

## **CONTRACT REVIEW**

### **PUBLIC CONCERNS ABOUT ANIMAL WELFARE AND SUSTAINABILITY WILL BE HIGHER**

*J.C. PETHERICK*

Dept of Primary Industries, Swan's Lagoon, Millaroo, via Ayr, Qld 4807

Domestication and confinement/restriction of movement of animals provides us with better control over their reproduction and nutrition, thus improving their productivity. Generally, there are some advantages for the livestock too, such as improved food supply, decreased risk of predation and protection from climatic extremes. It is relatively recently, however, that there has been an appreciation that there may be undesirable consequences of this control over our livestock species, not just for the animals themselves, but also for the land on which we keep them, the atmosphere, waterways and oceans.

Concern for the welfare of livestock started with those species kept in close confinement and was brought to the public's attention by the publication of Ruth Harrison's (1964) book "Animal Machines: The New Factory Farming Industry". This book had a strong impact on a public that appeared to be largely unaware of the changes that had taken place in farming practices as a result of the post-war pursuit of "cheap food". Since that time concern for farm animal welfare has extended to the more-extensively husbanded species, such as sheep and beef cattle, as well as to the "new domesticants", such as ostriches, crocodiles and deer.

As a result of agricultural methods the public also perceive the creation of "environmental problems". Intensive livestock farming leads to the production of large quantities of animal wastes which must be disposed of, or used in some way, and crop production and grazing systems have led to the clearing of native woodlands (and, reportedly, the resulting consequences for the atmosphere), loss of native flora and fauna, degradation of waterways (eg through fertiliser run-off) and the land itself (eg by erosion).

This review covers some of the animal welfare and sustainability issues perceived by the public, the ways by which these issues are currently being addressed and considers some possible future solutions to problems.

### **PUBLIC CONCERNS - ONE OF THE MAJOR FORCES DRIVING CHANGE IN AGRICULTURE TODAY**

*J.A. TAYLOR*

CSIRO Division of Tropical Crops and Pastures, 306 Carmody Road, St Lucia, Qld 4067

Public concerns about agricultural practices will increase and will affect the way farmers and graziers do things in the future. Both increasing urbanisation and changing urban values will widen the gap between the urban and rural communities, and increasing media exposure of unsound developments or unsustainable practices will strengthen the urbanites' disenchantment with rural development. Researchers and advisors will increasingly find that their recommendations are challenged by a wide range of stakeholders (including traditional clients, but also other community groups, government departments, etc.), especially in terms of the on-site and off-site impacts of technologies and management practices. Continuing public concern will lead to environmental impact statements being an essential prerequisite for the release of new technology.

Seventy years ago, almost 40% of Australia's population lived in rural areas and our literature applauded the courage, enterprise and endurance of our farmers and graziers (Morton 1993). Today, 85% of the population is urban (and the rate of rural depopulation is increasing, McKenzie 1994), and our literature now reflects a significant, negative shift in community attitude towards development, and farmers and graziers in general (Morton 1993). These trends in attitude are occurring world-wide, and will strengthen as the urban population grows, as its links with the land weaken, and as its value system is reinforced more by the media and recreational experiences in national parks, for example, than by first

hand experience of rural environments (Kennedy *et al.* 1995). The urban community's understanding of agriculture is poor and declining. These trends won't diminish with time or a change in government.

