



The University of Sydney  
AUSTRALIA

# The Safety of Young People in Australian Agriculture

## The Facts

## 2008

Facts and Figures on  
Farm Health and Safety Series  
No 13

National Farm Injury Data Centre



AUSTRALIAN CENTRE FOR AGRICULTURAL HEALTH AND SAFETY

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***The Safety of Young People in Australian Agriculture – The Facts 2008.***

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## Summary

As family members or new employees entering the workforce, young people on farms may be involved with hazardous work and activities, often with little experience, training or supervision. Behavioural characteristics may also increase injury risk for young people in farm work and living environments. The 15-24 year old age group is recognised as a significant at-risk section of the community for fatal and non fatal injury in most developed countries.

This document has collated information on traumatic deaths and injury known to have occurred on Australian farms and in particular to young Australian farmers and farm workers aged 15-29 years. While there is no single database that holds all the information necessary to define the nature and scale of health and safety problems for young people on farms, data for this document was sourced primarily from the Australian Bureau of Statistics (ABS), the Australian Workers Compensation Scheme, the National Coroner's Information System (NCIS) and the NSW Hospitals Inpatients Statistics Collection.

- The leading cause of non-intentional injury deaths for young people in the *agricultural occupations* are motor vehicles accidents, occurring on roads, highways and off-road. Deaths due to overdose of narcotics are also important for this age group.
- The leading causes of *on-farm* non-intentional deaths are also vehicles (all types, including motorcycles and quad bikes), machinery and animals.
- *Admissions to NSW hospitals* for on-farm injury in this age group are mostly associated with riding motorcycles, horses (either ridden or handled), vehicles and agricultural machinery.
- The most common agents associated with *workers compensation injury claims* in young farmer workers were horses, motorcycles and trail bikes and cattle. However, there were significant numbers of claims across a wide variety of agents of injury.
- *Noise injury* and its prevention in young people is a key issue, as its onset is insidious. Young people are at particular risk on farms in relation to machinery and other agricultural operations as well as to shooting activities.
- *Suicide deaths* are a key concern for young men associated with Australian agriculture.

The information in this report will be useful to set priorities and provide guidance for injury prevention activities that target this important section of the rural population.

## 1. Introduction

Agriculture and horticulture enterprises produce commodities of more than \$35 billion value per annum on around 138,000 enterprises spread across all states of Australia. However, that production is associated with a high cost in terms of human injury to people who work, live on and visit farms. 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.

As family members or new employees entering the workforce, young people on farms may be involved with hazardous work and activities, often with little experience, training or supervision. Behavioural characteristics may also increase injury risk for young people in farm work and living environments. The 15-24 year old age group is recognised as a significant at-risk section of the community for fatal and non fatal injury in most developed countries.

This document has collated information on traumatic deaths and injury known to have occurred on Australian farms and in particular to young Australian farmers and farm workers aged 15-29 years. While there is no single database that holds all the information necessary to define the nature and scale of health and safety problems for young people on farms, data for this document was sourced primarily from the Australian Bureau of Statistics (ABS), the Australian Workers Compensation Scheme, the National Coroner's Information System and the NSW Hospitals Inpatients Statistics Collection.

While there are limitations to the various data sets used to source information, especially the lag period of data collection, it is hoped that this summary can improve the health and safety of young people living and working on Australian farms.

The document summarises all current data available to the National Farm Injury Data Centre and has been produced to provide guidance to agencies and individuals working to reduce risk associated with living and working on farms 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. The Australian agriculture industries

The 2005-06 Agricultural Census found that there were an estimated 137,968 agricultural businesses involved in agriculture. In addition an estimated 16,504 non-agricultural businesses also undertook some form of agricultural activity in 2005-06, making a total of 154,472 agricultural businesses (Table 1). Farms undertake a wide range of activities to produce different commodities and each production system can be associated with its own set of hazards to health and safety.

**Table 1: Number of businesses with agricultural activity\*, Australia 2005-2006**

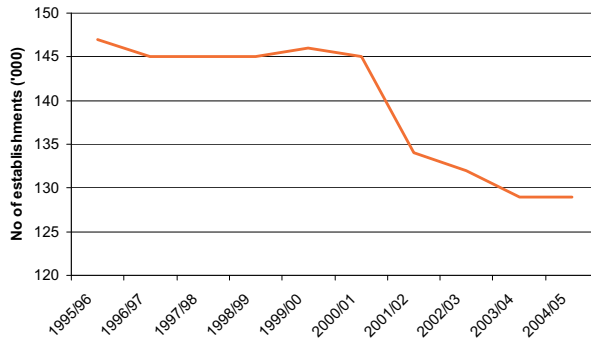
<b>Horticulture</b>	0111	Nursery production (undercover)	351
	0112	Nursery production (outdoors)	923
	0113	Turf growing	339
	0114	Floriculture (undercover))	224
	0115	Floriculture (outdoors)	670
	0121	Mushroom growing	106
	0122	Vegetable growing (undercover)	1,043
	0123	Vegetable growing (outdoors)	4,077
	0131	Grape growing	6,692
	0132	Kiwifruit growing	38
	0133	Berry fruit growing	522
	0134	Apple and pear growing	679
	0135	Stone fruit growing	1,276
	0136	Citrus fruit growing	1,387
	0137	Olive growing	359
	0139	Other fruit and nut tree growing	3,437
	0141	Sheep farming (specialised)	13,093
	0142	Beef cattle farming (specialised)	42,691
<b>Grain, sheep, beef farming</b>	0143	Beef cattle feedlots (specialised)	705
	0144	Sheep-beef cattle farming	8,242
	0145	Grain-sheep or grain-beef cattle farming	14,843
<b>Other crop</b>	0146	Rice growing	787
	0149	Other grain growing	12,478
	0151	Sugar cane growing	4,207
	0152	Cotton growing	687
	0159	Other crop growing nec	2,362
<b>Dairy farming</b>	0160	Dairy cattle farming	9,371
<b>Poultry farming</b>	0171	Poultry farming (meat)	860
	0172	Poultry farming (eggs)	468
<b>Other livestock farming</b>	0180	Deer farming	136
	0191	Horse farming	2,478
	0192	Pig farming	914
	0193	Beekeeping	728
	0199	Other livestock farming nec	796
<b>Total agriculture</b>	<b>01</b>		<b>137,968</b>
<b>All other industries</b>	<b>99</b>		<b>16,504</b>
<b>Total all industries</b>	<b>#</b>		<b>154,472</b>

Source: ABS Agricultural Commodities, Australia, 2005-06 (7121.0).

Note: \*In 2005-06 agricultural establishment data changed to Australian Business Register (ABR) data which is not directly comparable to prior ABS commodities data (see Table 1).

## 2. The Australian agriculture industries (continued)

The Australian agriculture sector has experienced continual restructuring over many years as a result of changing technical, economic and social conditions. The number of farms has been declining over time as farm size increases to achieve economies of scale (Figure1).



**Figure 1: Decline in number of agricultural establishments\* with AVAO >\$5000, Australia 1995/96-2004/5**

Source: ABS, Agricultural Commodities, Australia, 2004-05 (7121.0)

Note: \*No of agricultural establishments held in ABS register. From 2005-06 system changed to ABR data.

AVAO=Annual Value of Agricultural Output

The number of people employed in agriculture and services to agriculture (Table 2 and Figure 2) has also declined over the last 5 years, as a result of ongoing economic conditions and drought which has affected a large proportion of Australia's agriculture area. The decline in number of people employed has bearing on exposure to injury risk - economic conditions may mean that reductions in paid labour mean that those remaining in the industry are working longer hours, putting themselves at increased risk of injury.

The employed workforce is not the only population at risk of farm injury. As Australian farms are predominantly family-owned and operated businesses, family members and visitors to farms are also at risk of death and serious injury.

