NZ EQUINE RESEARCH FOUNDATION

THE FOUNDATION BULLETIN

Contents

THIS BULLETIN IS PROUDLY SPONSORED BY THE RODMOR CHARITABLE TRUST

Rodmor Charitable Trust

Rodmor Equine Podiatry Roadshow

The recently held Rodmor Equine Podiatry Roadshow attracted farriers and veterinarians from across the country, with Dr Sarah Daly presenting on equine podiatry to enthusiastic audiences in Cambridge, Palmerston North and Christchurch. The presentation covered many topics including comprehensive hoof examination techniques, optimum hoof balance, effective use of photography and radiography, and common issues affecting equine athletes.

A highlight of the roadshow was the launch of NZERF's new booklet, "Advances in Equine Podiatry", written by Dr Daly, which provided attendees with a valuable take-home resource to complement the practical knowledge shared during the presentations.

NZERF was proud to present this valuable educational initiative alongside principal sponsor, the Rodmor Charitable Trust. The roadshow exemplifies NZERF's commitment to working with farriers, veterinarians and scientists to develop and deliver practical educational resources that benefit New Zealand's equine industry.

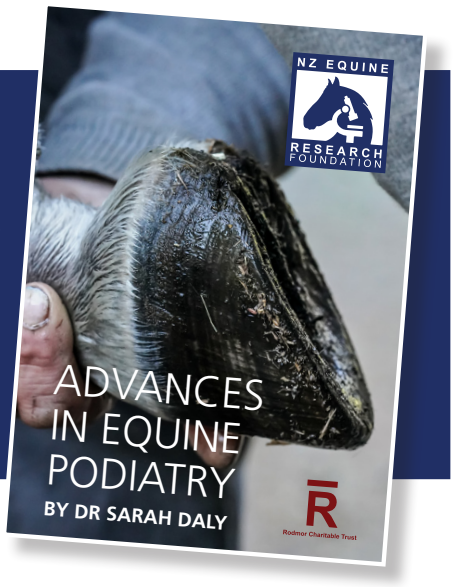
The success of this roadshow demonstrates the ongoing demand for high-quality, evidence-based education in equine podiatry across New Zealand's professional community.

Dr Sarah Daly (middle) with Dr Kylie Huxford (left) and farrier Anna Drabble (right)

Launched at the 2025 Rodmor Equine Podiatry Roadshow, the "Advances in Equine Podiatry" booklet is a must for anyone interested in equine podiatry. Farriers, veterinarians and horse owners will find this a useful resource.

The podiatry booklet is available from NZERF and on our website.

https://nzerf.org.nz/nzerf-books



Pre-pubic tendon rupture in a Thoroughbred mare

Sophie Brocklesby, 2024 Massey Veterinary Student Scholarship recipient

History:

A 15-year-old multiparous Thoroughbred mare in late gestation presented following a sudden 'drooping' of her abdomen accompanied by signs of colic. The mare was initially managed on-farm with anti-inflammatory drugs before being transported to the clinic for further evaluation.

Clinical findings:

On presentation the mare was bright and alert. She had a mildly increased heart rate, but rectal temperature, respiratory rate and gastrointestinal sounds were normal.

The mare had an obviously distended, pendulous abdomen with oedema ventrally and an excessive downward curvature of the spine. Her udder was swollen and displaced cranially. The mare's hips also appeared to be elevated.

Given these clinical signs, differential diagnoses included pre-pubic tendon rupture, hydrops allantois (excessive foetal fluid accumulation), abdominal trauma or twin pregnancy.

Diagnostics:

A rectal ultrasound examination revealed an enlarged, fluid-filled uterus with the foal positioned beyond the reach of the scanner. An external abdominal ultrasound scan was performed to evaluate foetal viability and assess for hydrops or twins. The foetal heart rate was within normal range and there was no evidence of twins or traumatic abdominal muscle tears. However, the depth of allantoic fluid (foetal fluid) in the uterus exceeded the expected normal measurements (>180 mm) suggestive of hydrops allantois.

Based on clinical and diagnostic findings, the mare was diagnosed with rupture of her pre-pubic tendon, likely secondary to the development of hydrops allantois which significantly increases the weight of the uterus. The characteristic abdominal drooping, pelvic tipping and cranial udder displacement support a diagnosis of pre-pubic tendon rupture.

Treatment and management:

The mare was managed with anti-inflammatory drugs for pain relief until parturition. Her milk was tested twice daily for electrolytes and pH (acidity) changes to help predict the time of foaling. When milk pH drops below 6.4, foaling is anticipated within the next 24 hours.

The mare went into labour naturally while being closely monitored. Due to her limited ability to contract her abdomen, assistance was required. The foal's nose and front feet were easily palpable, and chains were placed around the foal's front fetlocks. Gentle traction was used to assist the mare in delivery of the foal.