Agriculture is in the spotlight because over 60% of Australia's land area is used for grazing or cropping. Reports of agricultural land degradation (eg Ockerby and Roper 1994) and of decline in land condition (eg Tothill and Gillies 1992) are becoming more common, and are attracting government, media and wider community attention. The State and Federal government response to public concerns has been dramatic over the past 5 years. We have seen the enactment of land management legislation, vegetation clearing guidelines, pricing schemes for natural resources such as water, regional development schemes, and a range of instruments that commit government to action such as national strategies (eg Weeds, Biodiversity, Rangelands) and international environmental agreements (eg Biodiversity, Climate change, Desertification). Adverse publicity, and the widespread availability of environmental information (eg through government, schools, and environmental interest groups), are having a strong influence on community perceptions and attitudes towards agriculture. Agricultural industries will need to become serious about adoption of sustainable practices, self-regulation, and to adopt quality assurance standards (eg International Standards Organisation - ISO 9000, ISO 14000), if they are to stem the negative perceptions and demonstrate their seriousness and their successes. Agricultural professionals, such as scientists and advisors, need to be aware of the issues that concern the wider community, and have an important role in assisting rural industries and communities to adapt to the changing world. Many professionals have a firm conviction that their views represent the middle ground, yet the few studies that have examined this issue (eg Vining and Ebreo 1991), have shown that the middle ground was not where the professionals thought it was. The professionals must also be careful not to assume that their discipline has a monopoly on objectivity or wisdom (Aslin 1994). Scientists (and agricultural professionals in particular) must become more tolerant of other views of reality, other ways of seeing the world (Eckersley 1993). Although all community groups do not share the same value systems, they do share some visions of a preferred future. For example, for the past three years around 70% of the population have ranked environmental protection and economic growth as equally important, with only about 20% of the population seeing environmental protection as more important than economic growth (Australian Bureau of Statistics 1993, ABS 1995). The major environmental concerns with possible links to agriculture, are ocean pollution (27% public concerned), destruction of trees and ecosystems (26%), freshwater pollution (26%), ozone layer (17%), extinction of species (13%) and land degradation (10%) (ABS 1995). A recent survey of community support for soil conservation has shown that support for land conservation in general considerably exceeded that for ocean and beach conservation, and native forest conservation (Pitt *et al.* 1995). Support for more education and for more direct assistance to landholders greatly exceeded support for more research or enforcement. Overall support for soil conservation has increased over the past decade, but importantly, so too has the number of people willing to contribute to help soil conservation as well as the willingness of people to pay (Pitt *et al.* 1995).

Rising concern among consumers about the environmental impact of almost everything we do is drawing trade and the environmental issues together (Oxley 1995). Most of us are familiar with some of these issues, such as food quality, residues and concerns about the safety of genetically modified organisms (Hileman 1995). New quality standards such as the proposed ISO 14000 (Environmental management systems) will take this to new heights as companies attempt to gain better access to export markets, differentiate products, increase customer confidence, improve their image and limit their liability.

The political influence of rural Australia is declining (5% of the population) and government commitment to involving the wider community in decision making means that rural perspectives will be but one of the minority views around the table. However, this process will expose all the participants to the biases of the various sectoral groups, and, provided that the decision making is conducted in an open and constructive climate, could provide an opportunity for co-learning and considerable progress in achieving a balance between production and environmental issues.

## THE ECOLOGICAL BASIS FOR PUBLIC CONCERN ABOUT SUSTAINABILITY IN GRAZED RANGELANDS

J.R. BROWN and A.J. ASH

CSIRO Division of Tropical Crops and Pastures, PMB PO Aitkenvale, Qld 48 14

Australia's tropical and subtropical woodlands cover over 200 million ha or about 25% of the land area of the continent (Tothill *et al.* 1985). They provide the natural resources for livestock grazing (3.3 million cattle), conservation (1 million ha), tourism, wildlife habitat and water yield that are the basis of local economies and a significant contribution to the national economy (ASTEC 1993). Much of the land area suffers from traditionally recognised forms, of degradation such as increase in woody plants, soil erosion and loss of native tussock grass species. A pastoral industry assessment estimates that more than 50% of land area is deteriorating and requires changes in management for improvement and 20% is degraded and requires significant inputs and changes in management (Tothill and Gilles 1992). This degradation of basic resources has reduced long-term economic stability and viability of individual properties and the industry. In addition, the impact of inappropriate land use and management has had a major impact on values that have increased in importance to society, such as water quality and biological diversity. Public concern about the loss of these values has placed increased pressure on managers to address the causes of degradation and develop sustainable management systems. The alternative is to cease operations.

Producers and researchers are well aware that the major constraints to the performance of individual animals, herds and enterprises are seasonal malnutrition, year-to-year variability in growing conditions and unstable financial markets. The past fifty years have seen major efforts to overcome these constraints with technology. Although significant resources have been devoted to improved pasture and supplementation technologies, inherent low productivity and spatial heterogeneity has limited the utility of introduced plants, feed supplements and fertilisers. The introduction of improved livestock breeds, mainly *Bos indicus* cattle, have allowed producers to maintain livestock numbers in the face of low rainfall and poor quality forage. However, the introduction and uptake of pasture and animal technologies has failed to overcome the declining financial position of pastoralists and has led to resource degradation (Gardener *et al.* 1990; Lonsdale 1994). It is unlikely that industries that are poor financial performers and inflict long-term degradation on natural resources can remain a viable part of society. Therefore, research and application must focus on improving financial performance and alleviating the proximate causes of degradation within the constraints of largely intact native ecosystems. Three of the most widespread examples of degradation in tropical woodlands are loss of critical habitat for native plants and animals, invasion of exotic shrubs and poor water quality at the catchment scale. All three are a result of overgrazing by domestic stock.

