

CHAIRMAN'S REPORT

Introduction

It is again a pleasure to report on the functions of the NZ Equine Research Foundation activities during 2004-2005. Although still grossly underfunded by international standards, the Foundation has continued to support a number of valuable research projects and educational pursuits. Our endeavours are in three major areas, research, education, and administration each of which is described below.

Research

For several years the Foundation has supported research in two ways.

The first is research commissioned to supply knowledge essential to the future well-being of the industry. The second is research applied for, in a competitive manner, by researchers who have a particular expertise in a research area. Projects in this category are evaluated by a subcommittee of experienced researchers and assessed for their value to the industry, cost-effectiveness, practical application, scientific merit, track record of the applicant and other attributes.

Commissioned Research

Four commissioned research projects were worked on during the year. These were:-

(1) Health and Performance Profile of NZ Thoroughbreds in Training

This project has been completed and is in final stages of assessment of results. It was a very large undertaking and approximately 20% of all Thoroughbreds in training in NZ (i.e. 1,700 horses) were assessed. The purpose of the study was to identify the major problems in NZ racing Thoroughbreds, assess their effects on subsequent performance and ascertain the costs of these problems to the NZ Thoroughbred industry.

The project was undertaken by Professor Roger Morris and Dr. Nigel Perkins of the Epicentre at Massey University. Already several papers from this research

have been published in the international scientific literature and the results presented at Scientific Conferences around the world. The final results are to be presented in the 2005 Bomac Lecture Series.

(2) Prevalence of Gastric Ulceration in NZ Horses

In overseas countries gastric ulcers are known to be very common in competitive horses but their incidence in NZ prior to this study was unknown. The project set out to identify how common this problem is under NZ horse management systems and to identify circumstances that may contribute to it in our environment. The study was carried out by a Masterate student, Robin Bell, under the direction of Dr. Janene Kingston at the Institute of Veterinary, Animal, and Biomedical Sciences at Massey University.

The practical part of the project has been completed and showed that 93% of horses studied had evidence of gastric ulceration. The results are being presented in a Masterate thesis at the time of writing and will be the subject of scientific papers and lecture presentations in the near future.

(3) An Economic Study of the NZ Horse Industry

The original intention of this study was to determine the NZ Horse Industry's contribution to the NZ economy. It was to gather data from all sectors of the Industry and to quantify the economic contribution each sector made. The study was under the control of Professor Rukmani Gounder of the Department of International and Applied Economics at Massey University.

For a number of reasons the cost of the research escalated and the study became restricted to the breeding and early training sections of the NZ Thoroughbred sector. The study was completed and recorded in a document entitled "The Thoroughbred Breeding and Training Sectors of New Zealand - An Economic Analysis of its Size and Scope." This document was distributed to the major horse

organizations in New Zealand and to some Members of the NZ Parliament

(4) *Seasonal NZ Helminth Infections in Horses at Pasture in New Zealand*

The current methods for the control of intestinal parasites in NZ horses are not sustainable as they lead to a high incidence of resistance to the modern varieties of worm drenches. To overcome this emerging problem we need to have a better understanding of the biology of horse parasites under NZ grassland conditions.

This study, by Professor Bill Pomroy and Dr. Ian Scott of the Institute of Veterinary, Animal, and Biomedical Sciences at Massey University, sets out to provide some of this fundamental knowledge. The project is due to be completed in 2006.

Competitive Research Projects

Three applications for research from NZ equine researchers were supported during the year. The projects and reasons for supporting them are described below.

1. *Further Development of a Simple Non-invasive Method of Assessing Stress.*

This project, carried out under the direction of Professor Cliff Irvine of Lincoln University, investigates whether stress of horses can be accurately assessed by measuring the level of corticosterone in their manure. In other species of animals, faecal corticosterone levels give an indication of short-term changes in blood cortisol concentration which rises with increasing stress. A previous project to study this method of measuring the degree of stress in horses was supported by the NZ Equine Research Foundation and produced very promising results. This present project aims to produce further validation of this method.

