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Animal industries in the 21st century - conclusions and challenges

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John Robinson demonstrated the world demand for food by the year 2100 would require a 2.5-fold increase in per hectare production. My reply is that we don't feed the world properly at present. Peter Fennessy talked of the barriers to trade by lobby groups (not consumers). The hungry people from the poor countries are certainly not throwing up these barriers. Rather, the relatively well-off Western Agricultural Farm Sectors who seek to preserve their standard of living.

The moral dilemma of food surpluses and hungry people is highlighted by the description of John Robinson's Europe, where land is taken out of production, in Great Britain especially, and paid for by the Government not to produce. The moral dilemma of an excess of food in the West and a shortage in Africa and South America will only begin to be solved if the vital GATT round being negotiated between now and the end of the year is successful in freeing up trade in agricultural products.

Lobby groups or self-interest groups will fight the liberalisation of agricultural trade in the world. Yet such liberalisation will enrich every country as the developing nations are allowed to export their agricultural production to the West. Even the rich countries will benefit when their standard of living rises, as they source cheaper food and are relieved of the enormous tax burdens which support farm subsidies. Parts of the agricultural sectors alone will suffer in some of these countries and this represents a relatively small number of people.

The EEC Penchmark for Over-production

Two years ago, Mr Joe Raine, then Head of the Beef and Sheep Section of the National Farmers Union, claimed during a drive around the Waikato with me that the answer to Europe's excess agricultural production was to ban one of the worst pollutants of their waterways - artificial nitrogen.

Today there was a division of view between John Robinson and Peter Fennessy: John was very hopeful for hard as well as soft technology, while Peter, perhaps afraid of low cost New Zealand agriculture getting on the technology roller coaster, favoured soft technology research. He favoured increased animal output by low technology improvement of breeds of sheep, cattle and species of pastures. John Robinson showed a practical approach and sense of balance when he warned that the reproductive physiologist is running ahead of the nutritionist's ability to feed the animal in a pastoral system.

As a person who works in a farming industry, where women play a major role, can I ask you, "*where are all the women?*" This Society, either does not favour or does not encourage women as members. The few present are quite magnificent, but even Gentlemen's Clubs, the most conservative of all institutions, now allow women to be present. Is it simply that women don't like working with large animals?

The basis for the Animal Production Society and for research work is to achieve the efficient production of fibre and healthy nutritious food for which there is strong demand. The objectives for an animal production scientists therefore, are to help farmers with more efficient animals and with more efficient farming practices, to produce food and fibre eagerly sought after.

If therefore, farmers, being closer to the market place are the litmus paper of your achievements, can you convince them that your MOET, CIDR, or Sire Reference Scheme, give him a return? How much time do you spend with living, thinking farmers? How often do you meet such people? And when you do have these experiences, do you find them wholesome, humbling, and an aid in keeping thinking and working relevant?

I can understand you and I must be patient. From the papers you have given, it is clear that transgenic mice are a small step to improved productive transgenic cows. The goal appears worthwhile. The study of

germline manipulation of livestock is equivalent to the study of the "stuff of life". A greater understanding of the "stuff of life" is worthwhile in its own right. Just as the developments of space technology spread out into the ordinary world, so the studies of transgenics will benefit human life.

Nevertheless, it is immediately relevant research that actually excites farmers. There is some exciting work going on at the Ruakura No. 3 Dairy now about appropriate length of grazing rotations and strategies in relation to both total and pattern of milk production and pasture maintenance. Did you know that in the last few years the despair of many farmers and the block to profit has been pasture deterioration? The seemingly inevitable slide toward open and unproductive pastures. Can this be reversed by grazing strategies? The other block to profit, often not realised by farmers, is excessive ownership and use of farm machinery. No. 3 Dairy, with its simple applied experiment may show the way.

During the Hawkes Bay and Waikato seasons, we allow animals to under-graze and over-graze pasture. For all of our talk as animal production people about rotational grazing, we have not yet developed the acute sensitivity needed to maximise production of pasture, and therefore animal production, and therefore production of pasture, and therefore animal production etc, etc.

Do research directors consult farmers about research priorities? Sometimes you will have to accept that farmers will press for more purposeful research work, particularly if they can see great commercial potential.

I have some other questions about research priorities. The animal geneticists don't seem to think sexed semen will contribute much to genetic progress. Yet on a recent visit to the Livestock Improvement Corporation in Hamilton two weeks ago, consultants talked of mating 15-month heifers to produce replacement heifer calves. They claimed this would give a lift of 10 Breeding Index (BI) points in the resulting progeny. Our replacement heifers are the highest BI cattle in the herd, replacing, as dams of future replacements, the lower BI cows. Based on one BI point being equivalent to 1.5 kg of milkfat, in an average herd, then 10 BI points equates to 15 kg of milkfat, which at \$5.00 per kg gives an extra income per cow of \$75 per lactation or \$375.00 per lifetime.

This is an enormous gain in profitability by anyone's standards. In addition the progeny of these higher BI heifers create a higher springboard themselves, for their progeny.

Doesn't sexed semen have some potential when you study the above? Farmers can source replacements from higher BI cows and excellent beef cross cattle from lower BI cows which he can supply to his sheep and cattle farming friends.

Sheep farmers need a lot of help from animal production scientists. Up until two years ago, New Zealand was the only country in which the sheep industry was not declining. This has changed. Farmers say it will take \$50.00 per lamb to keep them really interested in sheep farming now. To understand what they mean, consider this example of their much deteriorated "Terms of Trade". The average price for lambs received by the farmer from 1946-1960 in 1990 dollar terms was \$70.00 per lamb.

What can animal production scientists do to help? Further breed improvement for meat and wool. But animal production scientists must look at marketing goals as well, to keep their work relevant. Practically every paper at the Conference was on animal production. We have dealt with:

- the physiology of growth
- nutrition
- the physiology of reproduction
- molecular biology
- breeding
- parasitism.

Fair enough. This is the Animal Production Society. But I must ask what are we producing for? Animal production scientists need to understand that the market is people - with feelings, emotions and views.

Are these customers, the people of the market, saying they are happy to have farmers inject growth promotants into their beef cattle? I know they are not. I understand the New Zealand Dairy Board has banned

BST. For good market reasons, no doubt. The Dairy Board wants customers. No doubt the unilateral ban is unscientific on health grounds. If that offends you, then re-focus your thinking:

That animal production is about food production largely.

That people want natural wholesome food.

That your work should have the efficient production of natural wholesome food as its main goal.

Finally, I asked before, “where are the women?”. Now I ask, “where are the farmers?”. Draw them into your Society to contest and challenge your more intellectual approach.