Livestock management in tropical ecosystems has largely focussed on maintaining animal numbers to provide offtake regardless of climatic variability. The chronic heavy grazing associated with this strategy reduces vegetative cover and shifts herbaceous species composition to a less desirable forage mix. Although livestock can compensate for changes in plant species composition by selectivity at the individual plant, community and landscape levels (Ash *et al.* 1995), many native plants and animals lose access to critical habitats. Changes in vegetation structure can alter both the spatial and temporal availability of resources (cover, food, access to water, etc.). When these changes are widespread within a paddock or a region, survival of populations and species may be threatened. Competition for critical habitat in a drought is a major concern for integrating livestock production and conservation values in extensively managed grazing systems, and must be addressed by both research and management.

Invasion by exotic woody weeds or increases in native shrubs and trees on over 10 million ha has reduced the stability and diversity of tropical woodland ecosystems, resulting in loss of forage and increased costs of mustering (Brown and McIvor 1993). Invasive shrubs are well adapted to almost one-half of the total area yet currently occupy only about 10% of the land area. Thus, a dual management strategy with emphasis on both containment and restoration is required. Although chemical, mechanical and biological controls have been used, most are expensive, unreliable and/or environmentally objectionable. Mitigating the impact of woody weeds on livestock production and ecological stability will require a thorough understanding of the population biology and ecology of weeds and how those

processes are manifested at landscape and regional scales. Successful management systems will have to be highly specific in both time and space and must rely on broadacre, low cost technologies. In short, the reintroduction of fire as a strategic management tool must be a high priority. Fire as a strategic management tool can be effective only if it is integrated, via property planning, with livestock grazing operations.

Grazing operations have the ability to alter the hydrology of ecosystems in a variety of ways (Thurrow 1991). A consequence of reductions in herbaceous cover on grazing lands is a decrease in the infiltration (both rate and total amount) of precipitation and an increase in the proportion of water leaving the site as overland flow. When cover falls below critical levels, soil particles on the surface are susceptible to movement as suspended sediment. In healthy grasslands, water moving overland should move only short distances before encountering barriers (plants, litter, twigs) to slow movement and allow infiltration. If run-off becomes concentrated, the speed increases and there is little opportunity for sediment to drop out, increasing the delivery rate of pollutants to water courses. At larger scales, livestock, because of their selective grazing behaviour, tend to concentrate the effects of grazing in riparian (streamside) areas. Because these areas are critical as buffers for water quality at the catchment level, even low and moderate rates of grazing can have a disproportionate impact on water quality. Managing grazing to ensure the quality of water is only a minor issue on Australian rangelands at present, but the driest continent on earth can not afford to neglect, much longer, how the dominant land use affects water quality.

Although much of the degradation in tropical woodlands can be attributed to mismanagement, observations and research have shown that sustainable and economically viable use is possible. Therefore, the challenge is to develop and implement sustainable management systems on a larger scale. Maintaining the myriad of values of tropical woodlands in Australia requires that management strategies be developed to maintain the ecological integrity of these economically important ecosystems. By necessity, successful management strategies will have to place emphasis on the effect of climatic variability and spatial heterogeneity on ecological and economic stability. Although research into specific problems can alleviate economic impact and improve management decisions, an ecosystems approach to organising and conducting research is essential to avoiding future problems and realising the goal of sustainable land use and management.

As market specifications tighten and individual animal performance becomes more important, providing adequate amounts of high quality forage will eclipse the traditional need to keep as many animals as possible alive as a management objective. Thus, the emphasis is shifting toward lower stocking rates and strategic use of improved pastures and supplementation for enhanced performance and sound financial management at the enterprise level. These management imperatives fit well with the increased expectations of land managers to meet not only property goals, but to manage land with the broader interests of society in mind as well.

