



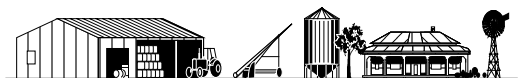
An Australian Government Initiative



Occupational Health and Safety Risk in the Australian Dairy Industry

The Facts – 2007

Facts and Figures on Farm Health and Safety Series #9



Australian Centre for Agricultural Health and Safety

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Occupational Health and Safety Risk in the Australian Dairy Industry – The Facts

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Foreword

Agriculture and horticultural enterprises produce commodities of more than \$30 billion value per annum on around 135,000 enterprises spread across all states of Australia.

High rates of serious injury and deaths on Australian farms are of concern to agricultural industry agencies, farmers and farm enterprises and federal and state governments.

This document has been produced to provide guidance to those agencies and individuals who are working to reduce risk associated with dairy production in Australia. It is the ninth in a series on facts and figures on farm health and safety.

This project was funded by the RIRDC managed Joint Research Venture in Farm Health and Safety which is partnered by the Grains R&D Corporation, Meat and Livestock Australia, Australian Wool Innovation, Cotton R&D Corporation, Sugar R&D Corporation and the Rural Industries Research & Development Corporation.

This report, an addition to RIRDC's diverse range of over 1600 research publications, forms part of our Joint Research Venture in Farm Health and Safety R&D program, which focuses on the adoption of improved systems for Farm Health and Safety.

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Peter O'Brien

Managing Director

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Executive Summary

What this report is about

This report presents facts and figures on the risks involved in Australia's dairy industry.

Who this report is aimed at

This report has been produced to provide guidance to those agencies and individuals who are working to reduce risk in the dairy industry. It is also targeted at educators and developers of public and industry policy to improve safety.

Background

Farmsafe Australia, the national association of agencies with a commitment to reducing injury risk on Australian farms, will work with the Dairy Industries Reference Group to maintain a national program to reduce health and safety risk for dairy farmers, workers, contractors and visitors.

Objectives

The objective of this document was to present the facts and figures on the risks involved in Australia's dairy industry.

Methods

Information for the document was collated from current data available to the National Farm Injury Data Centre and from Victorian research.

Results

The key findings are as follows:

- A minimum of 17 work related deaths have occurred on dairy farms over the past nine years.
- Injuries associated with mobile plant and transport, environmental and animal agents comprise a high proportion of injuries in the dairy industry, compared to all agriculture combined.
- Of all dairy industry workers' compensation claims, 26.5 percent of injuries were inflicted by cattle.

Implications

This document will provide guidance to agencies and individuals working to reduce risk associated with the dairy industry in Australia. The publication is available electronically for use by educators and those whose role is the development of public and industry policy to improve safety.

Recommendations

It is recommended that:

- This document is used to provide guidance to agencies and individuals working to reduce risk in Australia's dairy industry.
- Safety programs in the dairy industry should take into consideration motor vehicle, machinery and accidental falls injury rates along with injury associated with cattle handling.
- Dairy producers should address the safe use and handling of motorcycles, including ATVs and tractors associated with work in the dairy industry.
- There is a need for improved milking and animal handling systems in the dairy cattle industry, where cattle are handled at close proximity.
- Dairy farm owners and managers need to ensure that all workers are protected from damaging noise levels.



1. Introduction

Agriculture and horticulture enterprises produce commodities of more than \$30 billion value per annum on around 135,000 enterprises spread across all states of Australia. However, that production is associated with a high cost in terms of human injury. High rates of serious injury and deaths on Australian farms are of concern to agricultural industry bodies, farmers, workers and farm enterprises and federal and state governments.

Farmsafe Australia, the national association of agencies with a commitment to reducing injury risk on Australian farms, will work with the Dairy Industries Reference Group to maintain a national program to reduce health and safety risk for dairy farmers, workers, contractors and visitors.

Strategic approaches to reducing on farm injury risk are multifaceted and include:

- identifying elimination and substitution options
- improving design and engineering solutions
- administrative or work practice solutions, including education and skills development
- identification of requirements for personal protective clothing and equipment
- identification of incentives for adoption of improved systems
- ensuring compliance with regulatory requirements for supply of safe plant and equipment and safe operation in the farm workplace.

This document summarises current data available to the National Farm Injury Data Centre and from Victorian research. It has been produced to provide guidance to agencies and individuals working to reduce risk associated with the dairy industry in Australia. The publication is available electronically for use by educators and speakers and those whose role is the development of public and industry policy to improve safety.

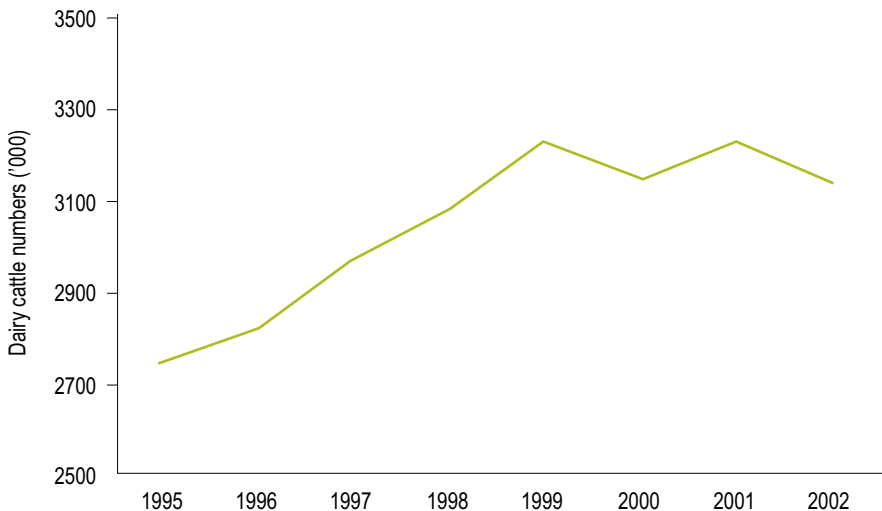
2. Dairy cattle industry in Australia

The dairy cattle industry is the third most important rural industry in Australia with a farmgate value of \$3.2 billion in 2004/05, and the fourth most important industry in annual exports (\$2.6 billion in 2004/05) (Dairy Australia, 2005).

