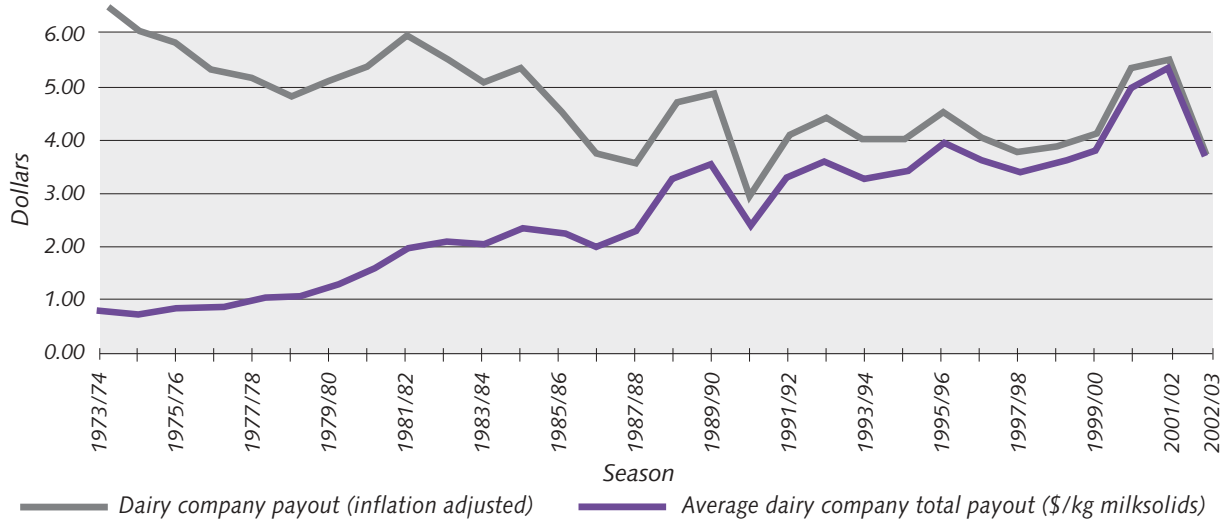
<sup>a</sup> Weighted to give real dollar values using the Consumers Price Index for the end of the June quarter. Sourced from Statistics New Zealand

Note: Average Dairy Company total actual payout for 1974/75 to 1988/89 has been derived from \$/kg milkfat



- Payout drops back to pre-2000/01 levels

Graph 5.1 Trend in milksolids payout to dairy farmers since 1973/74



ii) Dairy farm land sale values

- Average sale price of farms reaches 1.2 million dollars

The average sale price of dairy farms (\$1.21 million) continues to increase compared with previous seasons (Table 5.2). The average dairy farm price per kilogram of milksolids holds steady against last years high.

Table 5.2 Trend in dairy land sale values for the last 20 years

Year	Number of farms	Average sale price (\$)	Inflation adjusted average sale price <sup>a</sup>	Average hectares	Average price per hectare (\$)	Inflation adjusted average price per hectare <sup>a</sup>	Price per kg milkfat <sup>b</sup>	Price per kg milksolids <sup>c</sup>
1983	527	257,373	629,389	46	5,587	13,663	20.4	11.7
1984	618	301,076	703,365	49	6,189	14,459	21.9	12.6
1985	505	298,746	598,582	49	6,044	12,110	21.0	12.1
1986	274	251,165	455,833	47	5,298	9,615	18.4	10.6
1987	504	270,180	412,025	52	5,212	7,948	16.8	9.7
1988	576	278,650	399,423	56	5,013	7,186	16.0	9.2
1989	1,013	325,847	447,225	59	5,561	7,632	17.8	10.2
1990	868	373,553	476,378	58	6,467	8,247	21.8	12.5
1991	538	362,819	450,142	58	6,283	7,795	21.7	12.5
1992	897	446,979	548,974	62	7,183	8,822	23.1	13.3
1993	834	543,984	659,994	61	8,903	10,802	31.0	17.8
1994	784	704,245	845,094	61	11,640	13,968	37.5	21.6
1995	672	775,110	889,311	58	13,400	15,374	41.9	24.1
1996	784	785,510	883,699	60	13,187	14,835	41.6	23.9
1997	520	674,809	750,699	54	12,388	13,781	38.5	22.1
1998	496	704,309	770,250	64	11,076	12,113	32.0	18.4
1999	600	769,606	845,027	72	10,759	11,813	33.1	19.0
2000	576	856,374	921,861	80	10,740	11,561	35.3	20.3
2001	941	1,032,618	1,076,747	74	13,959	14,556	41.2	23.7
2002	704	1,049,939	1,065,465	72	14,658	14,875	45.6	26.2
2003 <sup>d</sup>	340	1,206,841	1,206,841	78	15,463	15,463	46.8	26.9

