

# AUSTRALIAN APPROACHES TO THE PREVENTION OF FARM INJURY

**Lyn Fragar and James Houlahan**

*Australian Centre for Agricultural Health and Safety  
University of Sydney University, Moree*

In Australia, farm injury is associated with many hazards in differing production systems; farm injury is a high risk for the population that lives and works in rural settings, settings that are often isolated—physically and socially. The prevention of farm injury requires a multifaceted collaboration on the part of a number of key stakeholder agencies and the employment of contemporary public health approaches that are proving valuable in maintaining the collaboration at the national as well as at the state level. The investment by the NSW Department of Health and the New England Area Health Service in the Australian Centre for Agricultural Health and Safety at Moree—in northwest NSW—has supported the progress being made in the prevention of farm injury. This article describes some Australian approaches to the prevention of farm injury.

## BACKGROUND

Farmsafe Australia was incorporated as an association in 1994 to bring together key stakeholder agencies to improve the productivity of Australian agriculture and horticulture, and the wellbeing of the workforce, through improved health and safety performance.

In 1996, Farmsafe Australia agreed on a defined set of goals, targets, and strategic activities, that have governed the plans and programs of its member agencies as they relate to the prevention of farm injury.<sup>1</sup> Progress was reviewed in 1999, and a more extensive review and revision of the role and function of Farmsafe Australia, and its strategic directions, is currently being undertaken.<sup>2</sup>

## FARM INJURY—ISSUES

Across all systems of agricultural production, the key hazards associated with preventable on-farm death and severe injury have been defined as:<sup>3,4</sup>

- tractors and other plant and machinery;
- motorcycles (2-wheeled and 4-wheeled);
- other motor vehicles;
- dams and waterways;
- noise;
- animal handling;
- horse handling;
- stress and suicide.

As a population group, children have been identified as being at special risk; there is also evidence of high risk to young men and to older men.<sup>3</sup>

Injury on farms in Australia is associated with many hazards in differing production systems. Researchers and injury prevention professionals have identified that there are some common characteristics for risk of injury and hence prevention of injury shared by many Australian farms. These include the key hazards of tractors, motorcycles, and farm workshops, as well as factors such as having a high proportion of family involved in the business arrangements on farms, and a relative isolation from services such as education and medical facilities.

However, there are many differences that relate to the actual production system requirements for specific commodities. For example, even between animal production systems there is significant variation in exposure to physical hazards and injury risk factors—beef cattle production may use either extensive grazing systems or more intensive, outdoor feedlot systems; while piggeries are generally intensive indoor systems. Harvesting systems and labour demands for milk production are very different to those for wool harvesting; for example, dairies require labour input twice or three times a day for 365 days per year, while shearing is an annual intensive activity often using contract labour for between a few days to a few weeks of the year. There is similar significant variability in injury risk factors between cropping systems for grains, tree crops, and the range of vegetable crops, and these are significantly different to the injury risk factors associated with animal handling systems.

Depending on geography, season, cash flow, and availability of labour, the nature and degree of mechanisation and exposure to hazardous pesticides also varies between different systems at different times and in different places.

The Farmsafe Australia network has had to address:

- a previous lack of awareness of farmers and the industry of the nature and scale of the injury risk;
- the commonly held view among individual farmers, the industry and wider community that a health and safety improvement is costly and time consuming;
- no one location for obtaining relevant information on farm injury – hampering the efforts of stakeholders to develop effective policies and to drive change; and

- a lack of understanding of the preventability of injury.

In this latter characteristic, the farming community is probably not alone.

The focus of previous approaches to occupational health and safety (OHS) had been on protecting employees in larger enterprises. However, as much of the labour in the agriculture and horticulture sector is family labour, their needs and those of their employed workforce have been largely overlooked. There has been a general lack of awareness of both the OHS approaches to risk management being adopted, and to improvements being made in other larger scale industries. Farming businesses share these features with other small businesses across Australia.

During the 1990s, the economic and social environment for agriculture has become more challenging, due to lower commodity prices and higher input costs. Also, farmers have reported feelings of tension and frustration due to loss of control over their business decision-making, in light of perceived increasing government intrusion into decision making in the farm family business. These feelings relate, for example, to native vegetation regulations and land and water reforms; taxation demands; and regulatory requirements to keep pesticide records; these demands cause both reduced availability of skilled labour and increased pressure on farmers' time.

As the problems of risk of injury were made more public during the late 1980s and early 1990s, it became clear that there was significant potential for fragmented and inconsistent messages about farm safety solutions being sent to farm families and farm managers. Farmers have frequently reported that they have been so barraged by media reports of a wide range of specific injury and death occurrences and that they 'don't know where to start'.

## FARM INJURY—PUBLIC HEALTH APPROACHES

Public health approaches have been used to tackle the problem of farm injury in Australia, and have gained the support of industry and government in a way that is unique among all industries. Features of these public health approaches are basic, but they have now been generally accepted as:

### A community development approach

The aim of this approach has been to assemble key partnerships; and to support the target group to take control and leadership, supported by relevant players who commit to playing their part in the adopted plan. The Farmsafe network has been based within industry organisations. Member agencies of Farmsafe Australia are listed in Table 1. State and local Farmsafe associations have similar but locally-relevant membership.