**Table 2: Persons employed\* in agriculture and services to agriculture, Australia 2000-2006**

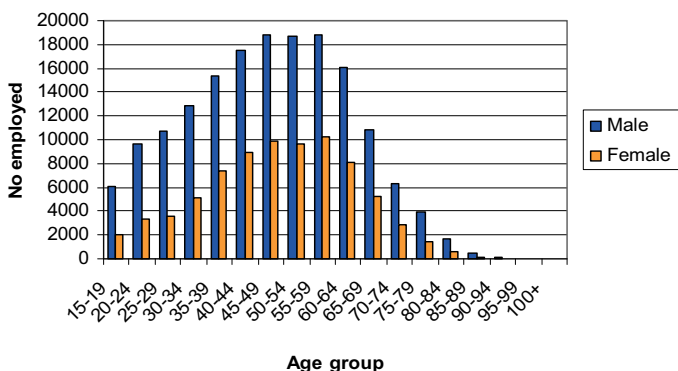
Year	Males ('000)	Females ('000)	Total Persons ('000)
2000	284.8	130.8	415.6
2001	269	132.4	401.4
2002	278.6	133.6	412.2
2003	237.9	109.3	347.2
2004	235.3	109.2	344.4
2005	225.3	109.0	334.6
2006	223.6	106.1	329.7
2007	227.0	107.1	334.0

Source: Labour Force, Australia Detailed Quarterly (6291.0.55.003, cited in ABS Year Book 2008)

Note \* Employed persons include persons who worked without pay for at least 1 hour per week in a family business or on a farm. Persons working in another industry and in agriculture are classified to the industry of predominant activity.

### 3. Younger people at work on Australian farms

From a total of 246,600 people who recorded that they were employed in agriculture in the 2006 Census of Population and Housing, 35,303 (14.3%) were aged between 15 and 29 years of age (see Figure 2). Of those 11,379 (32.2%) were classified under ANZSCO occupation codes as farmers/farm managers and 15,181 (43.0%) were farm labourers (Figure 3). The majority of young people were employed in the livestock industries (nearly 50%).



**Figure 2: Number of people employed in agriculture\*, by age group, Australia 2006 (n=246,600)**

Source: 2006 Census of Population and Housing, ABS 2008

Note: \*Industry of Employment (ANZSIC06)



**Figure 3: Number of people employed in agriculture\*, by age group and occupation#, Australia 2006 (n=246,600)**

Source: 2006 Census of Population and Housing, ABS 2008

Note: \*Industry of Employment (ANZSIC06) and #ANZSCO Occupation 06

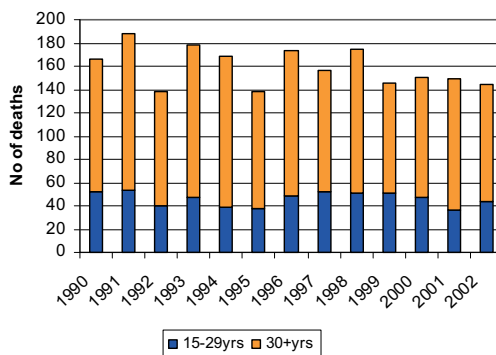


## 4. Accidental death in farm-related occupation groups

### 4.1 Accidental deaths of farmers and farm workers

Australian Bureau of Statistics mortality data separates injury-related fatalities into the occupational groups *Farmers and farm managers* (code 1400) and *Agricultural labourers* (code 8200) up to the year 2002. The deaths recorded below include non-intentional injury deaths that have occurred to the above occupational groups which may have occurred **on or off a farm**. Injuries coded to the occupational groups *Retired farmers and farm managers* and *Retired agricultural labourers* are not included, nor are family members who have recorded their occupation as something else (for example farm women working full or part-time off farm) and children under the age of 15 years.

The following mortality data is presented for the period 1990-2002 which comprises ICD 9-AM (1990-1996) and ICD 10AM (1997-2002) coding. The ABS has been unable to provide data by occupation from 2002 onwards, preventing analysis of deaths associated with the agriculture sector from that time. Figure 4 shows all non-intentional injury deaths of male and female farmers/farm managers and agricultural workers over the years 1990 to 2002 combined.



**Figure 4: Non-intentional injury deaths of male and female farm managers and farm workers\*, by age group and year, Australia, 1990-1996 (ICD 9) and 1997-2002 (ICD 10AM) (n=2,069)**

Source: ABS Mortality Data (HOIST NSW Health), January 2008

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

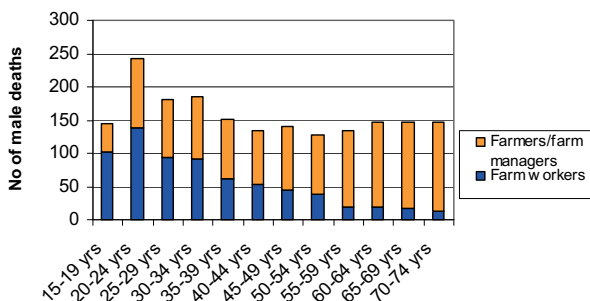
For the period 1990-2002 a total of 2,069 accidental injury-related deaths occurred to people of both sexes occupied as farmers and farm labourers. Twenty nine percent (28.9%) of all accidental deaths occurred to the 15-29 year old age group. An average of 46 young farmers and farm workers (male and female) aged 15-29 years died due to accidental injury each year for this period.

A total of 190 injury deaths (9% of all accidental deaths) occurred to females occupied as farmers or farm labourers, of which 30 (16%) were aged 15-29 years. Women are often employed off farm or classified in other occupations so the number of female deaths may not represent all female injury deaths on farms.

## 4. Accidental death in farm-related occupation groups (continued)

### 4.2 Male deaths

There were a total of 1,879 non-intentional injury deaths of male farmers/farm managers and agricultural workers over the 1990-2002 year period (Figure 5), of which 568 (30.2%) were aged 15-29 years. Of those, 41.0% of fatalities (n=233) occurred to farm managers and 59.0% (n=335) to farm workers (Table 3). (Female deaths have not been further analysed due to lack of accurate denominator data.)



**Figure 5: Non-intentional fatality in male farmers and farm workers\*, by age group, Australia 1990-2002 (n=1,879)**

Source: ABS Mortality Data (HOIST NSW Health), January 2008

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

When fatality rates are calculated for male farmers and farm workers for the period 1990-2002 (Table 3) the incidence of fatal injury are shown to be high for young farmers/managers when compared to farm workers of all age groups, and farmer/managers aged 30-54 years.

**Table 3: Non-intentional fatalities of male farmers and farm workers\*, by age group, Australia 1990-2002 (number and fatality rate per 100,000 employed in agriculture)**

	15-29 years		30-54years		55+years		Total	
	n	Rate	n	Rate	n	Rate	n	Rate
Farmer & farm managers	233	134	450	46	505	102	1,188	84
Farm workers	335	59	288	38	68	66	691	50
<b>Total</b>	<b>568</b>	<b>75</b>	<b>738</b>	<b>43</b>	<b>573</b>	<b>94</b>	<b>1,879</b>	<b>63</b>

Source: ABS Mortality Data (HOIST), January 2006.

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

Age standardised rate based on 1996 and 2001 ABS Census

## 4. Accidental death in farm-related occupation groups (continued)

### 4.3 Cause of death 1990-1996

Due to the small proportion of females fatally injured in the 15-29 year age group (5.4%), the following data presents cause of injury for males only.

**Table 4: Cause of non-intentional injury of male farm managers and workers\*, by age group, Australia, 1990-1996 (ICD 9)**

E-codes	Descriptions	15-29 yrs		30+ yrs		Total n
		n	%	n	%	
E804-805	Other transport accident	1	0.3	1	0.1	2
E810-819	Motor vehicle traffic accidents					
E810.10	Collision with train	1	0.3	3	0.4	4
E812	Collision with motor vehicle	52	17.4	112	14.8	164
E813	Collision with other vehicle	1	0.3	3	0.4	4
E814	Collision with pedestrian	19	6.1	27	3.6	46
E815	Collision on the highway	79	26.4	54	7.1	133
E816-E818	Other non-collision accident	41	13.7	68	9.0	109
E819	Other traffic accident	0	0.0	7	0.9	7
E820-825	Motor vehicle non traffic accidents	14	4.5	31	4.1	45
E826-829	Other road vehicle accidents					
E827-828	Animal being ridden	5	1.7	12	1.6	17
E830-838	Water transport accidents	4	1.3	12	1.6	16
E840-845	Air and space transport accidents	5	1.9	27	3.6	32
E850-879	Accidental poisoning and procedures	11	3.7	21	2.8	32
E880-888	Accidental falls	9	3.0	52	6.9	61
E890-899	Accidents caused by fires and flames	4	1.3	29	3.8	33
E900-909	Accidents due to natural and environmental factors	1	0.3	33	4.4	34
E910-915	Accidents caused by submersion, suffocation, and foreign bodies					
E910	Drowning	10	3.3	37	4.9	47
E911-913	Suffocation	3	1.0	23	3.0	26
E916-928	Other accidents					
E916-918	Struck by or against object	7	2.2	49	6.5	56
E919.0	Agricultural machines	6	1.9	67	8.9	73
E919	Other machinery	1	0.3	12	1.6	13
E922	Firearm	7	2.2	16	2.1	23
E925	Electric current	4	1.3	18	2.4	22
E920-928	Other	5	1.6	28	3.7	33
E984-E988	Unknown intent	7	2.2	9	1.2	16
	Unknown	2	0.6	5	0.7	7
	<b>Total</b>	<b>299</b>	<b>100</b>	<b>756</b>	<b>100</b>	<b>1,055</b>