Source: Quotable Value New Zealand Rural Property Sales Statistics (Table D3)

<sup>a</sup> Adjusted using the Consumers Price Index for the end of the June quarter

<sup>b</sup> Price per kg milkfat has been derived from price per kg milksolids (1996 to current year)

<sup>c</sup> Price per kg milksolids has been derived from price per kg milkfat (1978 to 1995)

<sup>d</sup> Half year only – sales to June 2003

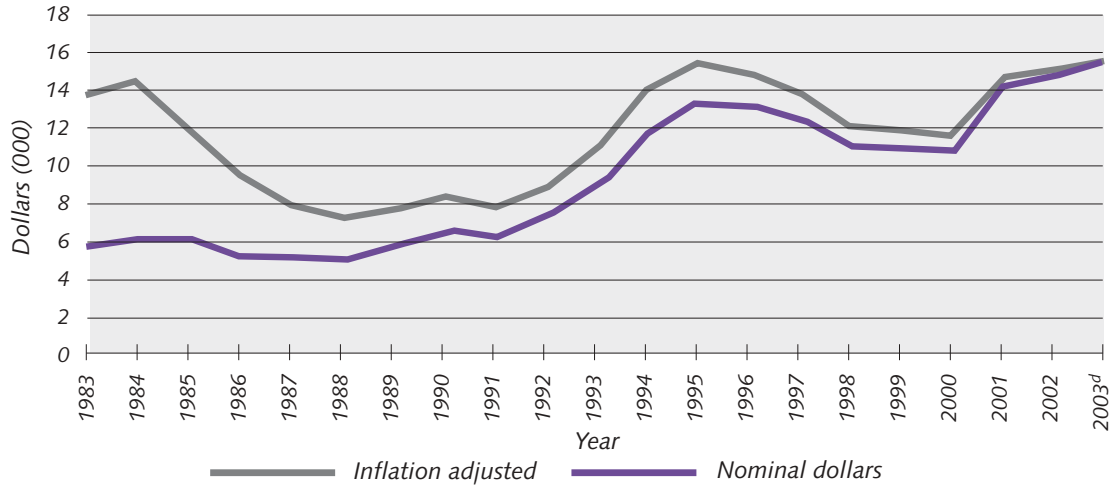


## General statistics – Prices received by dairy farmers – Dairy farm land sale values

- **Increase in nominal price per hectare**

Prior to 1992 the average price per hectare fluctuated considerably, in both real and nominal terms, as shown in Graph 5.2. The average price per hectare rose steeply from 1992 to 1995. Between 1995 and 2000, the average price per hectare decreased. However, this trend reversed decisively in 2001 and the price per hectare is currently \$15,463. These figures are based on the calendar year, not the dairy industry season.

Graph 5.2 **Trend in dairy land values (price per hectare) for the last 20 years**



