

PRESIDENTIAL ADDRESS

THE ANIMAL INDUSTRIES - RESPONDING TO CHANGE

J.H. TERNOUTH

President, 21st Federal Council, Australian Society of Animal Production
Dept of Agriculture, The University of Queensland, Qld 4072

INTRODUCTION

The 21st Biennial Conference of our Society provides a major opportunity for all who are concerned with animal production to come together to present and hear reviews, contracts and papers, and become involved in debate and discussion of recent progress in animal production. We seek to establish how the latest findings become relevant and embedded in our understanding of animal production systems and the practicalities of sustainable animal production.

Over the 42 years since it was formed, our Society has become a mature and robust organisation, playing a significant role in the animal industries. This is the 21st Biennial Meeting and a suitable time to reflect on the Society. Included in these proceedings is an account of the early development of our Society by Rodger Watson and the late Bob Hayman. It is appropriate that this history be recorded by two persons who were so closely associated with its foundation and development. In the early days of the Society, the important breeds included Leghorns and Berkshires and Jerseys and Southdowns; drugs included Dieldrin and Lindane and Strain 19 and production was measured in pounds of 60-64s wool. A good cow produced a pound of butterfat each day! How terminology, technology and thinking have changed!

ANIMAL PRODUCTION INPUTS

Biologists recognise that the fundamental inputs into agriculture are water, nutrients and energy. All these inputs to both plants and animals provide us with food, drink and fibre, and provide an adequate style of living for the producers. This Society is concerned with the interactions between these inputs in the arena of animal production which represents 50% of the total value of Australian farm production.

This ancient continent of Australia, which was once better watered than it is today, has a seasonal rainfall supply and soils with a limited water holding capacity, so that forages are often of poor quality, especially in the dry season. The same soils and plants are often deficient in one or more nutrients. The soils are fragile and require careful management to be maintained in a fertile state. Soil erosion due to overgrazing or overtilting has been observed in many parts of Australia. These soils may eventually rejuvenate but this process is slow and may be further slowed by the variability of the climate; drought, heavy rain and cyclonic conditions reduce the speed of rejuvenation.

The impounding of water for stock and irrigation supply has intensified animal production in Victoria and New South Wales, particularly in the Murray-Darling Basin. In these States 60-80 % of the divertible run-off is stored and utilised, largely for irrigation. The opportunities to extend the water storages, particularly in northern Australia, appear to be limited and the development of another viable irrigation area may take as long as the Ord Scheme. Consequently, further development of plant and animal agriculture will be dependent on the more effective use of the available water in these irrigation areas, not only to water the crops and pastures but to maintain the quality of the waterways.

Development of the artesian water supplies has been important in many of the semi-arid areas of Australia, but the increased access to water has resulted in an increase in the native and feral animal populations, too. The outcome has been that both they, and domestic animals, have been heavy consumers of native vegetation and have affected the sustainability of these regions.

In recent years, the association between rainfall and the Southern Oscillation Index (SOI) has been developed as a predictor of likely rainfall in the following season. This is particularly important in Queensland as there is greater year-to-year rainfall variability than in Victoria. The real question is how the SOI can be used effectively in achieving efficient sustainable animal production.

Soil nutrients, water and solar energy provide an additional input into animal production systems in the form of feed. Scientists expend considerable thought and human energy in matching the climatic

cycles found in the various areas of Australia with the production cycles of the animals.

Solar energy has a more direct effect on the animal industries. In the southern climes, winter temperatures are low, resulting in the need for protection for the animals whilst further north, particularly in the summer, solar energy has direct negative effects on the fertility of both male and female stock and on their food intake. This is probably most evident in the dairy industry, where solar loads and metabolic loads have additive effects upon body temperature, resulting in major reductions in food intake.

Other inputs into domestic animal production such as capital and labour are also important. These economic inputs are used to influence how the primary inputs are utilised in animal production; that is they are used to ensure the quality, quantity and sustainability of production.

ANIMAL PRODUCTS

Two years ago the Australian Institute of Agricultural Science compared the potential for further development of the plant and animal industries in Australia. Animal production uses 440 Mha of the 460 Mha of farmed land in Australia, particularly extensive beef cattle and sheep production from unimproved pastures. In spite of this, the Institute concluded that there was more opportunity for further development of the cropping industries on 20 Mha than for the animal industries on 440 Mha, particularly by the development of new crops.

The animal industries provide animal products to an expanding national population with the balance sold on the overseas markets in competition with other countries. Over 90% of the wool, 50% of the beef and 25% of the dairy products are exported, which places different market pressures on these industries when compared to the industries responding to national pressures alone. The two cattle industries are good examples of industries that must respond to both market forces.