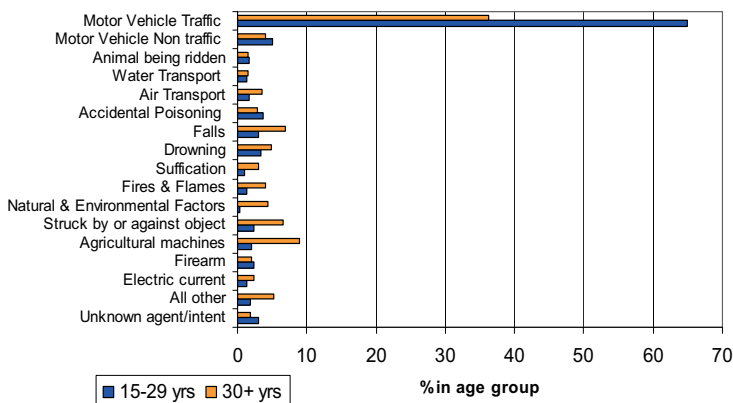
Source: ABS Mortality Data (HOIST NSW Health), January 2008

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

## 4. Accidental death in farm-related occupation groups (continued)

Figure 6 compares the proportion of fatalities in younger and older farmers by agent of injury for 1990-96. *Motor vehicle traffic* and *Accidental poisoning* associated deaths comprise a higher proportion of non intentional fatalities in younger farmers and farm workers.

A total of 207 (69%) accidental deaths in male farmers and farm workers aged 15-29 years were motor vehicle-related (traffic and non-traffic).



**Figure 6:Percent of non-intentional fatality in male farmers and farm workers, by accident type and age group, Australia 1990-96 (15-29yrs n=299, 30+yrs n=756)**

Source: ABS Mortality Data (HOIST NSW Health), January 2008

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).



Source: M. Morton 2007

## 4. Accidental death in farm-related occupation groups (continued)

### 4.4 Cause of death 1997-2002

Cause of death was coded using a different coding system (ICD 10AM) after 1996. The following data presents external cause of injury for males only for the period 1997-2002.

**Table 5: Non-intentional injury death of male farmers and farm workers\*, by external cause of injury and age group, Australia, 1997-2002 (ICD 10AM)**

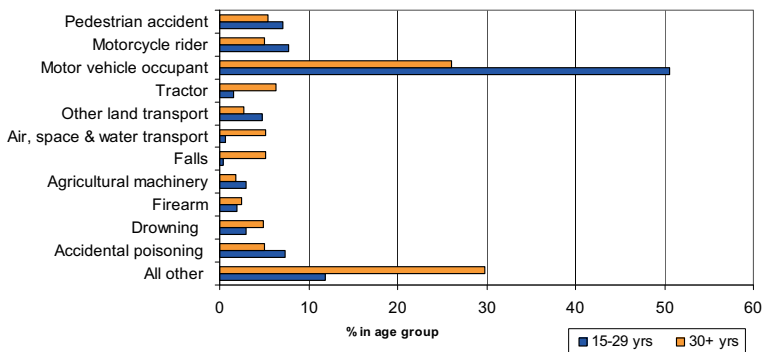
ICD code	Description	15-29yrs		30+yrs		Total n
		n	%	n	%	
V01-V99	Transport accidents					
V01-09	<i>Pedestrian injured in transport accidents</i>	19	7.1	30	5.4	<b>49</b>
V20-29	<i>Motor cycle rider injured in transport accidents</i>	21	7.8	28	5.0	<b>49</b>
V30-69	<i>Motor vehicle occupant injured in transport accident</i>	136	50.6	145	26.1	<b>281</b>
V80	<i>Animal-rider injured in transport accident</i>	2	0.7	4	0.7	<b>6</b>
V84	<i>Occupant of special vehicle mainly used in agriculture (tractors)</i>	4	1.5	35	6.3	<b>39</b>
V86	<i>Occupant of special all-terrain vehicle (ATV)</i>			17	3.1	<b>17</b>
V01-89	<i>Other land transport accidents</i>	13	4.8	15	2.7	<b>28</b>
V90-97	<i>Air, space &amp; water transport accidents</i>	2	0.7	29	5.2	<b>31</b>
W00-19	Falls	1	0.4	29	5.2	<b>30</b>
W20-49	Exposure to inanimate mechanical forces					
W20-22	<i>Struck by or against objects</i>	5	1.9	38	6.8	<b>43</b>
W23	<i>Caught, crushed, jammed, pinched in or between objects</i>	2	0.7	3	0.5	<b>5</b>
W24-29	<i>Contact with powered &amp; non powered tools</i>	0	0.0	3	0.5	<b>3</b>
W30	<i>Contact with agricultural machinery</i>	8	3.0	10	1.8	<b>18</b>
W31-49	<i>Contact with other &amp; unspecified machinery</i>	2	0.7	5	0.9	<b>7</b>
W33-34	<i>Firearms</i>	5	1.9	14	2.5	<b>19</b>
W50-64	Exposure to animate mechanical forces	2	0.7	1	0.2	<b>3</b>
W65-84	Accidental drowning, submersion or threats to breathing					
W69-74	<i>Drowning</i>	8	3.0	27	4.9	<b>35</b>
W75-84	<i>Other threats to breathing</i>	4	1.5	17	3.1	<b>21</b>
W85-99	Exposure to electric current, radiation & external ambient air temperature					
	<i>Electric current</i>	4	1.5	9	1.6	<b>13</b>
	<i>Other</i>	0	0.0	1	0.2	<b>1</b>
X00-X19	Exposure to fire, smoke/flames, heat	5	1.9	18	3.2	<b>23</b>
X20-29	Contact with venomous animals & plants	1	0.4	4	0.7	<b>5</b>
X30-39	Exposure to forces of nature	1	0.4	3	0.5	<b>4</b>
X40-49	Accidental poisoning	20	7.4	28	5.0	<b>48</b>
X58-59	Accidental exposure to other & unspecified factors	3	1.1	18	3.2	<b>21</b>
Y11-26	Unknown intent	0	0.0	5	0.9	<b>5</b>
Y85-89	Sequelae of external causes of morbidity & mortality	0	0.0	10	1.8	<b>10</b>
	<i>Other</i>	1	0.4	9	1.6	<b>10</b>
	<b>Total</b>	<b>269</b>	<b>100</b>	<b>555</b>	<b>100</b>	<b>824</b>

Source: ABS Mortality Data (HOIST), January 2006.

Note: \* Occupation codes 1400 and 8200

## 4. Accidental death in farm-related occupation groups (continued)

Figure 7 compares the proportion of fatalities in younger and older male farmers by external cause of injury for 1997-02. *Motor vehicle occupant*, *Motorcycle rider*, *Pedestrian accident* and *Accidental poisoning* associated deaths comprise a higher proportion of non-intentional fatalities in younger farmers and farm workers.



**Figure 7: Percent of non-intentional fatality in male farmers and farm workers, by external cause of injury and age group, Australia 1997-2002 (15-29yrs n=269, 30+yrs n=555)** *Source: ABS Mortality Data (HOIST), January 2006.*

### Motor vehicle occupant injury

A total of 136 (50%) accidental deaths in farmers and farm workers aged of 15-29 years were *Motor vehicle occupant* related. Tables 6-8 show further detail of fatalities occurring to motor vehicle occupants.

