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PRESIDENT'S ADDRESS – ANIMAL PRODUCTION AND THE NEW REALITIES

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Welcome to the 2004 Biennial Conference of the Australian Society of Animal Production.

A major outcome sought from this Conference is that we to go forward, each in his or her own career, each supporting and being supported by a network of dedicated colleagues to deal with industry challenges now clearly apparent or yet to emerge. The ways in which we approach the challenges will not be uniform. Success will be dependent on diversity in lines of attack, and measured as effective collective progress over time, rather than an event dependent on a sudden breakthrough.

For this Conference, therefore, we have set the context as a reality check. It is easy to look at successful steps in research and raise enthusiasm for investigation, but all investigations do not end in commercial success immediately. Research, development and implementation, therefore, require patience, healthy competition and ongoing review. Further, success is perceived at a time and in a given context – and a good question to ask is "supposing we are successful, what then are the further consequences"? The new realities we talk about are conditions that will influence the ongoing success and the potential for change, and that will dictate a need for adjustment. Sustainability of a production system, for example is not a state that can be achieved by a fixed recipe, but requires effective and timely responses that both utilise and maintain the resilience of a system to permit continuous improvement.

Do we have a clear understanding of the competitive advantages our industries enjoy? Do we have a clear and realistic strategy for the development and application of emerging technologies? Do our research portfolios stand the tests of present net value, of cost and benefit, and future value; of something for today, but more for tomorrow? Do we appreciate the full ramifications of quality assurance, the risks and threats we face in the market place, and the way in which accountability can be built into proactive management rather than sheeted home after events? Do we have the human resources and the educational and training programs that are essential to the delivery of success in the face of all the challenges?

It's a huge challenge in itself to configure our discussions around these issues, but if we do not do it , who will?

I want to take the opportunity to trace advances in RD&E in Animal Science and Production and the contributions made by members of this Society. I do not intend to be encyclopaedic or to name names, but to look at a metaphor that I think applies to the last 50 years journey for livestock industries and current knowledge that will underpin progress in the future. I am dedicating the effort to our mentors, our colleagues and particularly the early career delegates who look forward to engagement into a distant future. The lessons are as much about perseverance of individuals as well as big team efforts; of achievement with small amounts of funds as about multi-million dollar Cooperative Research Centres; and very much about the magnificent contributions of postgraduate students in research.

The progression in research and development in the livestock industries has been one of shifting emphasis and priorities, rather than total change in direction. The early adopter livestock managers, their advisers and the scientists in the membership of the Australian Society of Animal Production from its inception always had similar core values, but different views of the crux of challenge. Consequently, they had different ways of seeking a solution. Nothing was ever lost, but some things had to bide their time. New circumstances, advancing knowledge and new technical options have made previously unattainable objectives achievable. It is well worth the effort to go back and re-read even just the index of the successive 25 volumes of the Australian Society of Animal Production Conference Proceedings to get a feeling for the patterns of advance. It may also save some re-inventing of the wheel.

I use as a simple metaphor that branch of the discipline of mathematics, geometry, in many of my discussions with colleagues and students. There are basic truths called axioms and other assumed concepts called postulates. Knowledge of these allows the raising of theorems that are a way of establishing a strategically useful, but more complex, truth. There are then ways of rearranging terms of a theorem and establishing corollaries that are valid alternative expressions or interpretations. There are then problems to be solved that involve the application of 1 or more appropriately invoked theorems and corollaries. The solution to any problem depends on the applicability of the theorems taken into consideration; and ultimately on the validity of the axioms or postulates that underlie the construct. In research and development, we need to challenge from time to time what we accept as axioms, we certainly need to revisit all postulates, and challenge our theorems and the way we invoke them in seeking solutions to problems. New knowledge, new paradigms, new options.