Over 50% of Australia's beef is produced in Queensland, and much of this product is sold overseas. The size of the industry has not changed substantially over the last 10 years. The variability of supply of meat to the export market is a major disincentive to overseas buyers, who have to contend with the volatility of their overseas markets at the same time. The associated feedlot industry is, at least in part, opportunistic; that is it is more heavily utilised when store cattle or feed are cheap or high prices are forecast for slaughter cattle. The recent development of a substantial live export trade, particularly to S.E. Asia, is important, as it can be a stable market and avoids all costs associated with feedlotting and slaughter. This trade has the potential to reduce the northern Australian industry to that of a cattle breeding farm. On the other hand, southern beef is mainly sold off-pasture to the domestic market where there is a constant demand, and prices tend to be more stable.

The dairy industry has almost the opposite demography and production pattern. Sixty percent of the dairy industry is based in Victoria whilst production from the small Queensland industry is almost exclusively for the domestic market. As this relatively more intensive industry is based on feeding of improved rain-fed and irrigated pastures, production is increasing steadily. The 44% increase in production/cow over the last 10 years converts to a 36% increase in total production as both the number of herds and number of cows have been reduced over the same period of time. Particularly noticeable has been the 60% increase in production/cow in Queensland. The future of the Australian industry is dependent upon the stability of the overseas market for the range of products that are produced.

The horse industry is a major animal industry that is often neglected even though it is involved in the provision of fillies and colts for the saddle racing, harness racing and leisure industries. It has been overlooked by this Society, although the late Geoff Pearce, a Fellow of our Society, was involved in research on horse nutrition. Other animal industries largely overlooked by the Society include fish and crustacea, emus, ostriches, llamas, mohair and cashmere goats etc. Some of these animal industries may never be large, but collectively they will assist in diversifying animal production.

RESEARCH AND DEVELOPMENT

Reductionist science has been the major research tool used by most of the scientists attending this conference. In fact, it has been the major tool used in quantifying research in all animal production disciplines. This tool is similar to those used by economists; both reduce the complexity of their subjects to simple, linear, quantifiable comparisons. As scientists and producers, we must be wary of the oversimplification of such an approach.

The alternative to the reductionist science approach is to embrace the systems approach for solving problems in the animal industries. Consider for a moment the complexities of heterogenous extensive

rangelands where a number of domestic and wild herbivores graze intermittently and where parasite populations are basically unchecked. These are truly complex systems and ones in which the problems cannot be easily be described by reductionist science.

Some years ago, I was involved in the presentation of a paper to a previous meeting of this Society on the development of a farmer-led organisation to influence the direction of applied dairy research. The Northern Dairy Group is now recognised as a significant adviser to the Dairy Research and Development Corporation on the northern dairying region which spans Queensland and northern New South Wales. Similar groups have been developed in other areas and with other corporations, for instance, the Northern Australian Beef Research Council with the Meat Research Corporation. These developments are valuable as they acknowledge that the farmers are the clients as they use research results and their levies pay for much of the research. As a result, the determination of the research agenda has swung from the scientist to the producer, but like so many pendulums, it remains important that the scientist remains involved in determining the research agenda. The scientists are at the cutting edge of their disciplines and may perceive the potential of further research initiatives. If the industries ignore the recommendations of the scientist, the result will be to damage the industry in the short and medium term.

EDUCATION, TRAINING AND EXTENSION

The 1991 McColl Report to the Commonwealth Government indicated there were over 30 institutions providing training in agriculture and related disciplines in Australia. Many of these institutions have only small numbers of students, and their viability, entrance standards and breadth of expertise of their staff are a cause for concern. Although the recommendations of the McColl report have been ignored by the politicians, a number of institutions have responded to its findings. For instance, the University of Queensland is re-evaluating the curriculum of the new Faculty of Land and Food Systems, which spans the Gatton and St Lucia campuses.

In Australia, the level of education of primary producers is low, especially when compared with those in Europe and North America. Only a small minority of Australian farm decision-makers have tertiary qualifications. I do not wish to imply that education will necessarily ensure a more profitable farm. The Kondinin Group did not find any relation between education and farm productivity in their 1995 study, although they did find that farmers with tertiary education were more likely to have other employment. Such employment would have the effect of stabilising farm and family income in the same way that mixed farming is more stable than a monoculture.