**Table 6: Number of fatal motor vehicle occupant accidents (V30-69) of farmers and farm workers\* aged 15-29 years, by vehicle type, Australia 1997-2002**

Vehicle type	15-29 yrs	%	Total 15 yrs +
Car	127	93.4	253
Ute/van	8	5.9	16
Heavy transport truck	0	0.0	8
Other	1	0.7	4
<b>Total</b>	<b>136</b>	<b>100</b>	<b>281</b>

*Source: ABS Mortality Data (HOIST), January 2006*

*Note: \*Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related farm workers)*

**Table 7: Number of fatal motor vehicle occupant accidents (V30-69) of farmers and farm workers\* aged 15-29 years, by driver status, Australia 1997-2002**

Driver status	15-29 yrs	%	Total 15 yrs +
Driver	88	64.7	212
Passenger	40	29.4	59
Unspecified	8	5.9	10
<b>Total</b>	<b>136</b>	<b>100</b>	<b>281</b>

*Source: ABS Mortality Data (HOIST), January 2006*

*Note: \*Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related farm workers)*

## 4. Accidental death in farm-related occupation groups (continued)

**Table 8: Number of fatal motor vehicle occupant accidents (V30-69) of farmers and farm workers\* aged 15-29 years, by impact type, Australia 1997-2002**

Impact type	15-29 yrs	%	Total 15 yrs +
Collision	104	76.5	212
Non collision	31	22.8	67
Unspecified	1	0.7	2
<b>Total</b>	<b>136</b>	<b>100</b>	<b>281</b>

Source: ABS Mortality Data (HOIST), January 2006

Note:\* Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related farm workers)

Fatalities occurring to motor vehicle occupants aged 15-29 years old predominantly involved collision of cars driven by the victim (Tables 7 and 8). Data about location of accident such as on farm or public road is not available.

Other transport accidents occurring to 15-29 year olds also involved motor vehicles, for example *Pedestrian*, *Motorcycle-rider* and *Other land transport* accidents.

### Accidental Poisoning

More than 50% of *Accidental poisoning* deaths occurring to young men employed as farmers or farm workers were associated with narcotics (Table 9).

**Table 9: Number of fatal poisoning accidents (X40-49) of farmers and farm workers\* aged 15-29 years, by substance type, Australia 1997-2002**

Substance	15-29 yrs	%	Total 15 yrs +
Narcotics	11	55.0	21
Alcohol	1	5.0	1
Gases and vapours	1	5.0	4
Pesticides	0	0.0	3
Other	7	35.0	19
<b>Total</b>	<b>20</b>	<b>100</b>	<b>48</b>

Source: ABS Mortality Data (HOIST), January 2006

Note:\* Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related farm workers)



## 5. On-farm deaths 2001-2004

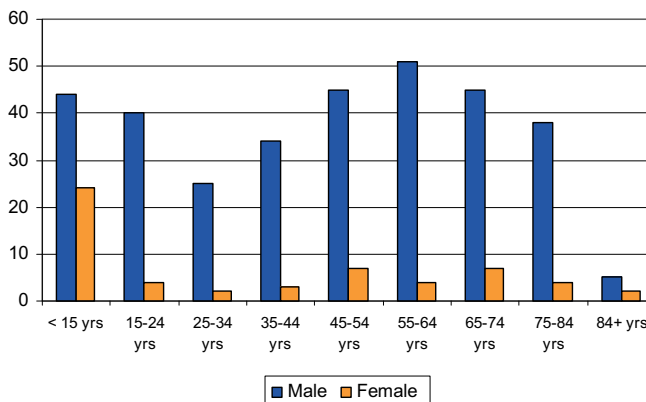
The National Farm Injury Data Centre has used the internet based National Coroners Information System (NCIS) to extract farm related fatalities for the period 2001-2004. The method of extraction was laborious and limited to those cases only which have been closed by the Coroner at time of analysis.

For the period 2001-2004 there were a total of 384 deaths which occurred on farms throughout Australia. Fifteen percent (n=58) of those deaths occurred to people aged 15-29 years (Table 10). Figure 8 illustrates the age profile and sex of all reported deaths by 10 year age group.

**Table 10: Number of on-farm deaths by age and sex, Australia 2001-2004**

	Male		Female		Total	
	n	%	n	%	n	%
< 15 yrs	44	13.5	24	42.1	68	17.7
15-19 yrs	26	8.0	2	3.5	28	7.3
20-24 yrs	14	4.3	2	3.5	16	4.2
25-29 yrs	13	4.0	1	1.8	14	3.6
<b>15-29 yrs</b>	<b>53</b>	<b>16.2</b>	<b>5</b>	<b>8.8</b>	<b>58</b>	<b>15.1</b>
30-54	91	27.8	11	19.3	102	26.6
55+	137	41.9	17	29.8	156	40.6
<b>Total</b>	<b>327</b>	<b>100</b>	<b>57</b>	<b>100</b>	<b>384</b>	<b>100</b>

Source: NCIS database, 2007



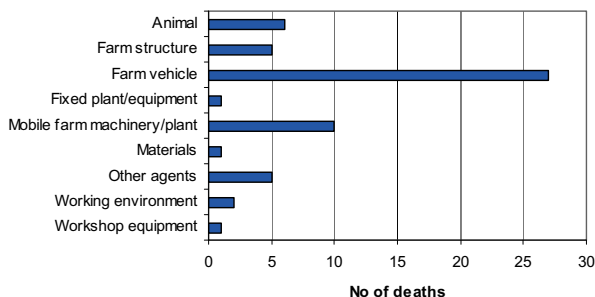
**Figure 8: Number of on-farm deaths by age, Australia 2001-2004 (n=384)**

Source: NCIS database 2007



## 5. On-farm deaths information 2001-2004 (continued)

Farm vehicles were the dominant agent associated with 47% of on-farm deaths of young people (Figure 9). Table 11 shows breakdown of vehicle type associated with fatalities of 15-29 year olds compared to all ages. Sixty two percent of all 2 wheel motorcycle fatalities occurred to young people aged 15-29 years.



**Figure 9: Agent associated with on-farm deaths of young people aged 15-29 years, Australia 2001-2004 (n=58)**

Source: NCIS database 2007

**Table 11: On-farm deaths of 15-29 year olds, by type of farm vehicle, Australia 2001-2004**

Farm vehicle	Deaths 15-29 yrs	Deaths All ages	% of farm vehicle deaths all ages
Motorcycle 2 Wheel	10	16	62.5
Motorcycle 4 Wheel	6	51	11.8
Utility	5	22	22.7
Aircraft/ helicopter	3	15	20.0
Farm vehicle other nec	2	7	28.6
Unknown	1	1	100.0
Other	0	21	0.0
<b>Total</b>	<b>27</b>	<b>133</b>	<b>20.3</b>

Source: NCIS database, 2007

**Table 12: On-farm deaths of people aged 15-29 years, by role on farm, Australia 2001-2004**

Role on farm	No of deaths	%
Worker/contractor	23	39.7
Reside on farm	19	32.8
Visitor	9	15.5
Unknown	6	10.3
Other	1	1.7
<b>Total</b>	<b>58</b>	<b>100</b>

Source: NCIS database, 2007

At least 40% of on-farm deaths of young people occurred to people employed as workers or contractors (Table 12).

## 6. Quad bike deaths

The **Quad bike Deaths Register** established by the National Farm Injury Data Centre maintains a tally of quad bike associated fatalities which have occurred on and off farms throughout Australia from July 2000. Quad bikes have previously been known as All Terrain Vehicles (ATV's). However they are not all terrain vehicles. Details of these cases are gathered from the National Coronial Information System (NCIS) and media sources, and may be subject to change as additional information becomes available to NCIS. Information from the Register has indicated that there are approximately 10 deaths associated with quad bike use on farms throughout Australia per year, and that quad bike associated death rates have increased since 1989-1992 (Fragar and Pollock, 2007).

Tables 13 and 14 show age group, gender and operator status of quad bike associated deaths where 14% of all quad bike fatalities occurred in the 16-25 year age group.