The strategic position of any livestock research stream has been focused in early phases on identification of factors limiting production, and gaining knowledge on the processes involved that may provide opportunities for removing those impediments. Whether the limitations have been seen from genetic, nutritional, metabolic, endocrinological, or behavioural stand points, successful innovations depend on bedding down management practices in a context of both the genotype-environment interactions and the economic cost-benefit climate. This framework led, in the applied research of the fifties and sixties to a steady shift in emphasis from qualitative and descriptive science to quantification. It led also to a move from expressing gains on a per animal basis, to per hectare, and to $ return per $ invested. This in turn then led to more complex constructs (models) to allow prediction of responses in complex situations, simply because out of the stocking rate era, it was obvious that empirical tests of every management alternative in every environment were an impossibility. As the modelling approach gained momentum, models not only allowed exploration of 'what if' questions, but also provided a vehicle for gap analysis. Areas of uncertainty or lack of knowledge became more recognisable, and became the target for a new cycle of scientific investigation from description and quantification, but also new options in manipulation. So around we go and, at each turn of the cycle, the model incorporates new knowledge and new options.

The challenges we face have been changing with social, political and economic developments – 'progress' if you like. We might like to think that the current situation is based on patchy aberrations in an otherwise steady state, but there is a lot of evidence that the trends are real. In some cases, the challenges are based on reality, in others on prevailing perceptions. It is useful to distinguish between these since our response may differ in terms of what the research, development and education focus, and the target audience or stakeholder group, should be.

Objectives in research are made up of combinations of the broad outcomes sought. In the competitive advantage context, there is a mix, albeit with different proportional emphasis, from among increased productivity, reduced risk of failure to supply on a timely basis, enhanced competitive advantage through improved product quality, improved opportunity for adding value, and development of new products attractive to consumers.

In the sustainability stakes, there is also a need to achieve outcomes as a public good and also as a private good in the sense of being a good neighbour and a steward of the system for future generations. The mix is among reducing and reversing adverse environmental impact; establishing the value of remedial actions compounded not discounted into the future; improving industry image in relation to animal welfare; reducing the risk of adverse consumer perceptions in relation to human health and ensuring the necessary and sufficient education and research programs for succession planning. Others have been invited as key speakers at this Conference to provide insights into such matters.

If the approach taken above seems an idealistic and sanitised view of the trajectory of our animal industries, I make no apology. I have, over the past decade or 2, seen a diminution of the perceived value of that level of research undertaken to reveal principles and processes. I also have seen as unhealthy removal of the concept of 'horses for courses' in research. Research is not an either/or, but a this-plus-that, affair. The ascendancy of quick-fix research to meet immediate industry objectives is understandable, but when it leads to the lack of funds to ensure our respected place at the table of new

knowledge, the something-for-tomorrow will sooner or later have to be borrowed or purchased from others on their terms. There are even areas in which the challenge is seen in this country as too great, and our human resources numerically too limited, to permit investment in long-term searches for solutions, so other countries gain a long term advantage. Perhaps the cycle is being completed as there is evidence that there is appreciation that we are living on knowledge capital and our clever country is increasingly unable to defend its title. I hope the emphases that have tilted the playing field in this way are adjusted.

In particular, I have over that time expressed concern about the inexpert application of expertise. To use another metaphor, we seem to be deploying experts in car design and automotive engineering to the task of selling cars. Car sales depend on the competitive advantages afforded by appeal, utility and perceived value for money of the product. Designers and engineers need to understand the context and objective in those terms, but their work on mechanical principles and processes depends on depth of knowledge of the laws of physics, capacity to think outside the square in invention, and being at the table to gain early access to new technology. They explore alternative modelling paradigms. Some of the divisions of labour required in improvement of animal industries depend on the mix of responsibilities of respective classes of institutions. Because of this, certain facets of research, development and education are variously more suited to action in some cases in Universities, in others in specialist Research Institutes and Centres, CSIRO, or Departments of Primary Industry and TAFE colleges. Cooperative Research Centres and taskforces drawn from the various research providers can address specific programs of research at each level, but the effectiveness depends the ability of the various people involved to work together and respect the contributions made by each team member. There is, however, above and beyond that a crying need to allow some space and time for creative individuals to go head-down at a unique idea.

In conclusion, we need to understand and continually evaluate the competitive advantages our industries have enjoyed. We need to exploit the emerging technologies without creating unintended consequences. We are at the whims of international markets, and must be able to substantiate our claims and our credentials. Importantly, we need to foster future generations of scientists to address these realities. I hope this conference provides valuable inputs, stimulates vigorous discussion and serves each of us well in our commitment to the success of livestock industries – success in the eyes of future generations.