The potential uses of this simple test to assess stress in horses is numerous and include evaluating the well-being of wild horse populations, the stressfulness of transport, breaking-in, training, competition and of different management techniques on breeding farms.

2. *An Investigation of Stifle and Hock Osteochondritis Dissecans (OCD) Development in the NZ Thoroughbred.*

Osteochondritis dissecans (commonly referred to as OCD) is a common joint disease of growing horses in New Zealand. It leads to lameness and is identified radiographically. There are no data available on how and when OCD develops in our Thoroughbreds and, therefore, it is in the interests of the NZ Thoroughbred industry to investigate at what stage of growth and under what conditions the problem occurs.

The study, undertaken by Dr. David Keenan, a Matamata veterinarian, in conjunction with researchers at Massey University, aims to provide a better understanding of how the bone and joint damage caused by OCD develops or regresses. With this knowledge we will be able to offer management strategies to minimize its occurrence.

3. *Microbes of the Intensively Managed Equine – What Microbes are Responsible for Acidosis.*

In New Zealand we commonly feed large quantities of grain to meet the energy demands of competitive horses. Often the amount of grain given in a single feed is too much for the horse's stomach to digest and so it passes through the stomach and into the horse's hindgut. In this region of the bowel it is fermented by microbes, particularly bacteria. Fermentation produces a highly acid hindgut and can lead to digestive disturbances with serious consequences to the horse's health and performance. Hindgut acidosis can lead to laminitis, colic, and tying up (azoturia). Almost nothing is known about the bacterial population in the hindgut of horses managed under NZ conditions and this study, by Drs. Simone Hoskin, Chris Rogers, (Massey University) and Nicola Walker (AgResearch, Grasslands), aims to identify what bacteria are present in the hindgut of NZ pasture-fed horses and determine how the population and species of bacteria change as dietary inputs of grain are increased. This knowledge will help to identify

possible mechanisms for controlling the bacteria that cause acidosis and detecting animals that are susceptible to developing diseases such as laminitis.

Ongoing Research Projects

During the year a **Final Report** was received for the following projects which had been granted in previous years:

1. *The Measurement of Insulin-Like Growth Factor in Horses of Different Ages – Dr. Margaret Evans*

Progress reports have been received for the following unfinished projects:

1. *The Effect of Early Race Training on the Kinematics of 2-Year-Old Thoroughbred Horses – Dr. Chris Rogers*
2. *The Relationship of Faecal pH to High Grain Fibre Diets in New Zealand Racing Stables – Dr. Chris Rogers*
3. *Preliminary Investigation of a Novel Non-Invasive Alternative to Blood Sampling in Equine Athletes – Dr. Chris Rogers*
4. *A Pilot Study for the Development of a GPS Device Suitable for the Measurement of Pasture Activity of Foals – Dr. Chris Rogers*
5. *A Study of the Effects of the Use of Chorionic Gonadotrophin [hCG] in Mares – Dr. Margaret Evans*
6. *A Study to Determine if Muscle Stimulation Increases Muscle, Bone and Tendon Strength in Foals – Prof. Elwyn Firth*
7. *The Use of GPS and Heart Rate Monitors to Quantify the Intensities and Training Responses of New Zealand Racehorses – Dr. Janene Kingston*

Another ongoing project we have funded, but have had no report for in 2004-2005 is *“Further Development of a Simple, Non-Invasive Method for Assessing Stress in Horses”* – Prof. Cliff Irvine.

Education

The Foundation continued with its educational activities of recent years. These were:-

1. Seminars

The Annual Bomac Lecture series, which have been running for over a decade and now plays an important role in the educational calendar of the NZ horse industry, were held in Christchurch, Palmerston North and Hamilton. It featured a panel of speakers led by Professor Wayne McIlwraith of Colorado State University, the world's leading expert on orthopaedic conditions of horses. Professor McIlwraith was supported by Merran Hain a well-known, experienced and successful equestrian competitor and Dr. Erica Gee, an equine nutritionist of Massey University.