**Table 13: Age and gender of quad bike fatalities, Australia July 2001-September 2007**

Age (yrs)	Male	Female	Total
0-5	6	2	8
6-15	12	3	15
16-25	11	2	13
26-45	18	0	18
46-65	18	3	21
66+	12	4	16
<b>Total</b>	<b>77</b>	<b>14</b>	<b>91</b>

Source: ATV Safety on Australian Farms Briefing Paper (Fragar & Pollock, 2007)

**Table 14: Age and operator status of quad bike fatalities, Australia July 2001-September 2007**

Age (yrs)	Operator	Passenger	Bystander	Unknown	Total
0-5	3	5	0	0	8
6-15	7	7	0	1	15
16-25	10	1	1	1	13
26-45	17	0	0	1	18
46-65	21	0	0	0	21
66+	13	2	1	1	16
<b>Total</b>	<b>71</b>	<b>14</b>	<b>2</b>	<b>4</b>	<b>91</b>

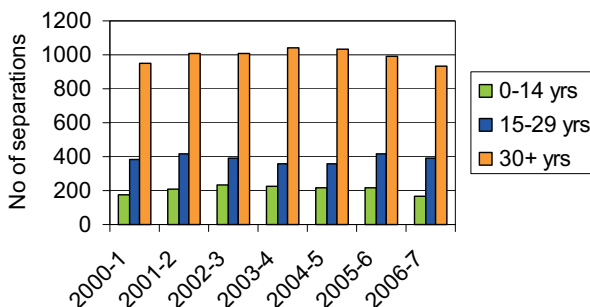
Source: ATV Safety on Australian Farms Briefing Paper (Fragar & Pollock, 2007)



## 7. Injured persons admitted to NSW Hospitals

Information on non-fatal injury in farmers can also be estimated from hospital inpatients statistics for NSW, where 22% of the Australian farm population reside.

Figure 10 indicates the number of non-intentional on-farm injuries hospitalised in NSW over a 7 year period from July 2000 to June 2007. A total of 2,721 (24.4%) young people aged between 15 and 29 years were admitted out of a total 11,151 admissions. Eighty one percent (81.1%) of admissions in the 15-29 year old age group were male.



**Figure 10: Non-fatal, accidental on-farm injury hospital admissions, by year and age group, NSW July 2000-June 2007 (n=11,151)**

Source: NSW Inpatients Statistics Collection (HOIST) NSW Health, June 2008

Table 15 indicates that the main external causes of non-fatal on-farm injury resulting in admission to hospital in NSW in younger people were riding motorcycles (39%), horses (either ridden or handled), vehicles and agricultural machinery. The number of motorcycle rider hospitalisations in the over 15-29 year old age group averaged approximately 152 per year.



## 7. Injured persons admitted to NSW Hospitals (continued)

**Table 15: Number of non-intentional, non-fatal hospitalisations, by external cause of injury and age group, occurring on farm, NSW July 2000-June 2007**

ICD code	Reason for hospitalisation	15-29 yrs		30+ yrs	
		n	%	n	%
V01-99	Transport accidents				
V01-09	<i>Pedestrian injured in transport accident</i>	20	0.7	48	0.7
V20-29	<i>Motor cycle rider injured in transport accident</i>	1,065	39.1	909	13.0
V30-79	<i>Motor vehicle occupant injured in transport accident</i>	170	6.2	245	3.5
V80	<i>Animal-rider injured in transport accident</i>	273	10.0	599	8.6
V84	<i>Occupant of special vehicle mainly used in agriculture (tractor)</i>	46	1.7	275	3.9
V86	<i>Occupant of special all-terrain vehicle (ATV)</i>	109	4.0	176	2.5
V10-89	<i>Other land transport accident</i>	25	0.9	39	0.6
V90-97	<i>Air, space &amp; water transport accident</i>	2	0.1	11	0.2
V98-99	<i>Other transport accident</i>	4	0.1	15	0.2
W00-19	Falls	113	4.2	980	14.0
W20-49	Exposure to inanimate mechanical forces				
W20-22	<i>Struck by or against objects</i>	76	2.8	424	6.1
W23	<i>Caught, crushed, jammed, pinched in or between objects</i>	64	2.4	238	3.4
W24-29	<i>Contact with powered &amp; non powered tools</i>	91	3.3	295	4.2
W30	<i>Contact with agricultural machinery</i>	132	4.9	466	6.7
W31-49	<i>Contact with other &amp; unspecified machinery</i>	112	4.1	390	5.6
W50-64	Exposure to animate mechanical forces				
W55	<i>Horse or other mammal</i>	145	5.3	866	12.4
W54-64	<i>Other</i>	37	1.4	114	1.6
W65-84	Accidental drowning, submersion or threats to breathing	3	0.1	6	0.1
W85-99	Exposure to electric current, radiation & external ambient air temperature	4	0.1	24	0.3
X00-19	Exposure to fire, smoke/flames, heat	44	1.6	102	1.5
X20-29	Contact with venomous animals & plants	46	1.7	159	2.3
X30-39	Exposure to forces of nature	12	0.4	39	0.6
X40-49	Accidental poisoning	27	1.0	52	0.7
X50-57	Overexertion, travel & privation	17	0.6	177	2.5
X58-59	Accidental exposure to other & unspecified factors	29	1.1	106	1.5
Y40-59	Complications of medications/surgery	3	0.1	15	0.2
Y85-89	Sequelae of external causes of morbidity & mortality	40	1.5	168	2.4
Y10-34	Intent unknown	2	0.1	8	0.1
Y91	Involvement of alcohol	3	0.1	3	0.0
	Other	7	0.3	32	0.5
	Unknown	0	0	1	0
<b>Total</b>		<b>2,721</b>	<b>100</b>	<b>6,982</b>	<b>100</b>

Source: NSW Inpatients Statistics Collection (HOIST) NSW Health, June 2008

## 8. Fatal workers' compensation claims

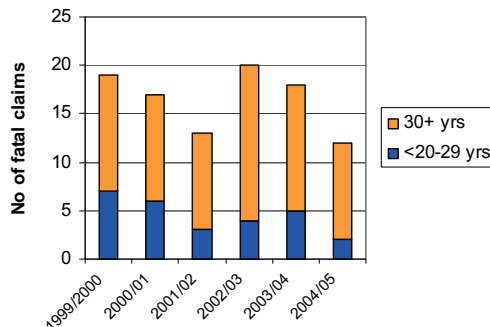
Worker's compensation insurance claims statistics relate only to persons employed as salaried or wage earning employees. It does not include the majority of the agricultural workforce who are self-employed.

Table 16 shows the number of fatal workers' compensation claims for the period 1999/2000 – 2004/2005 by age group. Of the total deaths (n=99) which occurred over the 6 year period, 27.3% (n=27) were to the under 30 years age group. There were an average of 4.5 deaths per year for this period which occurred to young workers aged <20-29 years. Figure 11 shows a general downward trend in the number of fatalities to workers aged 15-29 years over the past 6 years.

**Table 16: Number of fatal workers' compensation claims in agriculture industries by year, and age group, Australia 1999/00-2004/5**

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	Total	
	n	n	n	n	n	n	n	%
< 20	2	4	0	3	3	0	12	12.3
20-24	2	2	2	1	1	1	9	9.1
25-29	3	0	1	0	1	1	6	6.1
<b>&lt;20-29</b>	<b>7</b>	<b>6</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>27</b>	<b>27.3</b>
30-54	6	7	6	7	6	5	37	37.4
55+	6	4	4	9	7	5	35	35.3
<b>Total</b>	<b>19</b>	<b>17</b>	<b>13</b>	<b>20</b>	<b>18</b>	<b>12</b>	<b>99</b>	<b>100</b>

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Database Date: 03/01/2008



**Figure 11: Number of fatal workers' compensation claims in agriculture industries by year, and age group, Australia 1999/00-2004/5 (n=99)**

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases  
Date: 03/01/2008

## 8. Fatal workers' compensation claims (continued)

### Agency of fatality

Table 17 shows breakdown agency associated with fatal agricultural industry claims for the years 1999/00- 2004/5.

**Table 17: Number of fatal workers' compensation claims by agency of injury and age group, agriculture industry, Australia 1999/00-2004/5**

Breakdown Agency	<20-29 yrs		All ages
	n	% of age group	Total
Machinery & (mainly) fixed plant	3	11	6
Mobile plant & transport	12	44	47
Powered equipment, tools & appliances	1	4	4
Non-powered hand-tools, appliances & equipment	4	15	6
Materials & substances	2	7	6
Environmental agencies	1	4	6
Animal, human & biological agencies	2	7	7
Other & unspecified agencies	2	7	17
<b>Total</b>	<b>27</b>	<b>100</b>	<b>99</b>

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases  
Date: 03/01/2008

Mobile plant and equipment were associated with 44% of claims in the <20-29 year old age group. Of the 12 *Mobile Plant and transport* fatal claims which were associated with workers aged under 30 years, further breakdown showed that 7 deaths (26% of deaths in <20-29 year olds) were car-related and 2 (7%) were motorcycle-related.