<sup>d</sup> Half year only – sales to June 2003



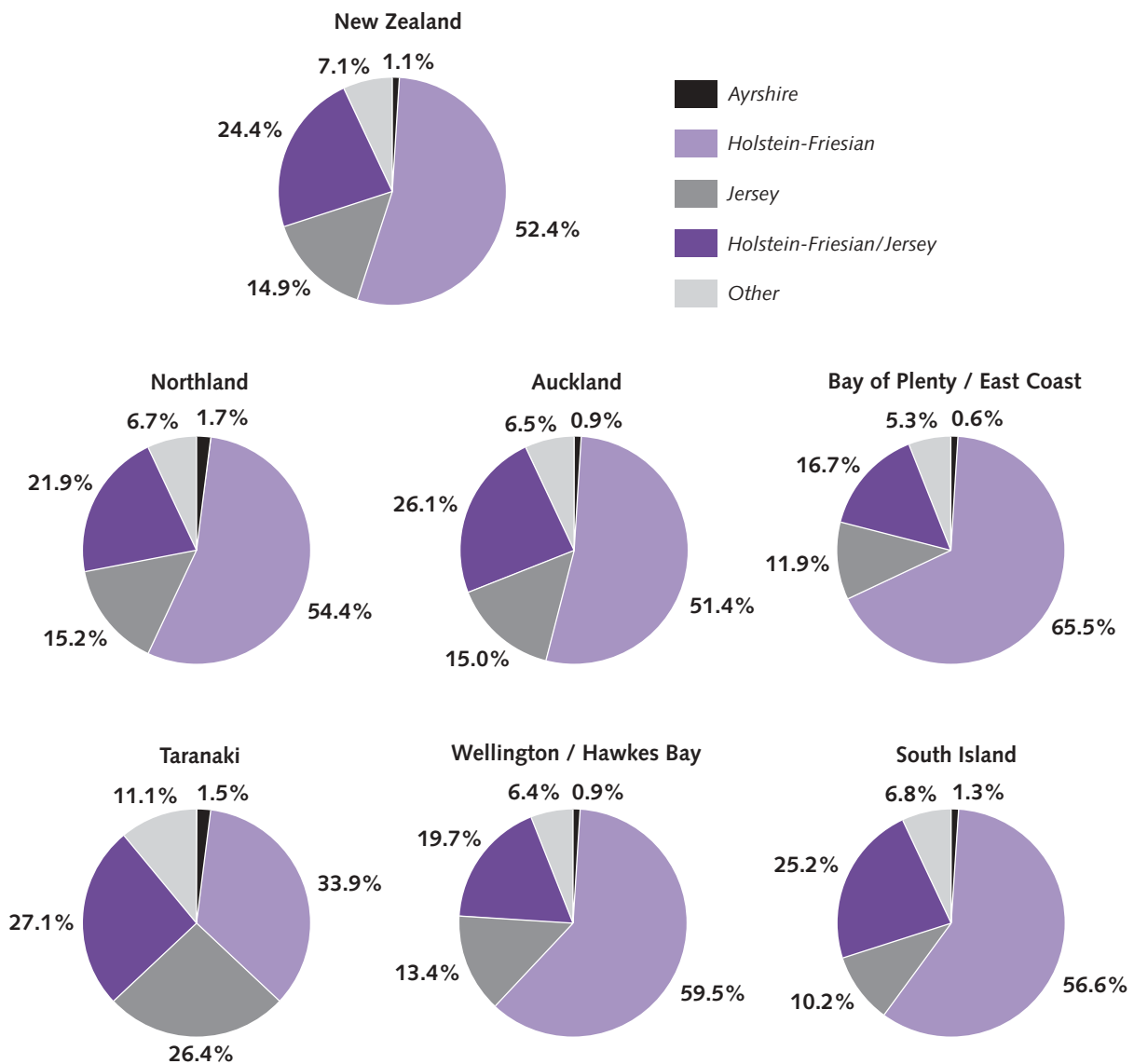
## B. Breed breakdown

Three dairy breeds (Holstein-Friesian, Jersey, and to a lesser extent, Ayrshire) dominate the dairy cow inseminations carried out in New Zealand, as recorded on the Livestock Improvement Database.

The Jersey breed dominated the national dairy herd until the late 1960s. By 1970, Holstein-Friesian was the dominant dairy breed in New Zealand, as a result of changes in farm management practices, and farmers raising larger numbers of dairy calves for beef. Of the other breeds of cattle used to inseminate dairy cows, the main beef breed currently in use is Polled Hereford. Other beef breeds used to a lesser degree include Angus, Belgian Blue, and Simmental. Other breeds of dairy cattle present in smaller numbers in New Zealand include Milking Shorthorn, Guernsey and Brown Swiss. Crossbreed is emerging as a breed in its own right in the insemination of dairy cows.

The percentages of the major dairy breeds for New Zealand and each region are shown in Graph 5.3. Percentages are given for Holstein-Friesian, Jersey, Holstein-Friesian/Jersey Crossbreed and Ayrshire cows with the remaining breeds grouped into "Other". Holstein-Friesian is the prevalent breed in every region, although this is less pronounced in Taranaki. Bay of Plenty/East Coast region continues to have the highest percentage of Holstein-Friesian cows (65.5%), whereas Taranaki has the highest proportion of Jerseys (26.4%) and Holstein-Friesian/Jersey Crossbreeds (27.1%).