Most of Australia's dairy herd (61 percent) is located in Victoria, with New South Wales and Queensland together accounting for 22 percent and Tasmania about 7 percent (ABS, 2004). In 2002 there were an estimated 3.1 million cattle on around 11,000 properties across Australia (ABS 2002) (see Figure 1). For the year 2004/05 the national dairy herd stood at just over 2 million milking cows (Dairy Australia, 2005).

The Australian dairy industry involves around 100,000 people through farming (9,266 farms employing about 50,000 people), services to farming (an estimated 10,000 people), manufacturing (estimated at up to 30,000 people), transport and research activities. Over half (52 percent) of Australia's dairy farm businesses rely solely on family labour (Dairy Australia, 2005).

Figure 1: Trend in dairy cattle numbers, Australia 1995–2002



Source: ABS (2002)

Table 1: Establishments undertaking agricultural activity, Australia 30 June 2004

	NSW	VIC	QLD	SA	WA	TAS	NT	ACT	Aust.
Horticulture	5 181	4 558	3 970	3 697	1 839	888	146	8	20 288
Grain growing	3 717	3 143	1 530	3 528	2 673	21	2	–	14 614
Grain-sheep/beef cattle	6 983	2 796	1 409	2 271	2 783	64		2	16 308
Sheep-beef cattle	3 719	2 368	745	910	460	318		22	8 541
Sheep farming	5 084	3 402	274	1 406	1 241	583	–	28	12 018
Beef cattle farming	11 626	7 809	11 505	1 248	1 930	1 154	205	23	35 501
Dairy cattle farming	1 439	6 412	1 120	503	342	542	1	–	10 359
Poultry farming (meat)	309	217	122	60	59	14	1	–	781
Poultry farming (eggs)	174	118	63	36	59	19	3	1	474
Pig farming	238	168	258	123	57	25	2	–	870
Horse farming	615	379	541	65	89	65	1	2	1 757
Livestock nec.	221	276	155	64	67	14	3	1	802
Sugar cane growing	514	–	4 039	–	7	–	–	–	4 560
Cotton growing	229	–	337	–	–	–	–	–	566
Crop/plant nec.	242	575	560	165	87	73	9	–	1 710
Total agriculture	40 292	32 224	26 627	14 077	11 692	3 781	373	87	
Other industries#	531	242	158	224	252	99	12	2	2 174
Total	40 827	32 463	26 785	14 238	11 876	3 866	382	88	130 526

Source: Australian Bureau of Statistics. *Agricultural Commodities, Australia, 20032–04 (7121.0)*.

Note: + = includes additional establishments, number unreliable # = industries whose main activity was not agricultural

3. Injury deaths of farmers and farm workers – all agriculture sectors

Table 2 indicates the causes of non-intentional injury death of those persons whose occupation at time of death was farmer, farm manager or farm worker, for the years 1999 to 2002, and covers claims from all agricultural industries including beef cattle enterprises. Dairy farm related deaths are not able to be extracted separately. The data does not include others of other occupational group who died on farms due to injury such as students, tradespersons, children or other visitors or contractors in the farm workplace and does include injury deaths associated with on-road transportation accidents.

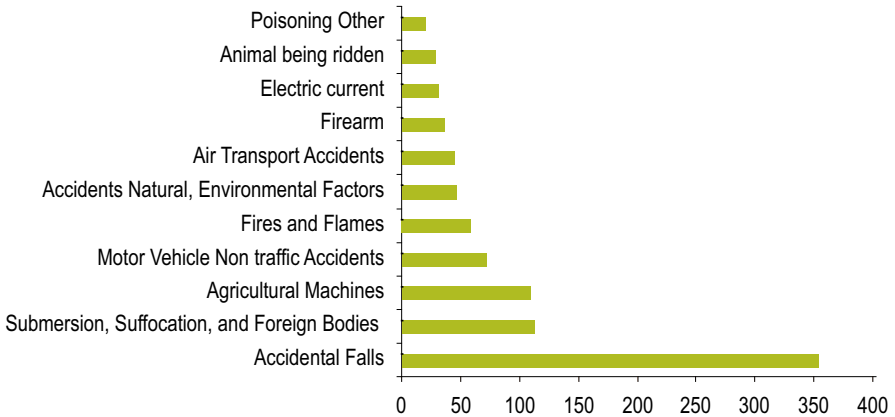
Table 2: Causes of injury deaths of those whose occupation was farm manager or agricultural worker, Australia 1999–2002 (ICD 10-AM)