## 9. Non-fatal workers' compensation claims

### 9.1 Number of claims

Australia-wide there were 8,650 non-fatal workers' compensation claims made in the years 1999/00-2004/05 for injury to workers aged less than 30 years in the agriculture sector. These comprised 34% of the total agricultural industry claims (25,115) made in the 6 year period (Table 18).

There was an average of 1,442 claims submitted per year by young workers aged less than 30 years in this period. For most years the greatest percent of annual claims were made by the <20-24 years and the 25-29 years age groups (Figure 12).

The following data present the number of accepted workers' compensation claims (excluding journey claims) that resulted in an absence from work of one working week or more.

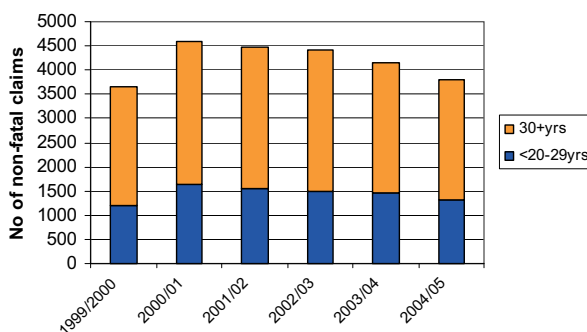
**Table 18: Number of non-fatal workers' compensation claims in agriculture industries, by year and age group, Australia 1999/00-2004/5**

	1999/00	2000/1	2001/2	2002/3	2003/4	2004/5	Total	
	n	n	n	n	n	n	n	%
< 20	415	390	385	385	320	305	2,200	8.8
20-24	610	600	606	565	520	495	3,396	13.5
25-29	605	570	505	520	465	390	3,055	12.2
<b>&lt;20-29</b>	<b>1,630</b>	<b>1,550</b>	<b>1,490</b>	<b>1,465</b>	<b>1,300</b>	<b>1,185</b>	<b>8,620</b>	<b>34.3</b>
30-34	565	495	570	475	425	430	2,960	11.8
35-39	570	560	540	505	430	400	3,005	12.0
40-44	510	500	510	490	475	405	2,890	11.5
45-49	450	425	440	410	400	400	2,525	10.1
50-54	380	440	385	350	320	360	2,235	8.9
55-59	265	290	280	265	265	245	1,610	6.4
60-64	165	145	145	145	135	165	900	3.6
65+	60	60	60	45	50	50	325	1.3
Not stated	np	np	np	np	np	15	15	0.1
<b>Total</b>	<b>4,600</b>	<b>4,470</b>	<b>4,420</b>	<b>4,160</b>	<b>3,805</b>	<b>3,660</b>	<b>25,115</b>	<b>100.0</b>

Source: ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases. Date 03/01/2008

np = data not available due to confidentiality restrictions

## 9. Non-fatal workers' compensation claims (continued)



**Figure 12: Number of non-fatal workers' compensation claims in agriculture industries, by year and age group, Australia 1999/00-2004/5 (n=25,115)**

Source: ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases:  
Date 03/01/2008

### 9.2 Industry

Table 19 shows non-fatal workers' claims submitted by the agricultural industries and all industry. A greater proportion of claims were made by people aged less than 30 years in the *Grain, sheep and beef* industry than those aged over 30.

**Table 19: Non-fatal workers' compensation claims, by agricultural industry and age group, Australia 1999/00-2004/5**

Industry	<20-29yrs	%of age group	All ages
Horticulture & Fruit Growing	2,600	30.1	8,490
Grain, Sheep & Beef Cattle Farming	3,860	44.6	10,295
Dairy Cattle Farming	595	6.9	1,450
Poultry Farming	465	5.4	1,505
Other Livestock Farming	720	8.3	1,945
Other Crop Growing	415	4.8	1,425
<b>All agriculture</b>	<b>8,650</b>	<b>34.4#</b>	<b>25,115</b>
<b>All industries</b>	<b>225,050</b>	<b>25.3#</b>	<b>888,340</b>

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases. Date: 07/04/2008

Note: #Percent of Total All ages



## 9. Non-fatal workers' compensation claims (continued)

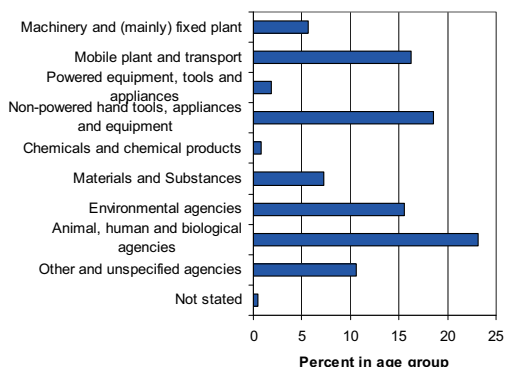
### 9.3 Agent of injury

The majority of workers' compensation claims in younger workers were associated with *Animal, human and biological agencies* which comprised 23% of claims (Table 20). *Non-powered hand tools and equipment* (18.5%), and *Mobile plant and transport* (16.3%) were also major agents (see Figure 13).

**Table 20: Number of workers' compensation claims in workers, by age group and breakdown agency, agriculture industry, Australia 1999/00-2004/5**

Breakdown Agency	<20-29 yrs		All ages
	n	% in age group	n
Machinery and (mainly) fixed plant	480	5.6	1,595
Mobile plant and transport	1,405	16.3	3,805
Powered equipment, tools and appliances	160	1.9	580
Non-powered hand tools, appliances and equipment	1,600	18.5	4,640
Chemicals and chemical products	70	0.8	200
Materials and Substances	635	7.3	2,005
Environmental agencies	1,350	15.6	4,170
Animal, human and biological agencies	2,000	23.1	4,855
Other and unspecified agencies	920	10.6	3,140
Not stated	40+	0.5	125
<b>Total</b>	<b>8,640</b>	<b>100</b>	<b>25,085</b>

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases. Date: 07/04/2008



**Figure 13: Workers' compensation claims of employees aged <20-29 years in the agricultural industries, by breakdown agency, Australia 1999/00-2004/5 (n=8,640)**

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases. Date: 07/04/2008

## 9. Non-fatal workers' compensation claims (continued)

A more specific breakdown from the table above shows the number of claims from workers aged <20-29 years associated with each agency (Table 21).

The most common agents associated with injury claims in young farmer workers were the subgroups:

- *Horses and donkeys,*
- *Motorcycles and trail bikes and*
- *Cattle.*

**Table 21: Workers' compensation claims of employees aged <20-29 years in the agricultural industries, by agent (detail), Australia 1999/00-2004/5**

Breakdown agency group	Agent	n
Mobile plant and transport-	Tractors	190
	Trailers	90
	Trolleys, handcarts	60
	Cutting, sawing machinery	85
	Conveyors, lifting plant	150
	Sheep shearing plant	85
	Trucks	120
	Cars, utilities	115
	<b>Motorcycles</b>	<b>540</b>
Animal agencies	<b>Horses</b>	<b>785</b>
	<b>Cattle</b>	<b>590</b>
	Sheep	230
	Pigs	95
Outdoor environment-	Holes in ground	150
	Wet oily traffic area	65
	Traffic and ground surfaces	400
	Fencing	180
	Vegetation	315
Non-powered hand tools and equipment-	Knives	255
	Ladders	180
	Crates boxes, drums	230
	Bags, bales, bundles	105
	Wire	65
Powered equipment-	Workshop tools and equipment	70
All other agencies		2,585
Agency not known or classified		905
<b>Total</b>		<b>8,640</b>

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases.: 07/04/2008

## 9. Non-fatal workers' compensation claims (continued)

### 9.4 Body part injured

The main body parts injured by younger farm workers claiming workers' compensation for the period 1990/00-2004/5 were to the *Hands, fingers and thumbs*, and the *Back – upper or lower* (Table 22 and Figure 14).