## FARM ANIMAL WELFARE - AN INDUSTRY PERSPECTIVE

W. SYKES

Animal Health & Welfare Consultant, R.M.B. 4130, Benalla, Vic. 3673

The welfare of farm animals has gained increasing prominence since the Brambell report in the UK in the mid 1960s and the Senate Select Committee Inquiry into aspects of Farm Animal Welfare in Australia in the 1980s.

Given the harsh environmental conditions and sometimes difficult financial constraints under which livestock production is undertaken in Australia it is, in some ways, understandable that animal welfare has suffered at times. However, changing industry attitudes, influenced in no small way by public perceptions and welfare group lobbying, have resulted in considerable effort being devoted to enhancing the well-being of livestock.

Few members of industry and the public would question a goal of ensuring the best possible well-being of livestock whilst maintaining a sustainable (and by definition economically viable) industry. What will continue to be debated is what compromises may be necessary due to constraints such as environment and economics.

### *Definitions/Delineations*

**Animal welfare** One well-used definition of animal welfare is that of Donald Broom (Cambridge, UK), who states that animal welfare is the ability of an animal to cope with its environment. It is a progression from poor to good. Indication of an animal's well-being can be measured (in part) by a range of means eg behaviour, endocrine levels (eg corticosteroids) and EEGs. It is generally agreed that no one test adequately measures welfare and that a battery of tests gives better results. The definition of what constitutes good/acceptable animal welfare is an individual judgement based on a person's own experiences and philosophies.

**Animal rights** Animal rights is a philosophical point of view which requires that all species be given equal rights (ie man has no right to exploit another species for food, fibre, companionship or entertainment). The rights of animals may override welfare considerations eg allowing feral horses their freedom in central Australia can result in heavy losses due to starvation/thirst at the end of prolonged dry periods.

**Codes of practice** Model Codes of Practice have been developed nationally for most industries and implemented to varying degrees by the states with whom the legislative responsibility for animal welfare rests. In some states codes are incorporated into legislation to the extent that failure to comply with the codes can be used as evidence in an animal welfare case. Unfortunately there seems to be limited knowledge and in some cases limited application of the Codes of Practice by many livestock owners.

**Codes of best practice/quality assurance** Codes of best practice incorporating animal welfare exist, or are being developed, for most industries, eg Australian Lot Feeders' Association (ALFA) code of practice includes an animal care statement which identifies potential animal welfare issues, assigns responsibility and is auditable. Cattlecare, a Cattle Council of Australia/Meat Research Corporation quality assurance (QA) initiative, has recently been developed and is being widely promoted to the cattle industry. A sheep industry version of Cattlecare is evolving, as is a livestock transport industry QA programme incorporating animal welfare.

### *Principles*

A number of key principles strongly influence improving the well-being of farm animals:

1. Good animal welfare is generally consistent with good livestock management, good product quality and profitability. Some husbandry practices do inflict some pain and every effort should be made to implement the 3 Rs, that is, Refine, Reduce and Replace such practices.

It should be ensured that animals have:

- Freedom from hunger and thirst by ready access to fresh water and a diet to maintain full health and vigour
- Freedom from discomfort by providing an appropriate environment including shelter and comfortable resting area
- Freedom from pain, injury or disease by prevention or rapid diagnosis and treatment
- Freedom to express normal behaviour by providing sufficient space, proper facilities and company of the animal's own kind
- Freedom from fear and distress by ensuring conditions and care which avoid mental suffering.

Custodians of animals must accept the 5 obligations which help ensure achievement of the 5 freedoms listed above:

- Caring and responsible planning and management
- Skilled, knowledgeable and conscientious stockmanship
- Appropriate environmental design
- Considerate handling and transport
- Humane slaughter.

2. Animal welfare can be improved by a number of strategies:

- Education - continuing education of the custodians of animals to observe their animals and meet their physical and behavioural needs. Codes of best practice/QA programmes are excellent education tools
- Research - supporting new research and utilisation of best available information via co-operation between producers, scientists, regulators and animal welfarists. Examples of co-operation between interested parties include the National Consultative Committee on Animal Welfare (NCCAW) which advises the Commonwealth Government on a range of production animal welfare issues and (State)

Animal Welfare Advisory Committee (AWAC) which performs a similar role to NCCAW at a State level

- Legislation - legislation in the form of Acts, Regulations and Codes of Practice is necessary to ensure a minimum standard of animal welfare. However, "as you cannot legislate for co-operation" legislation should be used sparingly
- Commercial - client demand and price signals encourage modification of husbandry, eg following extensive surveying of consumer buying preferences, the RSPCA in the UK have launched 'Freedom Foods' which targets a niche market for food produced by certified welfare-friendly production systems.