Code No	Descriptions	99	00	01	02	Z	%
V01–09	Pedestrian injured in transport accidents	8	14	15	7	44	5.3
V10–19	Pedal cyclist injured in transport accidents	0	0	1	0	1	0.1
V20–29	Motor cycle rider injured in transport accidents	9	4	10	10	33	4.0
V30–39	Occupant of three wheeled motor vehicle injured in transport accident	0	0	1	0	1	0.1
V40–49	Car occupant injured in transport accident	50	57	54	68	229	27.8
V50–59	Occupant of pick-up truck or van injured in transport accident	2	1	7	0	10	1.2
V60–69	Occupant of heavy transport vehicle injured in transport accident	1	1	1	2	5	0.6
V80–89	Other land transport accidents	27	12	19	19	77	9.3
V80	<i>Animal ridden</i>	1	1	2	1	5	0.6
V84	<i>Special vehicle mainly used in agriculture (tractors)</i>	10	7	10	6	33	4.0
V86	<i>Special all-terrain vehicle(ATV)</i>	5	2	5	8	20	2.4
V90–94	Water transport accidents	0	3	1	2	6	0.7
V95–97	Air and space transport accidents	2	3	5	1	11	1.3
W00–19	Falls	15	10	25	13	63	7.6
W20–49	Exposure to inanimate mechanical forces	17	19	8	17	61	7.4
W20	<i>Struck by thrown, projected or falling object</i>	6	5	4	5	20	2.4
W23	<i>Caught, crushed, jammed, pinched in or between objects</i>	1	1	1	1	4	0.5
W25	<i>Contact with sharp glass</i>	0	0	0	1	1	0.1
W29	<i>Other powered hand tools & household machinery</i>	0	0	0	1	1	0.1
W30	<i>Contact with agricultural machinery</i>	3	5	2	3	13	1.6
W31	<i>Contact with other and unspecified machinery</i>	0	1	1	1	3	0.4
W33–34	<i>Firearms</i>	6	6	0	4	16	1.9
W50–64	Exposure to animate mechanical forces	3	0	2	0	5	0.6
W65–74	Accidental drowning & submersion	5	4	11	5	25	3.0
W75–84	Other accidental threats to breathing	3	5	3	8	19	2.3
W85–99	Exposure to electric current, radiation & external ambient air temperature & pressure	1	2	3	2	8	1.0
X00–X09	Exposure to fire, smoke & flames	4	5	8	6	23	2.8
X10–X19	Contact with heat & hot substances	0	0	0	1	1	0.1
X20–29	Contact with venomous animals & plants	1	0	1	1	3	0.4
X30–39	Exposure to forces of nature	1	2	0	1	4	0.5
X40–49	Accidental poisoning	16	9	9	4	38	4.6
X50–57	Overexertion, travel & privation	0	1	0	0	1	0.1
X58–59	Accidental exposure to other & unspecified factors	28	38	26	42	134	16.2
Y85–89	Sequelae of external causes of morbidity & mortality	5	2	7	2	16	1.9
	Total	199	192	217	211	818	100

Source: NFIDC (2003) ABS Mortality Data (HOIST NSW Health)

Figure 2 demonstrates the relative contribution of causes of injury deaths of farmers and farm workers, excluding road traffic injury for the earlier period 1990–1998. This data excludes all road traffic injury.

Figure 2: Causes of non-intentional injury deaths* of farmers and farm workers, Australia 1990–1998 (n=912)



Source: NFIDC ABS Deaths Database (HOIST NSW Health)

*Excludes road traffic deaths, medical misadventure and poisoning by medicinals

Although the proportion of these deaths relating specifically to dairy producers or workers is not known, many of the injury risks are shared in common between specific groups in the agriculture sector, and hence the available data should be considered to be broadly relevant to the dairy cattle industry.

Safety programs in the dairy industry should take into consideration motor vehicle, machinery and accidental falls injury rates along with injury associated with cattle handling.

4. Deaths on dairy cattle properties

In 1989/92, Table 3 shows age and work status of non-intentional traumatic deaths on Australian dairy farms where 19 fatalities occurred over the four-year period, and nearly half of the fatalities occurred to children under the age of 15. Deaths were associated a number of agents, the main ones being farm vehicles and bodies of water. Six deaths were caused by drowning, four of which occurred to children.

This equates to 4.75 deaths per annum. Taking the annual gross value of milk production of the dairy industry for 2001/02, this equates to 4.75 deaths per \$2.8 million (ABS 2002), or 1.7 deaths per \$1 million gross value product.

Recent data from the National Coroner’s Information System Data Base Search on Dairy-related Deaths (cited in Victorian Farm Safety Centre, 2005) also suggests that the number of fatalities on dairy farms remains more than four deaths per year.

Table 3: Dairy farm fatalities, by age group and work status, Australia 1989–1992

Age group	Working	Bystander	Total	%
0–4	0	5	5	26.3
5–14	2	4	6	31.6
15–24	3	0	3	15.8
25–44	3	0	3	15.8
45–74	2	0	2	10.6
Total	10	9	19	100

Source: Franklin et al (2000)

Table 4: Agent associated with dairy farm fatality, by work status, Australia 1989–1992

Agent	Working	Bystander	Total
Farm vehicles	3	3	6
<i>Truck</i>	(1)	(0)	(1)
<i>Utility</i>	(1)	(0)	(1)
<i>ATV</i>	(1)	(0)	(1)
<i>Trailer</i>	(0)	(3)	(3)
Mobile farm machinery	1	1	2
<i>Fertiliser spreader</i>	(1)	(0)	(1)
<i>Other</i>	(0)	(1)	(1)
Fixed plant and equipment	1	0	1
Farm structures	3	5	8
<i>Dam</i>	(1)	(3)	(4)
<i>Irrigation channel</i>	(0)	(1)	(1)
<i>Other</i>	(2)	(1)	(3)
Other	2	0	2
Total	10	9	19

Source: Franklin et al (2000)

A major change since the above period is the increased use of all-terrain vehicles, which at time of publication are associated with approximately 10 on-farm deaths per annum.