There is increasing interest among some farmers' organisations in encouraging the managers and employees on farms to receive training at a variety of levels. The National Training Standards is a sound proposal in this direction. The initiatives of some forward-thinking farmers' organisations in having a 'trained operator' on every farm by the end of the century is very commendable. Given the increasing sophistication of farming, the decrease in the number of farm staff, the need for more careful use of agricultural chemicals and the increasing complexity of marketing, there is definitely a need for such training.

The agricultural extension sphere has been dominated by state department officers who provided a service to individual farmers. In the last 10 years, the cost, need and efficiency of this service has been questioned by politicians. Traditional extension services are being replaced by decision support systems, frequently delivered by down-stream companies, for instance dairy factories, and by private consultants. It follows that farm decision-makers need to be determining their business plan and making competent operational decisions based on a consideration of reliable information. This includes using various electronic information services. Again, this indicates the need for the farm decision-maker to be better provided with options and understanding as a result of better education.

I suggest that the future for Australian farmers lies in being better trained and educated, thereby improving the standards of technology and management of their properties, and the quality of their produce. This will involve both further 'in-house' training of the present personnel and the education of the younger generation. This, in turn, will lead to the need for better-trained support services from government, from private consultants and from commercial companies.

THE IMAGE OF THE ANIMAL INDUSTRIES

The majority of Australians are urban dwellers who have limited understanding of the problems faced by the animal production industries. However, these urban dwellers do know when the price of their favoured foods increase. They do hear the tales of unrelenting gloom and doom as parts, often quite

limited parts, of our continent are flooded with excess rain, or suffer from drought, or are burnt-off in a **bushfire**. These events are newsworthy. They do not hear when the industries are prospering; that is not newsworthy. Sometimes, they hear when the prices of commodities fall below cost, but rarely when the prices are good. They hear when BSE creates a human-risk tragedy, when the papaya fruit fly is found in the northern banana crop and when a rabbit virus escapes from a South Australian island. Given all this negative reporting, who would ever think of farming or become an agricultural student? More particularly who would take up dairy farming with 14 milkings each week? In spite of all this negativity, there are 70,000 medium-sized rural managers who are producers of animal products in Australia.

We live on a relatively dry continent with highly variable weather conditions, so that somewhere the weather is sure to adversely affect some farmers. The isolation of Australia has meant that many plant and animal diseases have not arrived on these shores; this advantage should be spelt-out to our urban friends and clients.

In the last ten years, the animal welfare lobby has been heavily involved in limiting cruelty and misuse of animals, be they in a laboratory or on the farm. This has been a constraint on both scientists and farmers, but the results have generally been positive, and have been supported by this Society.

Looking forward, in the same way that the Society took a positive attitude to animal welfare, I suggest that we should be supporting the development of networks to tell the good news about our animal industries, as well as to modify bad publicity. There is a need to set right the record.

THE SOCIETY OF ANIMAL PRODUCTION

Our Society is concerned with supporting the further development of the animal industries. Our Federal Biennial meetings continue to draw large attendances but in recent years, the numbers attending branch meetings have fallen. Some branches, even the very large branches, have been concerned about this change, and one has held a crisis meeting recently. Branch meetings were an ideal opportunity for staff from the different institutions to interact in a substantial way. However, because of the increase in the range of more specialist societies available for the presentation of results, the development of farmer-led organisations, CRC committees, etc, and the changes in institutional staff numbers and expertise in many disciplines, the impetus for branch meetings of the Society has waned. I suggest that the Society needs to consider redirecting its focus, perhaps in co-operation with other societies and perhaps to concentrate on animal production systems and mixed farming systems.

Many papers in the earlier biennial meetings of this society were concerned with using a range of on-farm techniques to overcome the technical problems limiting production. The emphasis of the individual meetings varied, tending to reflect the solutions being developed in the locality of the Federal Council as the host for the biennial meeting. The emphasis in the later meetings has widened to include aspects of resource management, animal welfare and product quality. This is part of the increasing maturity of the Society and our deliberations.

IN CONCLUSION

Bill Pryor, a former President of this Society, said in his own very personal style that presidential addresses..... are probably most avidly read by subsequent presidents searching for erudition and inspiration". I trust that in my efforts to encourage us all to reassess the role of the Society, I have provided some food for thought. May such thoughts about our future, our research, our development, our education and training programs lead to activities which will help to ensure sustainable, stable and viable animal production industries in the 21st Century. This Society, I am sure, will remain the servant of the animal production industries although the form of this service will no doubt change.

At this 21st biennial meeting, let us develop our discussions, interactions and networks during this week - and in the weeks and months ahead - to make this a stimulating and memorable conference. Your Council has prepared a program of invited speakers and contracts that will certainly stimulate this process. It is one way in which our Society can ensure its future.