The seminars were well attended and again sponsored by Bomac Laboratories (NZ) Ltd. Their continued support has helped to keep the cost of these seminars to participants at a level that encourages horse enthusiasts to attend. The Foundation is indebted to Bomac Laboratories (NZ) Ltd. for their continued interest and enthusiastic support.

2. Books

Books providing essential knowledge for those responsible for the care and training of horses have been published by the NZ Equine Research Foundation for many years. In the present year a book on “Strangles”, the most important, severe and distressing, bacterial disease of horses in our environment, was produced and distributed, free of cost, to nearly 15,000 people in the NZ horse industry.

The book was written by Dr. Andrea Britton of CSL Ltd. and Dr Tony Mogg of Massey University and contains new knowledge which, if applied diligently, allows us, for the first time in history, to eradicate this disease from our properties and even the whole of the country. The costs of production of this book were supplied by CSL Ltd and the Foundation is very appreciative of their support and sincere interest in the health of our horses.

3. *Bulletins*

As in previous years, a Spring and Autumn Bulletin was produced by the Foundation and distributed to 15,000 people in the NZ horse industry. The purpose of these Bulletins is to provide a vehicle in which the Foundation can inform horsemen and women in New Zealand of its aims and activities and to briefly present the results of the latest equine research. During the year the Bulletin was upgraded and produced in colour for the first time.

These Bulletins were very well received by people who look after horses and we gratefully acknowledge the organizations listed below that distributed them to their members.

NZ Thoroughbred Breeders Association
NZ Thoroughbred Racing
Harness Racing New Zealand
The NZ Standardbred Breeders Association
The NZ Equestrian Federation
NZ Equine Veterinary Association
NZ Farriers Association (Inc)
Taranaki Miniature Horses
The Morgan Horse Association of NZ Inc,
NZ Hanoverian Association

The Bulletins were again sponsored by Bomac Laboratories Ltd. The Foundation gratefully acknowledges its indebtedness to them for their continuing encouragement and support.

4. *Scholarships*

A limited number of scholarships were provided during the year. The Scholarships usually provided to allow a Farrier and a Veterinarian to attend the annual Bluegrass Laminitis Symposium in Kentucky were not awarded as this Symposium was cancelled in 2005.

Two undergraduate scholarships, however, were provided. These scholarships are awarded on a competitive basis to students in the final year of the Bachelor of Veterinary Science course at Massey University. They are given to students who have a close association with horses and the purpose of the Scholarships is to encourage bright young New Zealanders with a background in horses to continue their interest thus ensuring that knowledgeable and enthusiastic veterinarians will be available to the horse industry in the future.

The successful candidates this year were Corinne Cooper and Katie Shaw both of whom have had many years of experience with horses.

5. *Travel Awards*

Awards for overseas travel are bestowed annually by the Foundation. The purposes of these awards are;

- To present information resulting from NZ Equine Research Foundation sponsored research studies in prestigious overseas forums
- To encourage and maximize the number of people capable, willing and interested in research and development in the NZ horse industry
- To support the training of promising young scientists and veterinarians interested in equine research
- To build up within NZ a group of experts with international contacts and experience
- To bring overseas experts to NZ to contribute to our knowledge, skills, training, and experience.

Only one person successfully applied for a Travel Scholarship during the year.

Dr. Susanne Dykgraaf, a veterinarian who applied to attend a three day practical course in basic and advanced equine arthroscopic surgery at Colorado State University in the USA. Dr Dykgraaf, a Masterate graduate with first class honours from Massey University, is presently attending a residency programme at the University of Davis in California and intends to permanently return to New Zealand at the completion of this programme. The skills Dr. Dykgraaf acquired at the course will be of considerable benefit to the NZ horse industry when she returns.

While an unusually low number of Travel Awards were applied for during this financial year, since its end, a large number of scientists and veterinarians have requested grants so it is likely that several will be granted in 2005-2006.