5. Work-related deaths on dairy cattle properties

In the period 1994/95 to 1999/00 there were 14 fatal case workers' compensation claims made in the dairy industry and one case for the period 2001–2003 (incomplete year) (see Table 5). Vehicles, tractors, motorcycles and production machinery and materials remain a risk on dairy farms.

Table 5: Number of fatal case workers' compensation claims in the dairy industry, by agent and mechanism, Australia 1994/95–2003p

Breakdown agent	Falls, trips & slips of a person	Hitting objects with a part of the body	Being hit by moving objects	Body stressing (strain)	Chemical	Other & unspecified	Total
Machinery & fixed plant							
Other unspecified production machinery	–	–	2	–	–	–	2
Mobile plant & transport							
Truck/semitrailer/lorry	–	–	–	–	–	1	1
Car/ute/van	–	1	–	–	–	1	2
Motorcycle/trailbike/ATV	1	–	–	–	–	1	2
Tractor	–	–	2	–	–	1	3
Chemicals & materials							
Industrial gases/fumes	–	–	–	–	2	–	2
Stockfeed	–	–	–	–	1	–	1
Outdoor environmental agency	–	–	–	–	–	1	1
Unspecified	–	–	–	1	–	–	1
Total	1	1	4	1	3	5	15

Source: NOSI1 & NOSI2 Databases, NOHSC website June 2005, travel claims excluded

A search of the NFIDC All Terrain Vehicle (ATV) Deaths Register database revealed an additional two work-related ATV deaths occurring on dairy farms for the years 2002–2004 (NFIDC, 2006) which were not included in the workers compensation system.

Including this data, a minimum of 17 work-related deaths have occurred on dairy farms over the past 9 years, which equates to at least two work-related fatalities a year.

6. Workers’ compensation claims – agriculture sector

Australia-wide there were 4,205 workers’ compensation claims in the year 2002 for injury in the agriculture sector where absence from work was one week or more. Of these, 247 (nearly 6 percent) were in the dairy industry. Eighty-one percent of dairy industry claims were filed by males. A grand total of 290 claims were made including claims of absences of less than a week.

The incidence rate for injury in the dairy industry was one of the lowest of all agricultural industry groups, but remains higher than all industries combined.

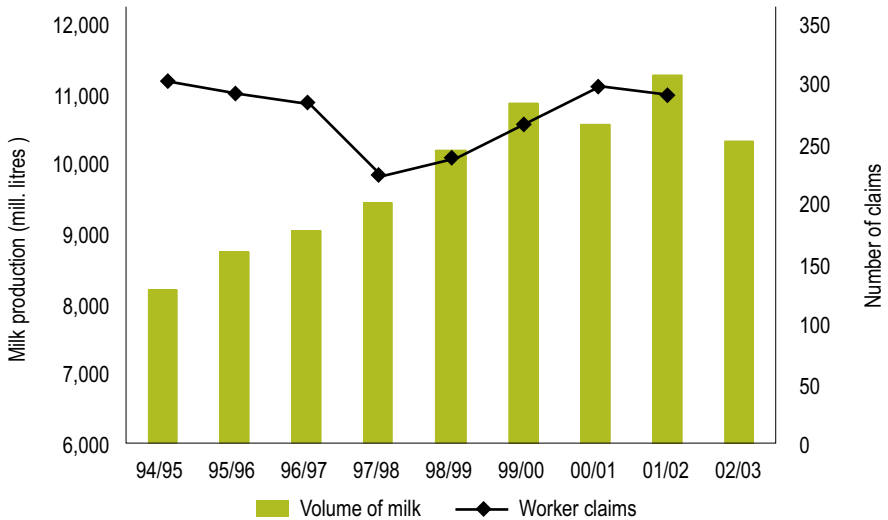
Table 6: Incidence of workers’ compensation claims*, Australia 2002 (/1000 workers)

Industry	Incidence per 1000 workers		
	Female	Male	Total
Horticulture & Fruit Growing	15.9	22.8	20.3
Grain, Sheep & Beef Cattle Farming	7.8	28.1	23.3
Dairy Cattle Farming	11.8	24.0	19.9
Poultry Farming	38.6	33.9	35.6
Other Livestock Farming	53.5	76.5	68.5
Other Crop Growing	35.1	34.1	34.3
All agriculture	15.7	27.8	24.2
All industries	11.6	22.5	17.4

Source: NOSI2 Databases, NOHSC website June 2005

*Duration of absence was greater than one week & travel claims excluded

Figure 3: Number of workers' compensation claims* and milk production# for the dairy industry, Australia (1994/95–2001/02)



Source: (a) NOSI&2 Databases, NOHSC website (June 2005) (Note: *travel claims excluded, NOSI2 data provided as calendar year 2001 & 2002) (b) ABS (2002) (Milk production based on whole milk intake by factories)

Developments in milking technology and shed design have enabled huge changes in the efficiency and size of farms thereby reducing labour input per unit of milk produced.

7. Workers' compensation claims – agent of injury

Information describing the agent of injury, occupation and associated mechanism of injury for workers' compensation claims for the period 2001 to 2003 (incomplete year) is available for the dairy industry across Australia.

Table 7 compares the number of claims for each agency in the dairy industry and with all agriculture. Injuries related to *animal, human and biological* agencies were associated with nearly 30 percent of claims.