### Development of an understanding of the farming populations at risk

This approach has included knowledge of the key characteristics of the population and their organisation at the levels of family unit, business enterprise, community, and peak body—that is, their environment (social, economic, and physical); their key issues; and their preoccupations.

### A sound evidence base

In this approach, data have been collected and reported in a manner that is relevant to the needs of organisations, and have been used by the Farmsafe collaborations to define the priorities for action, to define effective solutions, and to establish standards and benchmarks.<sup>5</sup> For the agriculture sector, it has been essential to use population data, as few farming enterprises are large enough to experience the whole range of potential injury outcomes.

**TABLE 1**

#### MEMBER AGENCIES OF FARMSAFE AUSTRALIA

National Farmers Federation	Australian Centre for Agricultural Health and Safety
Country Women's Association of Australia	Tractor and Machinery Association of Australia
Australian Workers Union	Farmsafe Queensland Ltd
Department of Agriculture, Fisheries and Forestry	Farmsafe New South Wales
Department of Transport and Regional Services	Farmsafe Victoria
National Occupational Health and Safety Commission	Farmsafe South Australia
Rural Industries Research & Development Corporation	Farmsafe Western Australia Inc.
Rural Training Council of Australia	Tasmanian Rural Industry Training Board

## APPROACHES TO PREVENTION OF FARM INJURY

Faced with so many injury hazards, Farmsafe Australia has focused industry attention on:

- injuries associated with high severity—that is, those associated with death and/or hospital admissions;
- injuries occurring with high frequency;
- injuries associated with high cost—that is, those associated with high workers' compensation cost, long length of stay in hospital, and high replacement labour cost;
- injuries that are most readily preventable.

Current approaches to identify effective interventions for a specific injury risk, consider the following mix of solutions:

- improved design to reduce injury—engineering solutions;
- education and training to reduce injury—education;
- legislation and standards—enforcement.

These principles, together with the work of William Haddon,<sup>6</sup> have been translated into a 'hierarchy of control' used in contemporary OHS risk management. The order of effectiveness is:

- eliminate the hazard;
- substitute the hazard for a lesser risk;
- engineering—design to reduce risk;
- improve practice—administrative approaches include training, safe operating procedures, other rules for work;
- personal protective equipment;
- good first aid, injury management, and rehabilitation.

## OCCUPATIONAL HEALTH AND SAFETY AND OTHER LEGISLATED REQUIREMENTS

As farms are workplaces, Farmsafe Australia has recognised that injury prevention must be undertaken within the context of state OHS regulatory frameworks. In NSW, OHS legislative requirements that must be met include:

- consultation with workers and worker participation in safety processes;
- safety induction and training of workers;
- identification of hazards and assessment of risks in the workplace;
- effective risk control measures;
- records of OHS processes;
- health surveillance of workers for hazardous substances exposures where relevant.

## THE MULTIFACETED STRATEGIC APPROACH OF FARMSAFE AUSTRALIA

Based on evidence of priority hazards that represent high risk, vulnerable populations, and major agricultural industries, the following have formed the basis of a strategic approach being implemented by the member agencies of Farmsafe Australia.

### **Establishing the national, state, and local frameworks for action, as well as the commodity specific frameworks**

This has involved encouraging and coordinating local Farm Safety Action Groups, state Farmsafe programs, and reference groups established for commodity-specific programs and for specific issues.

### **Preparing on-farm injury management resources relevant to production systems and small business, and to meet regulatory requirements**

The preparation of injury management resources has included commodity-specific aids to hazard identification and risk assessment, templates for worker safety induction, and the keeping of OHS records. A video to assist the safety induction of workers has also been produced. This resource is provided to farmers and farm managers and others who participate in *Managing Farm Safety* training programs.<sup>7</sup>

### **Education and training**

A key program of Farmsafe Australia has been the establishment of Farm Safety Training Centres in all states to oversee delivery of the *Managing Farm Safety* training programs. The program has included training of instructors to deliver the course. The course has been mapped to the competency standards of the Australian Quality Framework.<sup>8,9</sup>

### **Data collection and dissemination**

The National Farm Injury Data Centre has become the 'engine room' for program development of the Farmsafe network. It provides relevant information regarding the nature and scale of farm injury problems for the relevant programs, and is working to develop more appropriate data standards and definitions to support the injury prevention activities.<sup>10</sup>

### **Research program**

The Rural Industries Research and Development Corporation has mobilised a group of research and development funding agencies of other rural industries and formed the Farm Health and Safety Joint Research Venture. The Joint Research Venture funds a modest research program that is providing the Farmsafe network with the evidence base for its program.

### Supportive legislation

Farmsafe Australia advocates for improved legislation and standards, where relevant to enhance farm safety. Recent programs have focused on the interpretation of the responsibilities of farms with regard to pesticides safety legislation in state pesticides acts and state hazardous substances regulations under their respective occupational health and safety acts. In each state, these two pieces of legislation overlap in terms of what users are required to do to ensure safety—that is, to use a pesticide in accordance with the label safety requirements in the pesticides act, but to undertake a risk assessment that allows registration of the pesticide and to determine that the safety directions on the label are in accordance with the occupational health and safety act.

