

## PHARMACEUTICAL VIEW OF DEER INDUSTRY

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### INTRODUCTION:

The deer industry in New Zealand has shown remarkable tenacity, strength of purpose, considerable ingenuity and perhaps most importantly breadth of vision as it has developed during the past 20 or 30 years. Key individuals have arisen who have stamped entrepreneurial character on the industry. Throughout its development the deer industry has been nothing if not innovative from capture of feral animals as population base for farmed deer through a broad range of technologies to expand and enhance that base. These technologies have been coupled to the development of organisational structures and the various skills and expertise required to market quality product that secures the future of the industry.

Establishment of a global leadership role by the deer industry across many diverse facets has come from a very small base.

### SCOPE OF INDUSTRY:

The New Zealand national deer herd is continuing to expand (Table 1), but relative to sheep and cattle numbers, it remains a comparatively small population. However, from an international perspective, when the numbers of farmed deer are reviewed New Zealand is obviously a world leader. Analysis of papers presented in "The World's Deer Industries" segment of the World Deer Congress in Christchurch in 1993 revealed that New Zealand's farmed deer population is about equivalent to the rest of the world. Speakers at that congress, representing 14 countries or regions of the world, presented estimates of farmed deer of various types which totalled some 1.6 million deer. This calculation excludes reindeer which with some exceptions in Russia are usually herded, and in this sense are not "farmed".

For the year ending June 1992, New Zealand sheep and cattle populations are reported as being approximately 54,568,000 and 8,100,000 respectively. Trend data for these populations are shown in Figure 1.

Total value of animal health products sold for use in deer is not known. However, estimates of the dollar value of anthelmintic treatments and the number of treatments given are made by Farm Market Index and are shown in comparison to the sheep and cattle estimates in Figures 2 and 3.

As a result of the demands of sheep and cattle populations, new product development by pharmaceutical companies is targeted at meeting the needs of those larger and therefore more profitable markets. Once products are in development or actually marketed, efforts may then turn toward additional, smaller markets such as deer for expanded opportunities.

### ANIMAL HEALTH PRODUCT DEVELOPMENT:

The animal health pharmaceutical industry is also a relatively young industry. Broadly speaking it has developed within the cradle of the large chemical and human health pharmaceutical companies,

particularly those involved in basic and innovative research and development. In more recent times smaller independent companies have also arisen to service the animal health industry.

The process of innovative research and development of new products is becoming increasingly more difficult. Quite apart from the management aspects, it requires a coordinated multidisciplinary approach involving not only a broad spectrum of scientists, including formulation experts, but also production engineers, production chemists, regulatory and marketing specialists to name but a few. In the animal health business product development is a process that requires many years, usually 6-8 years; development costs can stretch to the hundreds of millions of dollars. Human health pharmaceutical estimates put development costs in excess of \$US350 million and require 10-12 years to achieve.

In assessing a go/no go option to develop an animal health product a project may compete with human pharmaceutical development on the basis of potential profitability and opportunity cost. In recent years it has been possible to better quantify the development costs, and the potential returns. Competition within companies for progressively scarcer resources has become even fiercer. Competition for market share has significantly increased as the animal health industry itself has intensified, and become progressively more sophisticated and conscious of costs.

Within companies, marketing and technical personnel are required to identify the specific market needs of animal production systems or animal ownership markets for animal health products. Identified market needs might be as diverse as the attainment of a competitive advantage, the introduction of a new product for the treatment and control of emerging diseases or enhancement of animal production efficiency. Increasingly, as increases in development costs have accelerated, a global approach to identification of market needs and market size has been taken. Potential market size is obviously a function of the number of animals available for treatment, the number of treatments required and the value of those treatments to the user. The global approach is not to the exclusion of niche product development and marketing, but global marketing is practised by the dwindling number of companies prepared to stay in animal health as innovative research based companies.

Competition for research (and marketing) resources has led not only to the establishment of absolute priorities for the development of new products but also to quantification of other economic values such as estimated sales over a defined period, likelihood of success and cost of new manufacturing plants. Preference has been given to products for those animal species which dominate the population - the major species - and usually these are production animals. Consequently lower priority is accorded lesser or minor animal species which are identified on a population basis or on the basis of the potential treatment occasions for a given product. Not only does this competitive pressure promote development of products for major animal species over minor animal species, it also compromises potential breakthrough products which might occur for commercially less attractive products.

## **CHALLENGES FOR THE DEER INDUSTRY**

The New Zealand deer industry has established, and is now expanding, a bold quality assurance management programme for venison and its co-products. An eventual requirement of this assurance programme will be the exclusion of animal remedies which are not specifically licensed for use in deer.