Table 7: Workers' compensation claims in the dairy cattle industry, by agent of injury, Australia 2001–2003p

Agency	Dairy industry claims		Total claims all agriculture (n=12,827)
	n	%	%
Machinery and (mainly) fixed plant	46	6.1	6.6
Mobile plant and transport	142	18.7	14.8
Powered equipment, tools and appliances	np	np	2.2
Non-powered hand tools, appliances and equipment	78	10.3	17.7
Chemicals and chemical products	6	0.8	0.9
Materials and substances	55	7.3	9.2
Environmental agencies	150	19.8	18.0
Animal, human and biological agencies	222	29.3	18.5
Other and unspecified agencies	55	7.3	12.1
Total	758	100	100

Source: NOSI2 Database, NOHSC website June 2005, 2003p=incomplete year

Note: Duration of absence was greater than one week, and commuting claims are excluded

Injuries associated with mobile plant and transport, environmental and animal agents comprise a higher proportion of injuries in the dairy industry, compared to all agriculture combined. Analysis of these agency groups are broken down into more detail in the following pages.

8. Workers' compensation claims – mobile plant and equipment

Table 8 indicates workers' compensation claims in the dairy industry for the period 2001 to 2003 (incomplete year) associated with mobile plant and transport. The main breakdown agency was *road transport*. Tractors were associated with 24 claims (3.2 percent of all claims) and roughly 10 percent of all claims were associated with motorcycles (which include ATVs). Motorcycle injuries primarily involved lower limbs and resulted in fractures (35 percent) and sprains (25 percent).

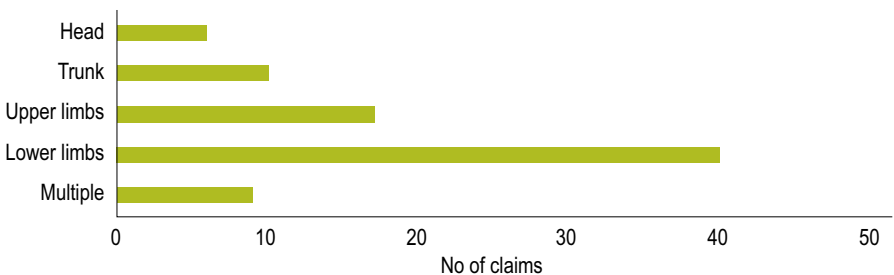
Table 8: Workers' compensation claims in the dairy industry associated with mobile plant and transport, by mechanism of injury, Australia 2001–2003p

Breakdown Agency	Falls, trips & slips of a person	Hitting objects with a part of the body	Being hit by moving objects	Body stressing	Heat radiation & electricity	Other & unspecified	Total
Road transport	14	np	13	6	np	52	91
<i>Motorcycles*, sidecars, scooters, trailbikes</i>	(8)	(np)	(10)	(np)	(np)	(46)	(75)
<i>Cars, station wagons, vans, utilities</i>	(0)	(np)	(np)	(0)	(0)	(np)	(7)
Semi-portable plant	0	np	np	np	0	0	6
Self-propelled plant	0	0	np	0	0	0	np
Other mobile plant	11	np	9	6	0	np	34
<i>Tractor</i>	(12)	(np)	(np)	(np)	(0)	(np)	(23)
Other transport	7	np	0	0	0	0	11
Total	32	16	26	15	np	55	145

Source: NOSI2 Database, NOHSC website June 2005, 2003p=incomplete year

Note: Duration of absence was greater than one week & travel claims are excluded *Includes ATVs np Less than 5 cases

Figure 4: Worker's compensation claims in the dairy industry associated with motorcycles and ATVs, by body location of injury, Australia 2001–2003p



Source: NOSI2 Database, NOHSC website June 2005

Note: Duration of absence was greater than one week & travel claims are excluded

Dairy producers should address the safe use and handling of motorcycles, including ATVs, and tractors associated with work in the dairy industry.

9. Workers' compensation claims – animal injury

Table 9 shows workers' compensation claims in the dairy industry for the period 2001 to 2003 (incomplete year) associated with animal, injury. The prime mechanism of injury was *being hit by moving objects* (70 percent). Of all dairy industry claims (n=758), 26.5 percent of injuries were inflicted by cattle.

Cattle-related injuries occurred mainly to the upper limbs, particularly the hands and fingers (33 percent) (Figure 5). Injuries were primarily *fractures* (40 percent) and *sprains/strains* (30 percent).

Table 9: Workers' compensation claims in the dairy industry associated with animal, human and biological agencies, by mechanism of injury, Australia 2001–2003p