Graph 5.3 Breed percentages of cows in each region in 2002/03



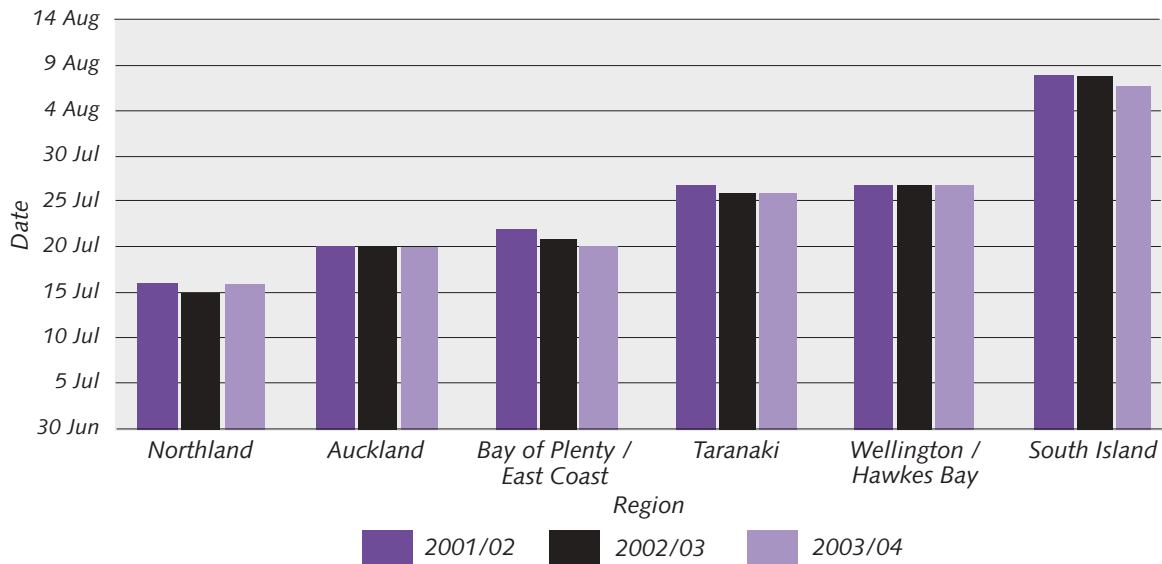
### C. Planned start of calving and median calving dates

The trend in calving dates within and between regions is best shown by the "planned start of calving" date. The planned start of calving date is 282 days from the date mating is started in the herd. The farmer has control over, and the ability to change, the start of mating.

Mating and calving information is recorded on the Livestock Improvement Database for approximately 85% of all herds. Only herds that have matings or calvings recorded for at least 50% of their recorded animals are included in this analysis.

The forecast planned start of calving dates for mature cows for the 2003/04 season compared to the dates previously forecast for 2001/02 and 2002/03 seasons are shown in Graph 5.4.

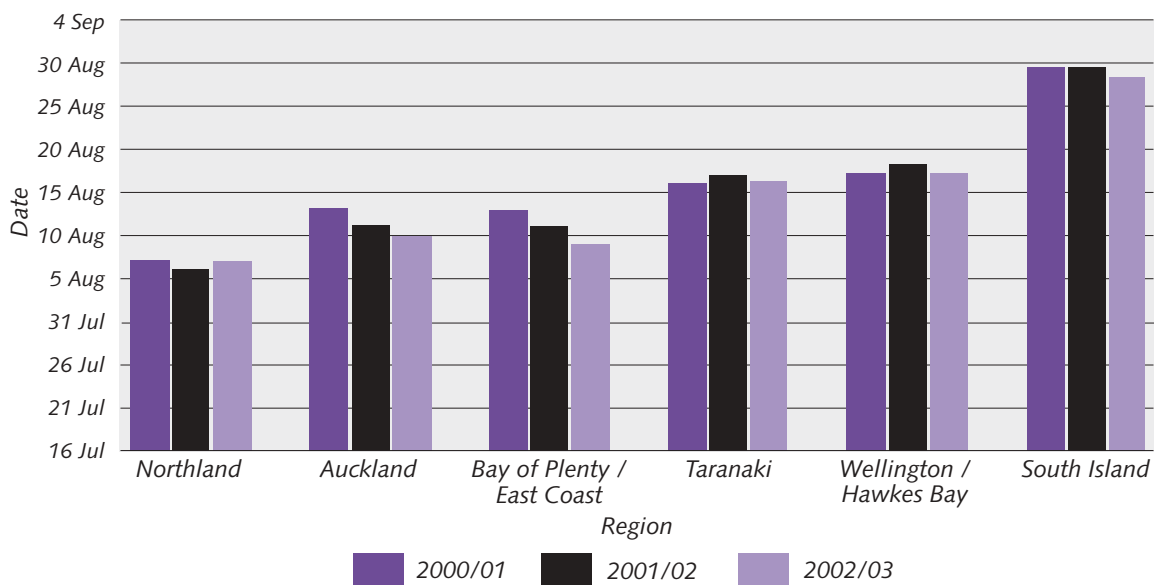
Graph 5.4 Planned start of calving dates for mixed age cows by region