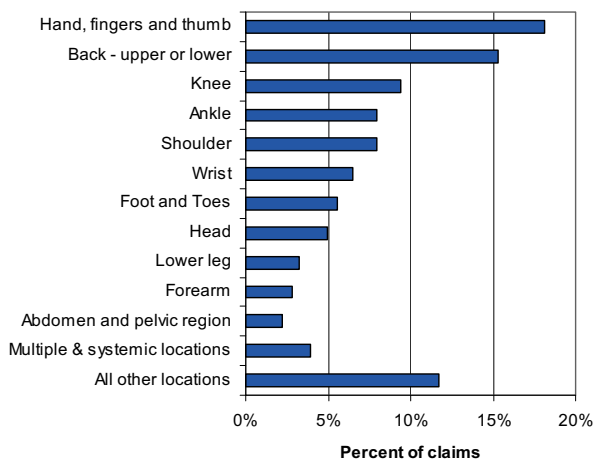
**Table 22: Workers' compensation claims of employees aged <20-29 years in the agricultural industries, by body part injured, Australia 1999/00-2004/5**

Bodily location of injury	No of claims	%
Trunk	<b>1695</b>	<b>19.6</b>
<i>Back - upper or lower</i>	1320	15.3
<i>Chest (thorax)</i>	145	1.7
<i>Abdomen and pelvic region</i>	190	2.2
<i>Multiple &amp; unspecified trunk</i>	10	0.1
Upper limbs	<b>3420</b>	<b>39.6</b>
<i>Hand, fingers and thumb</i>	1565	18.1
<i>Shoulder</i>	685	7.9
<i>Wrist</i>	560	6.5
<i>Forearm</i>	240	2.8
<i>Elbow</i>	130	1.5
<i>Upper arm</i>	85	1.0
<i>Multiple &amp; unspecified upper limb</i>	145	1.7
Lower limbs	<b>2585</b>	<b>29.9</b>
<i>Knee</i>	810	9.4
<i>Ankle</i>	690	8.0
<i>Foot and Toes</i>	480	5.6
<i>Lower leg</i>	280	3.2
<i>Upper leg</i>	110	1.3
<i>Hip</i>	65	0.8
<i>Multiple &amp; unspecified lower limb</i>	150	1.7
Head	<b>425</b>	<b>4.9</b>
Neck	<b>150</b>	<b>1.7</b>
Multiple locations and Systemic locations	<b>340</b>	<b>3.9</b>
Non-physical locations	<b>15</b>	<b>0.2</b>
Unspecified/not stated	<b>10</b>	<b>0.1</b>
<b>Total</b>	<b>8,640</b>	<b>100</b>

Source: The ASC Online Statistics Interactive National Workers' Compensation Statistics Databases.: 07/05/2008



## 9. Non-fatal workers' compensation claims (continued)



**Figure 14: Workers' compensation claims of employees aged <20-29 years in the agricultural industries, by body part injured, Australia 1999/00-2004/5 (n=8,640)**

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases.: 07/05/2008



## 9. Non-fatal workers' compensation claims (continued)

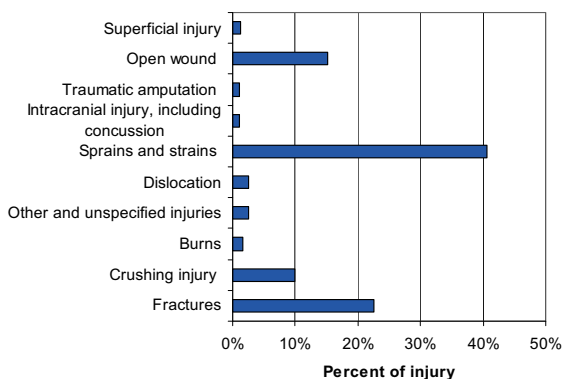
### 9.5 Nature of injury

Table 23 and Figure 15 show that sprains /strains and fractures were the major injuries associated with claims submitted by 15-29 year old workers.

**Table 23: Workers' compensation claims of employees aged <20-29 years in the agricultural industries, by nature of injury, Australia 1999/00-2004/5**

Type of injury	No of claims	%
Fractures	1,805	22.5
Contusion with intact skin surface and crushing injury excluding those with fracture	800	10.0
Foreign body on external eye, in ear or nose or in respiratory, digestive or reproductive systems	45	0.6
Burns	130	1.6
Other and unspecified injuries	85	1.1
Fracture of vertebral column with or without mention of spinal cord lesion	75	0.9
Dislocation	210	2.6
Sprains and strains of joints and adjacent muscles	3,260	40.6
Intracranial injury, including concussion	85	1.1
Traumatic amputation including enucleation of eye (loss of eyeball)	85	1.1
Open wound not involving traumatic amputation	1,215	15.1
Superficial injury	105	1.3
<b>Total</b>	<b>8,030</b>	<b>100</b>

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases.: 07/04/2008



**Figure 15: Workers' compensation claims of employees aged <20-29 years in the agricultural industries, by nature of injury, Australia 1999/00-2004/5 (n=8,030)**

Source: The ASCC Online Statistics Interactive National Workers' Compensation Statistics Databases.: 07/04/2008

## 10. Intentional death in farm-related occupation groups

Australian Bureau of Statistics mortality data also provides intentional injury data on fatalities in the occupational groups *Farmers and farm managers* (code 1400) and *Agricultural labourers* (code 8200) up to the year 2002. The deaths recorded below are the intentional injury deaths which have occurred to the above occupational groups **on or off a farm** (see Section 4: Accidental deaths in farm-related occupation groups).

For the period 1990-1996 at least 164 intentional deaths occurred to male farmers and farm labourers aged 15-29 years. At least 31.3% (n=145) of all male fatalities in the 15-29 year old age group were due to suicide. An average of 21 male farmers and farm workers aged 15-29 years died due to suicide each year for this period (see Table 24).

**Table 24: Injury deaths of male farmers and farm workers\*, by intent and age group, Australia, 1990-1996 (ICD 9)**

E-codes	Descriptions	15-29 yrs	%	All ages
E804-E928	Unintentional death	290	62.6	1055
E950-E959	Suicide	145	31.3	568
E960-E969	Assault	19	4.1	50
E984-E988	Unknown intent	7	1.5	16
	Unknown	2	0.4	7
	<b>Total</b>	<b>463</b>	<b>100</b>	<b>1,696</b>

Source: ABS Mortality Data (HOIST NSW Health)

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

For the period 1997-2002 at least 128 intentional deaths occurred to farmers and farm labourers aged 15-29 years. At least 29.0% (n=115) of all male fatalities in the 15-29 year old age group were due to suicide. An average of 19 male farmers and farm workers aged 15-29 years died due to suicide each year in this period (see Table 25).

**Table 25: Injury deaths of male farmers and farm workers\*, by intent and age group, Australia, 1997-2002 (ICD 10AM)**

ICD code	Description	15-29yrs		All ages
		n	%	
V01-X59	Non intentional death including sequelae of external causes of morbidity & mortality	268	67.5	809
Y85-89	Intentional self-harm	115	29.0	435
X85-Y09	Assault	13	3.3	38
Y11-26	Unknown intent	0	0.0	5
	Other	1	0.3	10
	<b>Total</b>	<b>397</b>	<b>100</b>	<b>1,297</b>

Source: ABS Mortality Data (HOIST NSW Health)

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

## 10. Intentional death in farm-related occupation groups (continued)

### Cause of intentional death 1990-1996

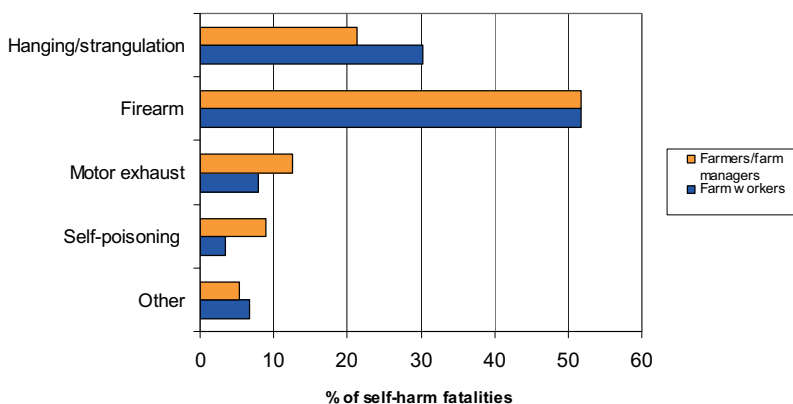
Of the 145 self-harm fatalities which occurred to farmers and farm workers aged 15-29 years between 1990 and 1996, 61% (n=89) were associated with farm workers (Table 26). Firearms were the most common agent associated with self-harm deaths of both farmer/farm managers and farm workers (Figure 16).