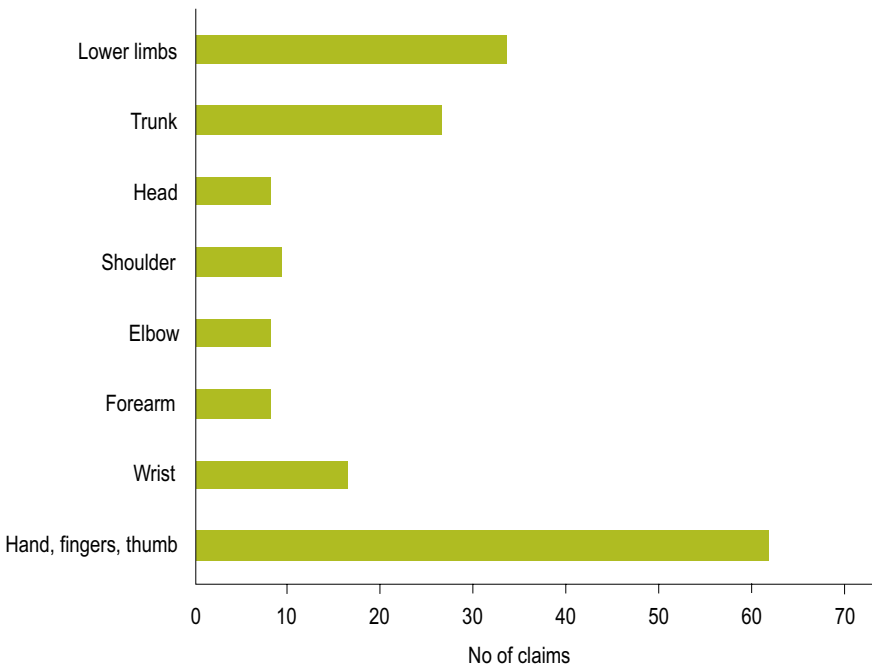
Breakdown Agency	Falls, trips & slips of a person	Hitting objects with a part of the body	Being hit by moving objects	Body stressing	Sound & pressure	Biological factors	Other & unspecified mechanisms	Total
Live four- legged animals	9	np	140	29	np	11	np	201
<i>Cattle</i>	(8)	(np)	(136)	(25)	(np)	(10)	(np)	(185)
Other live animals	0	np	6	0	0	0	0	7
Non-living animals	0	0	np	np	0	0	0	np
Human agencies	0	np	6	0	0	np	0	14
Biological agents	0	0	0	0	0	np	0	np
Total	9	7	153	35	np	13	np	229

Source: NOSI2 Database, NOHSC website June 2005, 2003p=incomplete year

Note: Duration of absence was greater than one week & travel claims are excluded np=Less than 5 cases



Figure 5: Worker's compensation claims in the dairy industry associated with cattle, by body location of injury, Australia 2001–2003p



Source: NOSI2 Database, NOHSC website June 2005

Note: Duration of absence was greater than one week & travel claims are excluded

The above data demonstrates the need for improved milking and animal handling systems in the dairy cattle industry, where cattle are handled at close proximity.

10. Workers' compensation claims – working environment

Table 10 indicates workers' compensation claims in the dairy industry for the period 2001 to 2003 (incomplete year) associated with environmental agencies. The main mechanism of injury was *falls, trips and slips* of workers in both indoor and outdoor work environments. Injuries were primarily to upper and lower limbs, and resulted in sprains (nearly 50 percent) and fractures (29 percent).

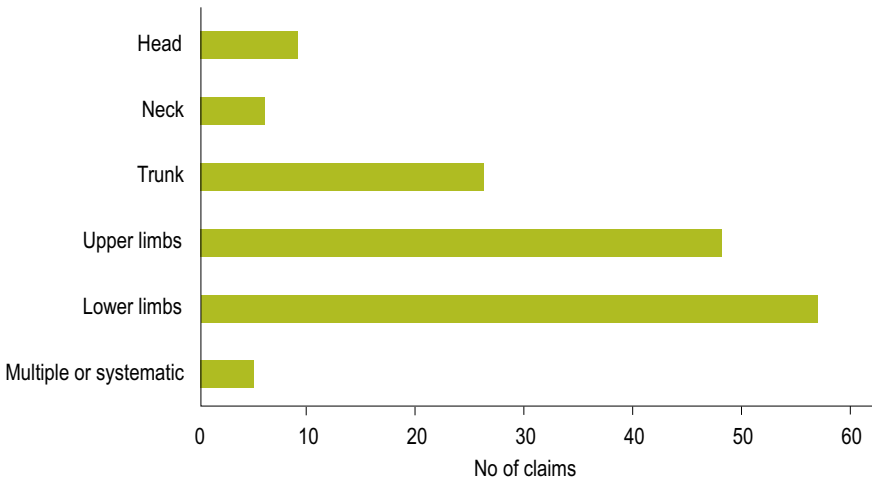
Table 10: Workers' compensation claims in the poultry industry associated with environmental agencies, by mechanism of injury, Australia 2001–2003p

Breakdown Agency	Falls, trips & slips of a person	Hitting objects with a part of the body	Being hit by moving objects	Body stressing	Other & unspecified	Total
Outdoor environment	75	6	14	10	17	122
<i>Holes in the ground</i>	(13)	(0)	(0)	(np)	(np)	(17)
<i>Wet, oily or icy surfaces</i>	(14)	(0)	(0)	(np)	(np)	(20)
<i>Hazardous objects</i>	(13)	(np)	(0)	(np)	(np)	(19)
<i>Other traffic & ground surfaces</i>	(28)	(0)	(np)	(0)	(0)	(9)
<i>Fencing</i>	(np)	(np)	(7)	(np)	(np)	(21)
<i>Other</i>	(np)	(0)	(np)	(0)	(np)	(6)
Indoor environment	20	0	0	np	0	26
Total	95	6	14	11	22	148

Source: NOSI2 Database, NOHSC website June 2005, 2003p=incomplete year

Note: Duration of absence was greater than one week & travel claims are excluded np=Less than 5 cases

Figure 6: Worker's compensation claims in the dairy industry associated with environmental agencies, by body location of injury, Australia 2001–2003p



Source: NOSI2 Database, NOHSC website June 2005, 2003p=incomplete year

Note: Duration of absence was greater than one week & travel claims are excluded

11. Workers' compensation claims – occupation

Table 11 shows that the greatest number of workers' compensation claims in the dairy industry for the period 2001 to 2003 (incomplete year) were submitted by labourers and related workers (76 percent).