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Calving spread can be controlled to some degree by farm management (for example, cow condition score at calving, level of nutrition in the four to six weeks prior to mating, and the use of CIDR devices and other reproductive technology). The actual start of calving can be meaningless, since the first calving in a herd can be premature, occurring well before the rest of the herd calves. Hence the median calving date is used as an indicator of calving spread. Graph 5.5 compares median calving dates for mature cows for the three most recent seasons.

Graph 5.5 Median calving dates for mixed age cows by region



### D. Operating structures

The main operating structures found on New Zealand dairy farms are owner-operator, sharemilker, and to a lesser extent, contract milker.

Owner-operators are farmers who either own and operate their own farms, or who employ a manager to operate the farm for a fixed wage. Owner-operators receive all the farm income, although they may then have to pay wages. Owner-operators comprise the largest group of all operating structures.

Sharemilking has traditionally been the first step to farm ownership. Sharemilking involves operating a farm on behalf of the farm owner for an agreed share of the farm receipts (as opposed to a set wage). Two types of sharemilking agreement are commonly used: variable order sharemilking agreement, and 50% agreements.

Under the 50% agreement (also called 50/50) the sharemilker owns the herd and any plant and equipment (other than the milking plant) needed to farm the property. The sharemilker is usually responsible for milk harvesting expenses, all stock related expenses, and general farm work and maintenance. The owner is usually responsible for expenses related to maintaining the property. The percentage quoted in a 50% sharemilking agreement usually refers to the proportion of milk income the sharemilker receives. While this percentage is most commonly 50%, it can range from 45% to 55%. Under the 50% agreement the sharemilker receives the agreed percentage of milk income plus the majority of income from stock sales, and the farm owner receives the remaining percentage of milk income.

Unlike the 50% agreement, where the owner may have little to do with farm management, a variable order sharemilking agreement often sees the owner heavily involved in management. The variable order sharemilking agreement involves the farm owner retaining ownership of the herd and bearing more of the farm costs, such as hay-making and animal health. The amount of farm work required by the sharemilker is determined by the individual agreement, with responsibility ranging from herd management only to carrying out all farm work.

Contract milkers are contracted to milk a herd at a set price per kilogram of milksolids produced. The rate is set according to the amount of farm work done. In 2002/03, all farms with contract milkers could not be identified, consequently, any farms with contract milkers are included with owner-operators.



## General statistics – Operating structures

- 37% of all milkers are sharemilkers
- 64% of all sharemilkers are 50/50 sharemilkers, 24% have 20-29% agreements

The number of herds farmed, average herd size, effective area and number of cows per hectare for each of the main operating structures are shown in Table 5.3. In 2002/03, 4,854 (37%) New Zealand dairy farms operated under a sharemilking agreement. Sixty-four percent (3,114) of all sharemilkers have 50/50 agreements. On average, owner-operators tend to farm smaller herds on smaller properties, while variable order sharemilkers tend to farm larger herds on larger properties.