I believe this will focus attention on "off-label" use of products within the deer industry (and other animal industries) and provoke an in-depth review of the animal remedies which are required by the deer industry.

Veterinarians within the Deer industry will need to take a leadership role in this issue so that the needs of the deer farmer and the industry are well understood and that deer welfare is not ignored. The animal health industry alongside the regulatory authorities, may need to consider a registration process of animal remedies for "minor animal species" in this country. This is particularly important where the

minor species is a food producing animal and the industry producing it is committed to exporting product overseas.

Currently the "market needs" of the deer industry (in regard to animal remedies) are not always well known to the animal health pharmaceutical industry. Furthermore, there is little commercial incentive for animal health pharmaceutical companies to undertake registration of established animal remedies for use in deer. There is a need for the deer industry to stimulate commercial awareness within the pharmaceutical industry of the special market needs of the deer industry, its potential and its likely future.

Restructuring of research funding by the Government has led to highly competitive attitudes within universities and research institutions. There are not many "public good" funding opportunities for deer research and development projects. The new funding strategies mean that funding for minor species research is even more compromised than previously and this trend is likely to continue.

Individuals approaching fund providers have less chance of success than a co-ordinated unified approach of an industry. Individuals approaching companies on a "one off" basis can only attract limited funding and have haphazard success. A co-ordinated approach is stronger and more compelling.

One of the great paradoxes reflected by the deer industry is that the small size can also be a strength. The relatively small size of the industry allows everybody within to know each other and provides a vehicle whereby progress can be rapid because the industry infrastructure is not overburdened and slow to respond.

In the broadest sense the farmed deer industry has arisen out of diversification and it is generally true that the deer farmer is a sheep farmer or a cattle farmer. Whilst the pharmaceutical industry is generally aware of this farming diversity captured within a farming boundary, the deer industry has not exploited this strength. This is another feature of the industry which needs to be promoted and well understood by the pharmaceutical industry.

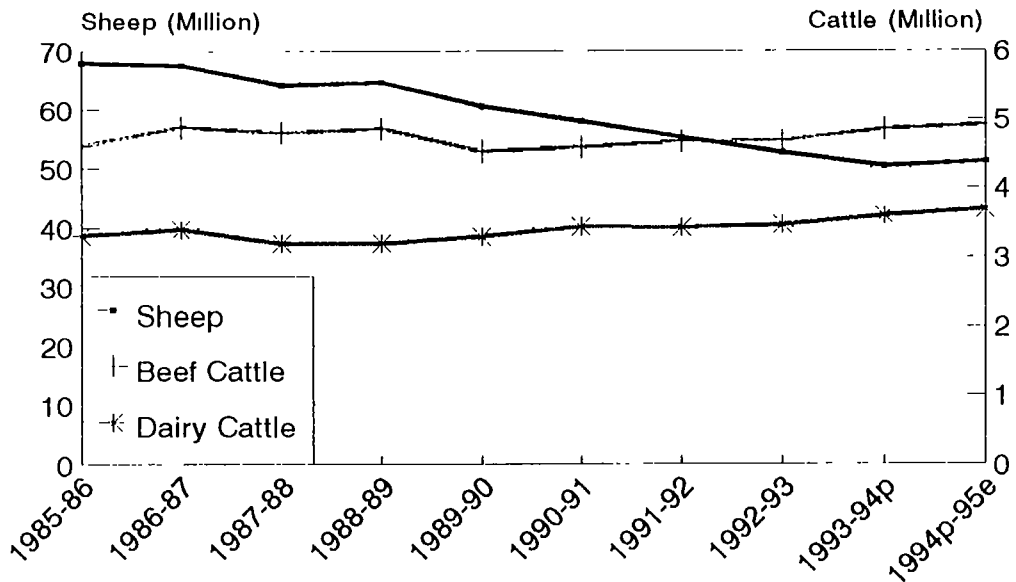
The deer industry has already established a strategic marketing plan for its products. It also needs to coordinate a research plan not only to establish its research needs, (its market needs for animal remedies), but also solicitation of the funding needed to achieve this and the priority required for each segment of that plan. Such a plan should initially concentrate on New Zealand, but it might also be possible to incorporate a global position. In my view this is a position which should be contemplated with some urgency.