#### *Issues/Activity*

*Transport* The transport of all species can be a problem in Australia due to long distances and climatic extremes, and the contraction of abattoirs to the eastern seaboard has accentuated the problem in Northern Australia. Interestingly, many commercial operators (feedlotter, meat processors and transport companies) are starting to implement feed/water and rest regimes well in excess of the basic standards in the model Code of Practice. These 'best practice' standards approach those being proposed for the EU and are driven by improved livestock performance and a more consistent/better product quality.

The export of sheep to the Middle East, cattle to Asia and goats to Asia generates considerable debate, and the level of mortalities in the case of sheep and goats is considered unacceptable by many people. The Meat Research Corporation (MRC) has funded over \$2.5 million of research into live sheep exports, with the main cause of mortality being established as failure to eat. Some lines of sheep, especially fat, older wethers exported in spring are at greatest risk. The search for risk factors and practical solutions continues. The Western Australian Department of Agriculture has conducted most of the research.

In 1994 the MRC funded a review of research into stock handling practices. Information from this review is assisting development of QA programmes for export livestock and land transport within Australia which are currently being undertaken by several industry groups. This review was conducted by the Queensland Meat and Livestock Authority.

#### *Cattle*

*Calf rearing/handling* The rearing and handling of dairy calves is a sensitive animal welfare issue. In late 1995 a system of rearing calves in isolation to produce pink veal also attracted interest. The current extension thrust by the Victorian Department of Agriculture and dairy factories is the promotion of replacement heifer management to ensure well grown and more productive heifers when they enter the milking herd at 2 years of age. This thrust will help improve calf rearing in general.

*Spaying* Surgical spaying of cattle without anaesthetic is a contentious issue. 'Vaxtrate', a vaccine against pregnancy, was developed with support from the MRC; however it requires two vaccinations (and hence two musters) and is less than 100% effective, thus limiting its usefulness.

*Induction of calving* Induction of calving is an important management tool for reducing culling and lost production due to late calving in seasonal calving herds. It should be used with care and compassion and not as a crutch for poor stock/nutritional management. It is considered a welfare issue because of the reduced viability of the premature calves born as a result of induction and the increased susceptibility to disease of induced females. Producer education in the responsible use of induction of calving is ongoing.

*General* Heat stress/shade in feedlots, pre-conditioning/education of weaners and use of electrolytes during transport are other areas of R & D activity. Assessment of the impact of livestock handler attitudes on production is also being undertaken.

#### *Sheep*

*Tail docking/castration* The need to tail dock was reassessed recently by Melbourne University. Whilst tail docking was not found to be essential in prime lamb production, failure to tail dock did result in greater risks of fly strike, subsequent reliance on chemical control and associated potential residue problems. A comparison of the pain associated with various husbandry practices (including tail docking and castration) has been undertaken recently at the Victorian Institute of Animal Science (VIAS).

### *Pigs*

The Pig Research and Development Corporation has funded considerable welfare-related R & D with the focus on issues raised in the Senate Select Committee report on the intensive industries. Of particular note is the work done at VIAS on the effect of livestock handler attitudes on pig welfare and productivity. This is being translated into training courses for livestock handling.

A workshop in September 1995 identified several key opportunities for future R & D and these included:

- Incorporation of animal welfare into QA programmes.
- Assessment of the impact on welfare of new and evolving production systems.
- Public perception surveys.

### *Poultry*

The poultry industry has limited funds available for R & D due to the relatively small size of the Australian poultry industry by world standards. The poultry industry tends to draw heavily on overseas R & D. Local environmental and genotype factors will ensure R&D is undertaken in Australia.

The recent review of Codes of Practice for layer hen housing involved the use of scientific and economic impact studies by suitably qualified experts. Major interest groups were actively involved in the entire process. The need for a national approach to Codes, regulations and legislations also became apparent.