**Table 26: Number of intentional deaths of 15-29 year old male farmers and farm workers\*, by method and occupation, Australia 1990-96 (ICD 9)**

	Farm workers	Farmers/farm managers	Total n
<b>Self-harm</b>	<b>89</b>	<b>56</b>	<b>145</b>
Hanging/strangulation	27	12	39
Firearm	46	29	75
Motor exhaust	7	7	14
Self-poisoning	3	5	8
Other	6	3	9
<b>Assault</b>	<b>15</b>	<b>4</b>	<b>19</b>
<b>TOTAL</b>	<b>104</b>	<b>60</b>	<b>164</b>

Source: ABS Mortality Data (HOIST NSW Health)

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).



**Figure 16: Method of self-harm death of 15-29 year old male farmers and farm workers\*, Australia 1990-96 (ICD 9) (n=145)**Source: ABS Mortality Data (HOIST NSW Health)

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

## 10. Intentional death in farm-related occupation groups (continued)

### Cause of intentional death 1997-2002

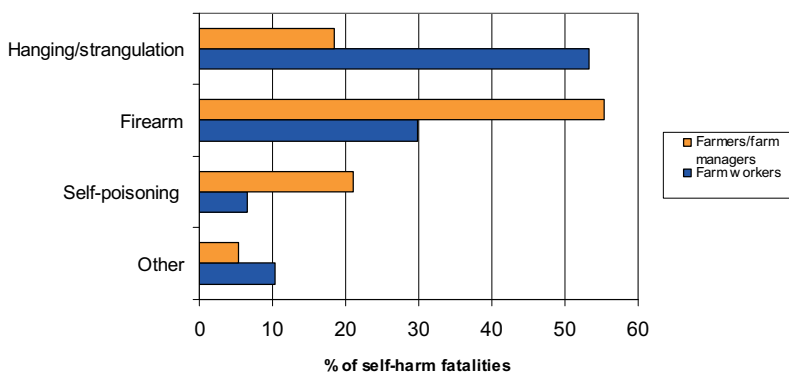
Of the 115 self-harm fatalities which occurred to farmers and farm workers aged 15-29 years between 1997 and 2002, 67% (n=77) were associated with farm workers (Table 27). Firearms were the most common agent associated with self-harm deaths of farmer/farm managers while farm worker deaths were more commonly associated with hanging/strangulation (Figure 17).

**Table 27: Number of intentional deaths of 15-29 year old male farmers and farm workers\*, by method and occupation, Australia 1997-2002 (ICD 10AM)**

	Farm workers	Farmers/farm managers	Total n
<b>Self-harm</b>	<b>77</b>	<b>38</b>	<b>115</b>
Hanging/strangulation	41	7	48
Firearm	23	21	44
Self-poisoning	5	8	13
Other	8	2	10
<b>Assault</b>	<b>11</b>	<b>2</b>	<b>13</b>
<b>TOTAL</b>	<b>88</b>	<b>40</b>	<b>128</b>

Source: ABS Mortality Data (HOIST NSW Health)

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).



**Figure 17: Method of self-harm deaths of 15-29 year old male farmers and farm workers\*, Australia 1997-2002 (ICD 10AM) (n=115)**

Source: ABS Mortality Data (HOIST NSW Health)

Note\*: Occupation codes 1400 (Farmers & farm managers) and 8200 (Agricultural labourers & related workers).

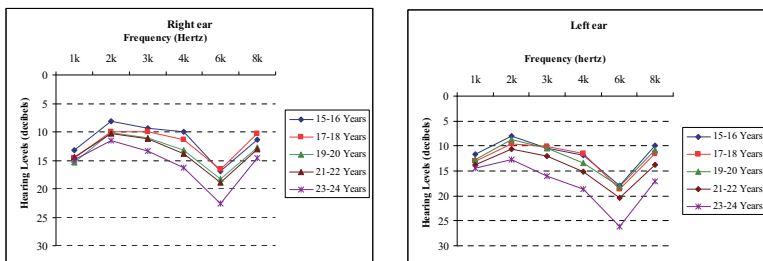


## 11. Noise injury

For about two decades, Nurse Audiometrists and other health professionals, in conjunction with the Australian Centre for Agricultural Health & Safety (ACAHS) based in Moree, have been offering farmers free hearing tests and noise injury prevention information at field days across New South Wales. Hearing loss from exposure to noise is progressive, permanent and preventable. Data from early hearing screening results indicated that levels of noise hearing loss increased with age for male farmers.

As a result it was decided to focus on testing young farmers and farm workers with plans to focus on early detection and prevention for this group.

Figure 18 indicates the degree of hearing loss in 808 farmers and farm workers who were screened during between 1994 and 2001 (Franklin et al, 2002).



**Figure 18: Hearing threshold in decibels for right and left by frequency for farmers and farm workers in 5 age groups.**

Source: NSW Hearing screening database, 2002.

These results indicate that hearing loss in the higher frequencies for farmers and farm workers commences in the teens and is progressive during the period 15 to 34 years. Noise levels of common activities on farms have been defined and damaging levels of noise of importance to young people who live or work on farms include agricultural machinery, workshop noise and shooting



## 12. Other studies

### Farm adolescent and young adult study

A focus group study designed to investigate perceptions, knowledge and attitudes of young farmers aged between 15 and 24 years of age living and working on Australian farms was conducted in the North West Plains area of northern NSW. The survey involved discussions with 149 participants and covered perceptions of young people, as well as their parents and educators (Hartigan and Clarke 1994).

The research concluded that the nature of work undertaken by young people on farms was often dangerous and physically demanding and that inexperience, inadequate training, impatience and risk-taking behaviour such as speeding further increased injury risk. The major agents of injury risk were acknowledged as:

- Motorbikes and farm vehicles
- Tractors and machinery
- Augers
- Horses
- Livestock handling (cattle particularly)
- Workshop equipment.

A further key finding was that farm parents, particularly fathers, play the most important role in the safety education and work practices of young men on farms.

As a result of the studies' findings, motorbikes in particular were identified as key targets for injury prevention for this age group.



## 12. Other studies (continued)

### Young Driver Studies

Research has shown that young drivers play a disproportionately large role in traffic crashes. In Australia, 16- to 24-year olds comprise about 20% of the driving population but account for around 35% of fatal and 50% of injury crashes (Catchpole et al, 1994). The young driver problem is often considered to stem from two main factors, age and inexperience (Deery and Fildes, 2003).

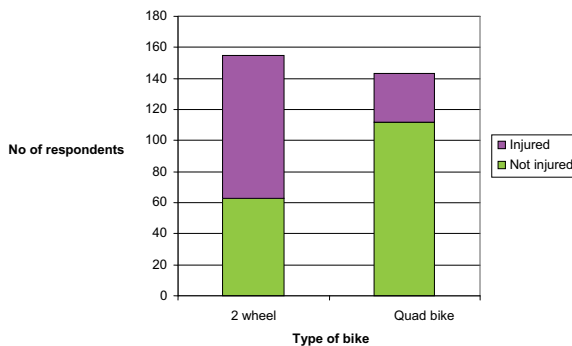


## 12. Other studies (continued)

### Quad bike Safety and Ag College students

A survey of 6 agricultural colleges across rural Western Australia was used to investigate farm motorcycle riding practices and experience of students aged over 16 years of age (Lower et al 2005). The results found that half of respondents (n=159) had incurred an injury from riding an agricultural motorcycle and that another 23% had suffered a near miss, making 67% (218 out of 326 students) who had suffered an injury or a near miss.

A total of 74% students (n=240) had access to an agricultural motorcycle, and that on average there were 2.6 agricultural motorbikes per farm. Figure 18 shows the proportion of students suffering injury from different motorbike types.



**Figure 18: Number of agricultural students injured on agricultural motorcycles, by type of motorbike, Western Australia 2005 (n=240)**

Source: Lower et al (2005)



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