Other work relates to participation in relevant standards development, according to the requirements of Standards Australia, and in reviews of legislation.

### Specific nationwide campaigns and programs

National programs have been or are being mounted under the guidance of relevant reference groups to address the following:

- *Tractor safety*—to date, there are tractor rollover protective structure subsidy and enforcement schemes in two states. For example, the *ROPS Retro-fitment Campaign* for tractor safety in NSW is described elsewhere in this issue of the Bulletin;
- *Machinery safety*—national strategies are being mounted that involve systematic investigation of safety of a list of specific machinery hazards;
- *Child safety*—a national *Child Safety on Farms* strategy, being implemented with funding from the Australian Department of Health and Ageing, is described elsewhere in this issue of the Bulletin;
- *Farm motorcycle safety*—a national approach is being developed to improve the safety of motorcycles on farms;
- *Hearing conservation*—a national reference group is being assembled to define a national strategy for hearing conservation, to be adopted by Farmsafe Australia.

### THE ROLE OF THE AUSTRALIAN CENTRE FOR AGRICULTURAL HEALTH AND SAFETY

The Australian Centre for Agricultural Health and Safety is a research centre of the University of Sydney, based in Moree in northwest NSW. The centre receives infrastructure funding from the NSW Department of Health and the New England Area Health Service. The centre also receives research funding from grants from other

government agencies whose grant programs are jointly funded by commodity levies on farmers and the Commonwealth Government, as well as from the research and development authorities of industry.

The Centre has played a pivotal role in the development of a unified approach to reducing farm injury by:

- preparing the initial document that used relevant injury–illness data, to establish goals and targets;
- bringing together the key players at state and national level, NSW Farmsafe played a key role in establishing the national association;
- establishing the secretariats for Farmsafe Australia and Farmsafe NSW as well as the local North West Farmsafe group;
- establishing the National Farm Injury Data Centre and Data Collection;
- developing and piloting the *Managing Farm Safety* training programs and facilitating the establishment of Farm Safety Training Centres in all states to deliver the programs to farmers and farm managers;
- developing, in association with industry reference groups, ‘commodity-specific enterprise management tools’, which are on-farm occupational health and safety risk management packages that include:
  - hazard checklists for each workplace in the farm, and risk area of the farming enterprise;
  - templates for occupational health and safety business plans and budgets;
  - induction guides for new workers, induction guides for contractors;
  - record forms for training, pesticides, injuries; and guidance notes for managing 20 specific major risks;
- undertaking research in relevant areas—for example, motorbike injury, farm machinery injury, child injury on farms, noise injury, road traffic injury, stress and suicide in the agricultural industries, and pesticides and human health.

### CONCLUSION

Farmsafe Australia has brought together all key stakeholder agencies and has initiated multifaceted strategies and programs that support the prevention of injury and illness associated with farm work and farm life in Australia. The Australian Centre for Agricultural Health and Safety has played a pivotal role in the identification of needs, in generating data, and in enabling other agencies to implement programs that are both relevant and evidence based.

## REFERENCES

- 1 Farmsafe Australia. *Goals Targets and Strategies 1996–2001*. Moree, NSW: Farmsafe Australia, 1996.
- 2 Fragar LJ, Franklin R. *Farmsafe Australia Goals, Targets and Strategy 1996–2001—Mid-term review*. Moree, NSW: Australian Centre for Agricultural Health and Safety, 2002.
- 3 Fragar LJ, Franklin RC. *The health and safety of Australia's farming community*. Moree, NSW: Australian Centre for Agricultural Health and Safety and the Rural Industries Research & Development Corporation, 2000.
- 4 Page AN, Fragar LJ. Suicide in Australian Farming, 1988–1997. *Aust N Z J Psychiatry* 2002; 36.
- 5 Franklin R, Crosby J. Farm related injury in NSW: Information for prevention. *NSW Public Health Bulletin* 2002; 13(5).
- 6 Haddon W. The changing approach to the epidemiology, prevention, and amelioration of trauma: the transition to approaches etiologically rather than descriptively based. *Am J Public Health* 1968; 58: 1431–8. Reprinted in *Injury Prevention* 1999; 5(3): 231–236.
- 7 Lower T, Fragar L, Temperley J. Improving health and safety in the Australian sheep industry. *J Occup Health Safety Aust N Z* 2000, 16(2): 117–125.
- 8 Fragar LJ. *Mapping of the National Competency Standards (1998) to the Managing Farm Safety course learning outcomes*. Moree, NSW: Australian Centre for Agricultural Health and Safety, 2001.
- 9 Fragar L, Houlahan J, Temperley J. *Evaluation Review of the Managing Farm Safety Course in Australia*. Canberra: Rural Industries Research & Development Corporation, 2001.
- 10 Franklin RC, Fragar LJ, Page AN. The National Farm Injury Data Collection: data to inform farm injury prevention programs. *Australasian Epidemiologist* 2000 7(1): 18–24. 