## **IS PROSCRIBING CRUELTY ENOUGH? - THE NEED FOR GREATER REGULATION OF WELFARE**

*G. OOGJES and S. SHEPPARD*

Australian and New Zealand Federation of Animal Societies (ANZFAS), PO Box 1023 Collingwood, Vic. 3066

Increased concern over welfare issues in the farming industry both worldwide and locally is evidenced by the following: the growth in animal welfare and animal rights lobby groups; the expanding range of welfare issues in farming addressed by the RSPCA, as illustrated by the successful 'Freedom Foods' campaign in the United Kingdom; a growth in consumer demand for 'free range' animal products; high profile campaigns such as that opposing the export of bobby calves from the United Kingdom; the review of animal welfare legislation by governments in all jurisdictions in Australia since the 1980s; and the establishment of Animal Welfare Advisory Committees in most Australian jurisdictions.

The regulation of animal welfare in the farming industry is largely tied to practices acceptable to industry. The aim of this paper is to highlight certain practices which have serious implications for animal welfare and which are condoned or, at least, not prevented by existing regulatory mechanisms, and to argue for the assumption by government of a more prominent role in ensuring that adequate animal welfare standards are defined and observed.

Animal welfare standards are considered adequate by ANZFAS if they are designed to not only prevent cruelty, but to ensure the adoption of management practices which eliminate significant, avoidable suffering. ANZFAS considers that significant suffering may result from the denial of opportunities to express a range of important natural behaviours, such as movement without unreasonable restriction and nesting behaviour, as well as any failure to accommodate physical needs, such as for food and water.

### *Welfare issues*

*Intensive production systems* In the context of intensive systems, the maxim that a viable farming enterprise relies on the maintenance of high welfare standards does not hold true. Mortality rates of 12% for battery hens, 5% for broiler chickens and 10% for piggery sows (ANZFAS 1989/90) are acceptable losses in economic terms. The welfare of these animals does not become a commercial concern until such rates are exceeded. This is unacceptable from a welfare perspective.

Public concern over intensive farming practices is evidenced by a growing demand for free range eggs. In New Zealand, over a 12 month period between 1994 and 1995, during a campaign by welfare groups for a Citizens' Initiated Referendum on the banning of battery cages in egg production, free range egg consumption increased from 5% to 20%. Indications that the demand for free range eggs or non-

cage eggs in Australia may also be increasing include introduction on to the market of 'Barn Laid' eggs and the proposed introduction of a system of accreditation for non-cage egg producers by the RSPCA. Despite some level of public concern and the fact that welfare problems associated with battery hens have been well documented (Appleby 1991), a review of hen housing conducted in 1993/94 resulted in industry causing a 1992 agreement to increase the space allowance for all birds to 600 cm<sup>2</sup>, in a revised Poultry Code, to be rescinded.

Similarly, industry has been slow to bring about changes to practices in piggeries. Despite the developing Model Code of Practice for the Welfare of the Pig stating, in the 1992 draft, that tethering sows is unacceptable, the Parkville Piggery at Scone in N.S.W., which houses 25 000 pigs, continues to tether its several thousand sows. A review in 1990 of an earlier (1983) version of the Code concluded that the Code had had little impact on management practices (Winfield 1991).

*Live sheep exports* It is a basic tenet supported by all welfare groups, that the place of slaughter of an animal should be as close to the point of production as possible. There are enormous welfare problems posed by live sheep exports, including an annual death rate of sheep exported to the Middle East of over 200 000 and death by the halal (ritual slaughter) method without any, or any adequate, pre-stunning (Oogies 1995). Increasing live sheep exports (after a period of decline following the banning of exports to Saudi Arabia in 1991) is inconsistent with an adequate regard for welfare. Contrary to industry claims, much of this trade cannot be justified on cultural grounds, that is, that 'hot meat' (from fresh kills) is required rather than carcasses from animals slaughtered elsewhere. In the 4 years during which live sheep exports from Australia to Saudi Arabia dropped from 3 million (in 1988/89) to zero (in 1992/93), Australia's export of carcasses to Saudi Arabia more than tripled, taking at least one third of the former live sheep market, demonstrating a significant increase in the marketability of carcasses. Recent trial exports of sheep to Indonesia are, similarly, not a response to a demand for 'hot meat', but an opportunistic response to the availability of room on boats exporting cattle from a West Australian port. Apart from the welfare issues raised by sea transport, the welfare of these sheep upon arrival in Indonesia is seriously jeopardised by inadequate transportation systems, slaughter by halal without pre-stunning and confinement in feedlot conditions inferior to those in Australia (Paterson 1995; statements to NCCAW by AQIS representative, November 1995).