TABLE 1

<b>FARMED DEER CENSUS</b>					
New Zealand deer numbers, year ended June 30.					
<i>Sources: Statistics New Zealand, Game Industry Board</i>					
Thousands of head	1986	1990	1991*	1992*	1993*
Breeding Hinds	-	509	617	643	622
Total Hinds	-	636	820	868	831
Stags	-	370	435	527	505
Total Deer	392	976	1,256	1,395	1,336
* GIB estimate					

## LIVESTOCK NUMBERS

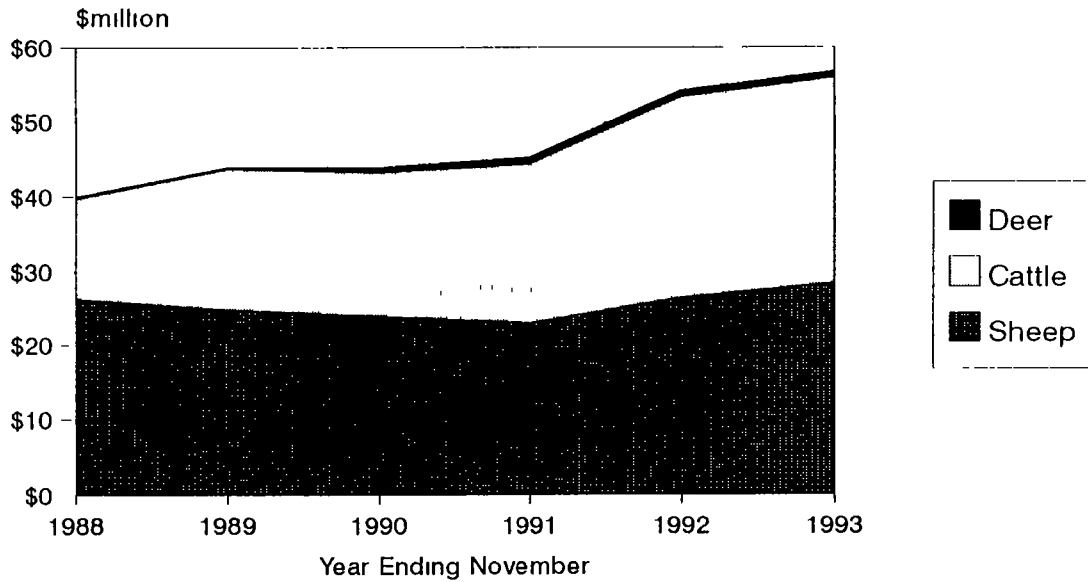
Figure 1



Source: Statistics New Zealand & NZ Meat & Wool Board Economic Service

## ANTHELMINTICS Market Value of Farmer Purchases

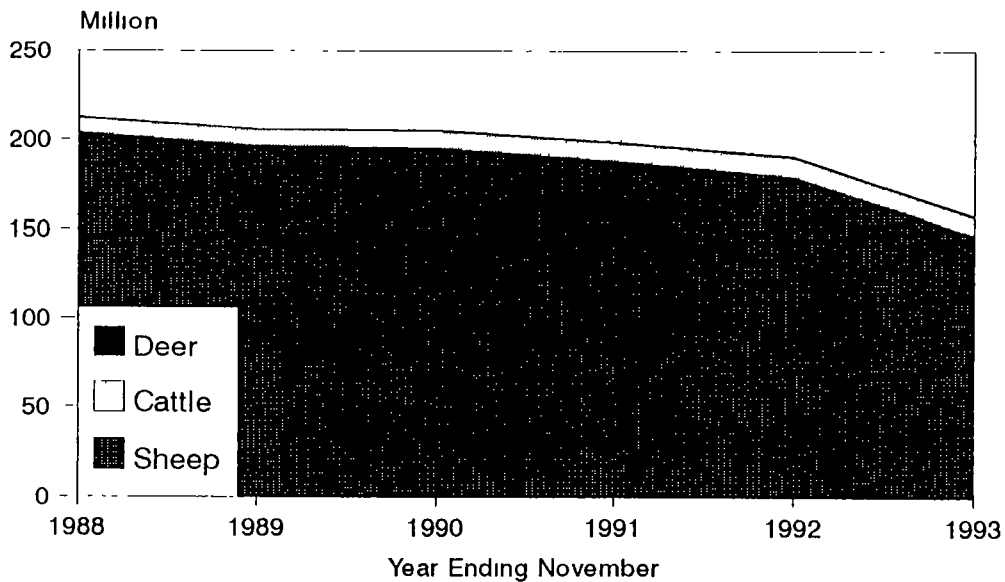
Figure 2



Source FMI - 5 Year Trend Data

## ANTHELMINTICS Total Treatments Given

Figure 3



Source FMI - 5 Year Trend Data