Table 11: Workers' compensation claims in the dairy industry by occupation and agent of injury, Australia 2001–2003p

Agency	Managers & administrators	Trade persons	Production & transport workers	Labourers & related workers	Professionals, clerks, sales and service	Total
Machinery & (mainly) fixed plant	10	np	0	28	0	43
Mobile plant & transport	33	11	np	96	np	146
Powered equipment, tools & appliances	0	np	0	np	0	7
Non-powered hand tools, appliances & equipment	14	6	np	54	0	79
Chemicals & chemical products	np	0	0	7	0	8
Materials & substances	6	8	0	37	0	51
Environmental agencies	24	13	0	113	0	150
Animal, human & biological	38	19	0	156	7	220
Other	10	8	np	39	np	59
Total	136	73	7	534	13	763

Source: NOSI2 Database, NOHSC website June 2005, 2003p=incomplete year

Note: Duration of absence was greater than one week & travel claims are excluded np=Less than 5 cases

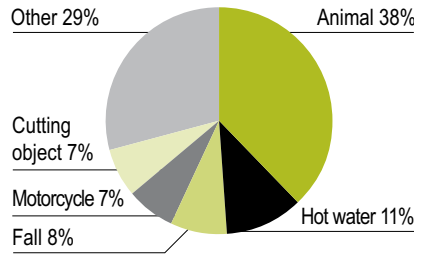
12. Dairy farm studies

Victorian Injury Surveillance System (VISAR)

Analysis of Victorian Emergency Department presentations for the year 1995 by Day (1996) found that cattle were the prime cause of injury of dairy farms (see Figure 7) and that hand and finger injuries were common (31 percent). Burns from hot water were also identified as a major injury risk.

The Victorian Farm Safety Centre (2005) reports on VISAR data for the period July 1999 to June 2004 that records 102 injury cases presenting to Victorian hospitals following injury in a cowshed. The major injuries included cow-related injury (20 percent), being struck by objects (20 percent), scalds and burns (17 percent) and falls (14 percent). Two thirds of the cases were male and the 15 to 19 year old age group was over represented.

Figure 7: Common external cause of injury on Victorian dairy farms, 1995 (n=113)



Source: Dairy Farm Injury in Victoria (Day, 1996)

Surveys

A survey of Victorian farmers (Day & Stathakis, 2004) investigated self reported injury rates and changes in farm safety practices between 1998 and 2001. The results revealed that Victorian dairy farmers had a higher level of participation in, and recall of, farm safety programs compared to other Victorian commodity groups. While the total number of injuries recalled by dairy workers was higher, the rate of injury per 100,000 hours worked was lower than other industries (Day & Stathakis) (Table 12).

Table 12: Self-reported serious work-related injury rates (per 1000,000 hours worked), VIC 1998 and 2001

Industry	1998		2001		Change in injury rate %
	Number of farmers surveyed	Injury rates per 100,000 hrs worked	Number of farmers surveyed	Injury rates per 100,000 hrs worked	
Milk cattle	280	7.9	309	7.5	- 5.1
Meat cattle	209	17.1	355	16.4	- 4.1
Cereal Grains	194	8.6	161	8.5	- 1.2
Sheep	286	10.8	193	10.9	+ 0.9
All farms	1 223	8.5			

Source: Dairy Farm Injury in Victoria (Day, 1996)



A National Milk Harvesting Centre survey (cited in Victorian Farm Safety Centre, 2005) of 301 dairy farms in Australia conducted in 2004, found that 40 farmers reported an injury in the previous 12 months to themselves or their staff. Twenty two injuries were significant enough to miss milking and 17 injuries resulted in a week or more off work.

The above data substantiates national data shown elsewhere in this document, although burns from hot water were associated with only 1.3 percent of all workers' compensation claims in the Australian dairy industry for the periods 1994/95, 1999/00 and 2001 to 2003p. This difference is most likely explained by differences in the two data sources.

13. Noise and hearing loss

Noise on farms has been well established as posing risk of noise induced hearing loss and tinnitus in farmers and farm workers. No measured noise levels for cattle handling activity are available. The following table indicates the noise levels with recommended exposure limits for a range of relevant activities on rural properties.

Table 13: Average noise levels and recommended exposure limits for common farm machinery and activities