*Mulesing* Flystrike poses a major welfare threat for sheep, but alternative measures could substantially displace the need for mulesing on the scale on which it currently occurs. Good husbandry techniques can reduce, if not eliminate, the incidence of flystrike. The selective breeding of sheep, the selective use of chemicals and strategies to reduce fly numbers, including traps and possible genetic controls, represent other approaches to the problem (Pope, in press). However, mulesing continues to be the standard response by industry to the problem of flystrike.

### *Strategies for improving welfare*

The above examples indicate that self-regulation by industry, particularly through the development of Codes of Practice, is not working to adequately address animal welfare in the farming industry. The following additional strategies need to be pursued, particularly the enactment of adequate legislative standards on welfare.

*Information about alternatives* Both industry and government need to take a more active role in informing producers about alternatives to current practices which are inconsistent with adequate welfare standards, and in providing assistance in managing change.

*Informing the public* As argued above, there is strong evidence to suggest that animal welfare is a matter of significant public concern and growing evidence to suggest that a well-informed public would, in certain instances, be prepared to exercise consumer choices consistent with the maximisation of animal welfare. Honest product labelling to indicate the type of production system used would represent a major advance. At present, labelling can be misleading; for example, when cartons packaging battery eggs depict scenes of free ranging chickens, accompanied by descriptions such as 'Fresh Range'.

*Legislative standards* Animal welfare legislation in Australia focuses on wanton acts of cruelty to animals, that is, the intentional infliction of pain or suffering. Legislation does not generally require the adoption of management practices in the farming industry which recognise a standard of animal welfare which goes beyond the simple prevention of cruelty. Successful prosecutions for cruelty towards animals in commercial use are therefore rare.



The only detailed enunciation of principles for animal management are to be found in Codes of Practice. Codes are generally not legally enforceable and there is usually no other incentive for compliance. There is no penalty for breach of a Code unless it amounts to cruelty under animal welfare legislation. Codes of Practice are often not complied with and it is doubtful that producers rely heavily on Codes for guidance. In 1990, Winfield (1991) found only 'moderate' awareness amongst pig producers that a draft Code existed and little evidence of familiarity with or use of the Code by producers. Of greater concern than the issue of non enforceability of Codes, is the use of compliance as the basis of a defence to a cruelty charge (as is provided for in most Australian animal welfare Acts). However, there is little scope for making Codes of Practice enforceable without changing the nature of Codes. At present Codes are broadly cast on account of their advisory status. The creation of criminal liability would require far more precisely drafted provisions and the re-modelling of Codes in this way would diminish their advisory and educative value.

It is preferable that Codes remain as educative tools and that legislation incorporates welfare standards from which Codes of Practice must not depart. Without being prescriptive in every instance, legislation should be moulded around the principles of best practice in animal management and not simply prohibit intentional cruelty. For example, legislation should provide that: the design of a production system should not be inconsistent with the satisfaction of physical needs or the expression of important natural behaviours; and mutilations must be able to be justified as the best options reasonably available to protect animal welfare. Departures from these standards should have to be approved following independent scientific assessment and community consultation.

## **CONCLUSIONS**

*J.C. PETHERICK*

Dept of Primary Industries, Swan's Lagoon, Millaroo, via Ayr, Qld 4807

In recent decades there has been a weakening of the links with the land, due to the increasing rate of rural depopulation. As a result, the understanding of agriculture by urban communities is poor. Increasing exposure of these communities to media reports of farming practices which have detrimental effects on livestock and the environment have led to the development of a negative urban attitude to farmers and their practices. Furthermore, increasing public concern about animal welfare and the environment will impact on trade. These trends will not disappear and, if anything, will increase.