6. *Speakers' Roster*

Some years ago a Roster of researchers was established by the Foundation to create another avenue through which newly obtained research-based knowledge could be spread throughout our industry. Speakers on this Roster are available to speak at Annual General and other meetings of various industry organizations. The roster can be obtained from the Foundation Secretary. Speakers on this roster are financially supported by the Foundation to facilitate the spread of new knowledge throughout the industry.

7. *Website*

The Foundation website (nzerf.co.nz) continues to be expanded under the direction of Dr. Chris Rogers of Massey University. It now contains a great deal of information on equine matters and links to a large number of horse-related websites in NZ and overseas. Details of most of the

Foundation's activities and publications are also available.

ADMINISTRATION:

During the year an historical review of the Foundation's accomplishments since its inception nearly 30 years ago was produced in a book entitled "The New Zealand Equine Research Foundation 1976 - 2004" and forwarded to Board members of the major organizations in the NZ horse industry, several members of the NZ Parliament, and widely throughout the industry.

Most of the background work for this publication was undertaken by Professor Fielden. The Foundation is very appreciative of his interest, energy, and professionalism in producing this book on our behalf.

The committee set up by the Foundation to examine Exercise Induced Pulmonary Haemorrhage and how best to manage it from a regulatory perspective completed its review and presented it, through NZ Thoroughbred Racing, for consideration at the 2005 Asian Racing Federation Conference in Korea.

It was gratifying to see that two people who have worked for the Foundation over a number of years received accolades in the 2005 Queen's Birthday Honours. Both ex Board member, Sandy Yarnley, and ex Technical Subcommittee member, Professor Bob Jolly, were invested as Members of The New Zealand Order Of Merit (MNZM). These are just rewards for years of outstanding service and the present Board congratulates them both and sincerely appreciates the contribution they have made to the Foundation.

FINANCIAL:

The audited result for the New Zealand Equine Research Foundation for the 12 months to 31 March 2004 records a small operating deficit of \$4,515 for the year.

The NZERF Trustees established a Capital Reserve Account several years ago with a view to growing this fund to a level where the income generated would sustain the Foundation's administration costs in any one year allowing all of the income generated to be utilized for Research, Education and the Foundation's other activities. The Capital Reserve account total \$487,250 and these funds are invested with Bank Of New Zealand with income generated currently being added to the capital sum.

The NZERF Statement of Financial Position shows retained income of \$150,856.

The Foundation has an ongoing commitment to fund Research projects costing \$139,258.

In the past year to 31 March NZERF's total income was \$202,622 compared with \$233,588 the previous year. Income is received from NZ Thoroughbred Racing and Harness Racing New Zealand, Sponsorships, sales of publications, interest and the generous support of the NZ Racing Board which provides an annual grant of \$90,000 towards the cost of administration, research and education projects.

Total expenditure for the year was \$207,137 compared with \$273,954 for the previous year. A reduction in research payments \$99,733 compared with \$179,745 accounted for this, however as already noted there is a commitment to a fund a further \$139,258 in research which is presently being undertaken.

ACKNOWLEDGEMENTS:

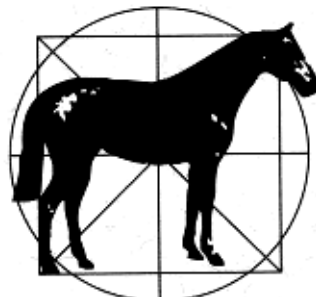
The NZ Equine Research Foundation is fortunate to have a Board of highly qualified and talented people willing to give of their time in a charitable manner for the betterment of the NZ horse industry.

As retiring chairman, I would like to publicly record my appreciation of the prodigious efforts of Board and Subcommittee members over the years. It has indeed been my privilege to work with such gifted, passionate, and forward-thinking people. As long as the NZ horse industry has people of this calibre, and provides them with appropriate support, there is no doubt in my mind that the Industry will develop and prosper.

Brian Goulden

ONZM, BVSc(Hons), PHD, MACVSc
Chairman

N.Z. EQUINE



**RESEARCH
FOUNDATION**

Supporting research and education on New Zealand horses for a quarter of a century