Table 5.3 Herd analysis by operating structure in 2002/03

Operating structure	Number of herds	Percentage of herds	Average herd size	Average effective hectares	Average cows per effective hectare
Owner-operators	8,215	62.5	265	106	2.55
<b>Sharemilkers:</b>					
Less than 20%	96	0.7	453	163	2.83
20-29%	1,150	8.8	321	121	2.74
30-39%	219	1.7	240	98	2.52
40-44%	38	0.3	263	102	2.62
50/50 (45-54%)	3,114	23.7	317	120	2.72
over 54%	237	1.8	314	121	2.70
All sharemilkers	4,854	36.9	316	120	2.71
Unknown	71	0.5	340	122	2.90
<b>All farms</b>	<b>13,140</b>		<b>285</b>	<b>111</b>	<b>2.61</b>

Note: Contract milkers included with owner-operators

Farm production in each of the main operating structure groups is shown in Table 5.4. The table shows that on average, sharemilkers on less than 20% agreements have the highest production per farm, followed by 20-29% and 50/50 sharemilkers.

Table 5.4 Farm production analysis by operating structure in 2002/03

Operating structure	Average litres per farm	Average kg milkfat per farm	Average kg milksolids per farm	Average kg milkfat per effective hectare	Average kg milksolids per effective hectare	Average kg milkfat per cow	Average kg milksolids per cow
Owner-operators	991,567	47,956	84,538	458.2	806	178.5	314
<b>Sharemilkers:</b>							
Less than 20%	1,836,960	89,402	157,655	555.8	979	195.1	344
20 – 29%	1,175,974	57,548	101,155	497.4	872	181.0	318
30 – 39%	839,553	41,970	73,414	442.5	773	174.9	306
40 – 44%	950,671	48,024	83,914	476.6	834	181.3	317
50/50 (45-54%)	1,170,073	57,315	100,868	492.3	864	180.4	317
over 54%	1,150,614	55,702	98,418	488.3	859	180.9	318
All Sharemilkers	1,167,081	57,161	100,568	492.2	864	180.6	317
Unknown	1,344,048	64,698	114,404	557.3	983	191.6	338
<b>All farms</b>	<b>1,058,307</b>	<b>51,447</b>	<b>90,621</b>	<b>471.3</b>	<b>828</b>	<b>179.3</b>	<b>315</b>

Note: Contract milkers included with owner-operators



## General statistics – Operating structures

Changes to the operating structure in the last ten years are minimal. Table 5.5 shows the percentage of herds in each operating structure type, whereas Table 5.6 gives the actual number of herds.

**Table 5.5 Trend in the percentage of herds in each operating structure for the last 10 seasons**

Operating structure	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Owner-operators	57.2	65.7	65.0	63.6	63.1	62.7	62.7	61.8	62.1	62.5
Contract	0.7	0.6	0.8	1.3	1.2	1.1	0.9	0.8	–	–
<b>Sharemilkers:</b>										
29%	0.8	1.1	0.9	0.8	0.8	0.8	0.7	*	*	*
39%	0.7	0.9	0.9	0.7	0.6	0.5	0.5	*	*	*
50%	18.6	24.9	24.5	23.4	24.0	23.7	23.7	24.3	23.7	23.7
Other	4.0	6.8	7.8	9.3	10.2	11.2	11.5	13.1	14.1	13.2
All Sharemilkers	24.1	33.7	34.2	34.3	35.7	36.2	36.4	37.3	37.8	36.9
Unknown	18.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.1	0.5

– Included with owner-operators

\* Included in "Other"

From 1989/90 owner-operators includes leased farms

**Table 5.6 Trend in the number of herds in each operating structure for the last 10 seasons**

Operating structure	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Owner-operators	8,344	9,627	9,581	9,368	9,263	9,005	8,694	8,592	8,476	8,215
Contract	97	84	121	195	172	154	126	113	–	–
<b>Sharemilkers:</b>										
29%	118	158	133	120	124	114	98	*	*	*
39%	108	138	138	108	95	76	66	*	*	*
50%	2,714	3,642	3,614	3,455	3,522	3,403	3,280	3,372	3,240	3,114
Other	583	994	1,149	1,367	1,497	1,610	1,597	1,815	1,924	1,740
All Sharemilkers	3,523	4,932	5,034	5,050	5,238	5,203	5,041	5,187	5,164	4,854
Unknown	2,633	6	0	128	0	0	0	0	9	71
<b>Total</b>	<b>14,597</b>	<b>14,649</b>	<b>14,736</b>	<b>14,741</b>	<b>14,673</b>	<b>14,362</b>	<b>13,861</b>	<b>13,892</b>	<b>13,649</b>	<b>13,140</b>

– Included with owner-operators

\* Included in "Other"

From 1989/90 owner-operators includes leased farms