It is evident that some of the disenchantment, expressed by the general public, with farming practices is warranted. For example, amongst some producers there appears to be limited knowledge and application of the codes of practice for the care of livestock. Whether legislative changes are required to rectify this situation, or whether this can be achieved by other means, such as improved selection and training of stockpeople, is open to debate. It is also clear that some husbandry practices do cause pain and suffering to animals. The livestock industries must increase support for research into, and adoption of, alternatives if they wish to allay the public's concerns.

Land degradation in the form of loss of habitat for native species, invasion of exotic shrubs and poor quality of catchment water are all a direct consequence of overgrazing by domestic livestock. However, research indicates that sustainable land use is not only possible, but also economically viable. Farming practices will have to change not only to rectify the current situation, but also to ensure the survival of the agricultural and livestock industries.

There are bound to be biases in the various groups which have an interest in the use of land and animals, but little or no progress will be made whilst extreme views are held. Progress will be achieved only by open discussion and compromises being made with the aim of achieving a satisfactory balance between production, welfare and environmental issues.

## **REFERENCES**

- ABS (1993). "Environmental Issues: Peoples' views and practices - May 1992". (AGPS: Canberra).
- ABS (1995). "Environmental Issues: Peoples' views and practices - June 1994". (AGPS: Canberra).
- ANZFAS (1989/90). Submissions on intensive farming to Senate Select Committee on Animal Welfare (Hansard).

- APPLEBY, M.C.** (1991). "Do Hens Suffer in Battery Cages?" (The Athene Trust: UK.)
- ASH, A.J., McIVOR, J.G., CORFIELD J.P.** and WINTER, W.H. (1995). *Agric., Ecosys. and Env.* (in press)
- ASLIN, H.J. (1994). *Aust. Biol.* 7: 49-57.
- ASTEC (1993). Australian Science and Technology Council. Research and Technology in Tropical Australia. (AGPS: Canberra).
- BROWN, J.R. and McIVOR, J.G. (1993). *Proc. 14th Asian-Pacif. Weed Conf.*, Brisbane, pp. 471-4.
- ECKERSLEY, R. (1993). *The Futurist* 27: 8-12.
- GARDENER, C.J., McIVOR, J.G. and WILLIAMS, J. (1990). *Proc. Ecol. Soc. Aust.* **16: 279-86.**
- HARRISON, R. (1964). "Animal Machines: The New Factory Farming Industry". (Vincent Stuart: London).
- HILEMAN, B. (1995). *Chem. & Engin. & News* 73: 8-17.
- KENNEDY, J.J., FOX, B.L. and OSEN, T.D. (1995). *Rangel. J.* **17: 127-32.**
- LONSDALE, W.M. (1994). *Aust. J. Ecol.* **19:** 345-54.
- McKENZIE, F. (1994). "Regional population decline in Australia: Impacts and policy implications". (AGPS: Canberra).
- MORTON, S.R. (1993). *Rangel. J.* **15: 145-53.**
- OCKERBY, J. and ROPER, H. (1994). In "Farm Surveys Report 1994" pp. 88-90 (ABARE: Canberra).
- OOGJES, G. (1995). Animal welfare aspects of live export of sheep to the middle East. (ANZFAS: Melbourne).
- OXLEY, A. (1995). In "Outlook '95" pp. 114-9. (ABARE: Canberra).
- PATERSON, I. (1995). *Australian Farm Journal*, Sept. 1995 p.36.
- PITT, M., SINDEN J. and YAPP, T. (1995). *Aust. J. of Soil and Water Cons.* 8: 3-8.
- POPE, S. (1995). Mulesing (ANZFAS: Melbourne) (in press).
- THUROW, T.L. (1991). In "Grazing Management: An Ecological Perspective", (Eds R.K. Heitschmidt and J.W. Stuth) pp. 141-160 (Timber Press: Portland OR).
- TOTHILL, J.C., NIX, H.A., STANTON, J.P. and RUSSELL, M.J. (1985). In "Ecology and Management of the World's Savannas", (Eds J.C. Tothill and J.J. Mott) pp. 125-141 (Australian Academy of Science: Canberra).
- TOTHILL, J.C. and GILLES, C. (1992). *Trop. Grsld. Soc. of Aust. Occ. Pub. No. 5.*
- VINING, J. and EBREO, A. (1991). *Soc. and Nat. Res.* 4: 177-96.
- WINFIELD, C.G. (1991). In "Bureau of Rural Resources Working Paper", No. WP/8/91, p. 10.