Machinery/worker position during normal operating conditions	Noise level at operator's ear Average & Range (95% CI) L _{Aeq} dB(A)	Recommended exposure limits without hearing protection. NB: Noise exposure risk for each activity in the day is cumulative toward the overall noise exposure risk. **.
Air compressors	86 (77– 95)	7 hrs (15 mins – 8 hrs+)
All terrain vehicles (ATVs)	86 (84 – 87)	7 hrs (4 – 8 hrs)
Angle grinders	98 (96 – 100)	20 mins (15 – 30 mins)
Others in workshop	90 (87 – 93)	2 hrs (1 – 5 hrs)
Augers	93 (89 – 96)	1 hr (30 mins – 3 hrs)
Bench grinders	99 (94 – 104)	18 mins (5 mins – 1 hr)
Others in workshop	89 (82 – 96)	3 hrs (40 mins – 8 hrs)
Bulldozers	99 (97 – 100)	18 mins (15 – 30 mins)
Chainsaws	106 (104 – 107)	3 mins (2 – 5 mins)
Others stacking wood	96 (93 – 99)	40 mins (15 – 50 mins)
Circular saws	99 (98 – 101)	18 mins (10 – 20 mins)
Others in workshop	89 (84 – 94)	3 hrs (1– 8 hrs)
Farm trucks	85 (83 – 88)	8 hrs (4 – 8 hrs)
Forklifts	84 (81 – 88)	8 hrs (4 – 8 hrs)
Firearms	Lpk 140+ dB	no exposure
Harvesters	83 (75 – 91)	8 hrs (2 – 8 hrs)
Irrigation pumps	100 (96 – 104)	15 mins (5 – 30 mins)
Motorbikes – 2 wheel	81 (70 – 92)	8 hrs (1.5 – 8 hrs+)
Packing shed workers	80 (78 – 82)	8 hrs (8 hrs+)
Shearers	86 (84 – 87)	7 hrs (4 – 8 hrs)
Others in shed	80 (77 – 83)	8 hrs (8 hrs+)
Tractors with cabins	76 (75 – 78)	no limit
Av. increase with radio on	3 – 5 dB	8 hrs (8 hrs+)
Others in field	85 (80 – 90)	8 hrs (2 – 8 hrs+)
Tractors without cabins	92 (90 – 93)	1.5 (1 – 2) hrs
Others in field	82 (78 – 86)	8 hrs (6 – 8 hrs+)

Source: Farmsafe Australia, Noise injury prevention strategy (2002)

** For example: If exposed to a noisy activity for half the recommended daily limit {eg. Angle grinder for 10 min of a 20 min daily limit}, the remaining noise exposure in the day should not exceed half the recommended daily limit for another activity (eg. A limit of 4 hrs instead of 8hr on a tractor with a radio).

Dairy farm owners and managers need to ensure that all workers are protected from damaging noise levels.

14. Zoonoses

Leptospirosis is a disease caused by the spirochaete, *Leptospira*, and is characterised by fever and myalgia in humans. Symptoms may also include lethargy and long periods of illness. Transmission can occur through urine contaminated water and hay being ingested, inhaled or absorbed through the skin and eyes. In Australia, clinical leptospirosis has been reported in cattle and pigs, and mostly in the tropics. Sporadic cases occur in sheep, horses and dogs. People at risk from leptospirosis include abattoir workers, dairy farmers, cattle farmers, veterinarians, piggery workers, cane farmers, and banana growers.

Nationally, 176 notifications of leptospirosis were received during 2004 (see Table 15) where Queensland and New South Wales registered 69 percent and 23 percent of Australia's annual cases respectively.

Table 14: Notifications of leptospirosis received by the National Notifiable Diseases Surveillance System, by state, for the period 2000–2004

State	2000	2001	2002	2003	2004	5 year mean
ACT	9	4	3	4	0	4.0
NSW	78	65	39	41	40	52.6
NT	9	4	3	4	2	4.4
QLD	135	125	78	69	121	105.6
SA	8	3	2	2	1	3.2
VIC	36	38	18	7	7	21.2
TAS	0	5	2	0	0	1.4
WA	4	2	3	6	5	4.0
Aust	279	246	148	133	176	196.4

Source: Communicable Diseases Australia, National Notifiable Diseases Surveillance System (2005) www1.health.gov.au/cda/Souyrce/Rpt5set.cfm

Table 15: Notifications of leptospirosis* collected by the National Notifiable Diseases Surveillance System, by occupation=dairy farmer and state, for the period 2000–2004

State	2000	2001	2002	2003	2004
NSW	1	1			
QLD	14	13	4	3	7
SA	3	3			
VIC	16	18	6	1	3
TAS		2	1		
WA				2	
Total known dairy	34	37	11	6	10
Aust *	279	246	148	133	176

Source: National leptospirosis Surveillance Reports Nos 13(2004), 12(2003), 11(2002), 10 (2001), 9(2000)

Note*: Comm Diseases Network data are higher than those collected by Reference Laboratory due to inclusion of cases without questionnaire form data OR Note*: Cases of the NNDSS where Leptospirosis Surveillance Questionnaire has been submitted

Q fever is caused by a bacteria-like organism, *Coxiella burnetii*, which is highly virulent and infectious. The disease occurs worldwide, with the exception of New Zealand (Hilbink et al 1993), and is an occupational hazard for veterinarians, abattoir workers, and people working with animals. Cattle producers and workers in Australia have been shown to be at risk of exposure to Q fever (Fragar 2002). As Q fever is a disabling condition that may have long-term health impacts, the severity of the risk should generally be regarded as medium to high.

Table 16: Notifications of Q fever received by the National Notifiable Diseases Surveillance System, by state, for the period 2000–2004

State	2000	2001	2002	2003	2004	5 year mean
ACT	0	3	0	1	2	1.2
NSW	180	136	300	314	221	230.2
NT	0	0	1	1	3	1
QLD	391	452	396	224	150	322.6
SA	11	17	27	15	41	22.2
TAS	1	1	0	1	0	0.6
VIC	25	66	81	14	26	42.4
WA	14	19	20	19	9	16.2
Aust	622	694	825	589	452	636.4

Source: Communicable Diseases Australia, National Notifiable Diseases Surveillance System (2005) www1.health.gov.au/cda/Sourc/Rpt5set.cfm

The Australian Government funded Q Fever vaccination program in its second phase (commenced October 2001) has included the beef, sheep and dairy industries. Early results of a pre vaccination screening in Queensland suggest that dairying families could be a higher risk group than meatworkers (Farm Safety News, 2002).

Q fever vaccine is available across Australia through state Health Departments.

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