Post-foaling, the foal was hypothermic with a low heart rate and weak peripheral pulses. Intravenous fluid therapy (3L) was administered to improve perfusion. The foal also received 200 ml of warmed colostrum via nasogastric tube. The mare remained stable and was maintained on anti-inflammatory drugs for a week post-foaling. The mare required uterine lavages to assist with delivery of the placenta and was given a course of broad-spectrum antibiotics. The foal remained with the mare until weaning.

Discussion:

The pre-pubic tendon plays a crucial role in supporting the mare's abdomen, particularly during pregnancy. It functions like a sling extending from the pelvis to the ventral abdominal wall. When ruptured, loss of abdominal support leads to severe drooping of the abdomen and displacement of the udder.

Figure 1: An example of pre-pubic tendon rupture in a late-gestation mare Source: UC Davis 'The Horse Report' Volume 23, Number 4 - October 2005

While this condition can be heritable in certain breeds, such as Arabians and Standardbreds, it typically occurs in multiparous mares secondary to conditions involving excessive weight in the abdomen, such as hydrops allantois.

Studies suggest conservative management should be tried initially to allow more time for foetal maturation and increase the chance of a viable foal. In cases where the mare is deteriorating and mare survival is the priority, termination of the pregnancy, drainage of the foetal fluid in the allantoic sac and delivery of the foal either vaginally or via caesarean section may be necessary. For mares that foal naturally, as in this case, assistance with foaling is essential due to the mare's limited ability to contract her abdominal muscles.

The prognosis for mares with hydrops allantois for future fertility is generally favourable; however, in cases with pre-pubic tendon rupture, breeding the mare again is not recommended due to severe abdominal wall damage and the risk of potentially life-threatening consequences.

New Zealand Equine Research Foundation Scholarships and Grants

Salient Trust Young Achiever Award
$15,000 available annually to assist an individual under the age of 35 in their career in the equine industry

https://nzerf.org.nz/salient-trust-young-achiever-award

Closes 31st January annually

Travel Awards
For any travel relating to research and development in the NZ horse industry.

https://nzerf.org.nz/travel-awards

Applications received any time

Equine Research Grants
Applications from interested people for funding for projects in the field of equine research.

https://nzerf.org.nz/research-grants

Closes 30th April annually

Jonathan Hope Equine Veterinarian Scholarship
$10,000 available to help a "young at heart" New Zealand-based veterinarian gain practical skills that will be valuable in supporting his or her work within the NZ equine industry.

https://nzerf.org.nz/jonathan-hope-equine-veterinary-scholarship

Closes 31st January annually

Massey Veterinary Student Scholarships
Up to $3000 awarded to final year students studying full time in the Bachelor of Veterinary Science degree at Massey University who plan to work primarily in the equine industry.

scholarships@massey.ac.nz

Closes 30th September annually

Veterinarian – Farrier Scholarships
$3,000 each for a veterinarian and a farrier from the same geographic location to attend a suitable course or symposium and/or spend time with colleagues in the USA.

https://nzerf.org.nz/vet-farrier-scholarship

Closes 30 November annually

Applicants should apply in writing/email to The Secretary | Email: **info@nzerf.org.nz**

Travel Report – Dr Caroline Thompson

2024 Jonathan Hope Scholarship Recipient

Firstly, I would like to take the opportunity to thank Dr. Jonathan Hope for his continued support of this award. The opportunities that it allows are excellent, and I feel very grateful that this type of support is available to equine veterinarians in New Zealand. As the recipient of this scholarship, I was able to travel to the United Kingdom and gain invaluable experience in specialist level equine anaesthesia.

Anaesthesia is an area of practice that I have always enjoyed, and two years ago I stepped into the role of managing anaesthesia at Matamata Veterinary Services Equine. This was a great opportunity for professional development for me, and I have been lucky enough to have access to great on-line CPD including the vetPD webinar series

Caroline Thompson at the Liverpool docks

on equine anaesthesia. However, there are currently no board-certified anaesthesiologists specialising in equine anaesthesia working in New Zealand, hence opportunities for hands-on learning here are limited.

With that in mind and with the saying 'you don't know what you don't know' ringing true for me, travelling overseas was the logical way to ensure that we are keeping our practices current and providing the best patient care possible.

The generous nature of the Jonathan Hope Scholarship meant that I was able to spend time at multiple places within the UK, including Rainbow Equine Hospital, Rossdales Equine Hospital and Leahurst Equine Hospital at Liverpool University. This provided an excellent balance between private practice, where one anaesthesiologist is in charge and the caseload is large, and a university setting where the caseload was smaller but there was more time for theoretical discussion and learning and no less than five equine specialist anaesthesiologists were generous enough to share their knowledge and experiences with me.

I returned to New Zealand full of inspiration and ideas, and I feel very lucky to have returned to a clinic that is so supportive and open to implementing some of these ideas. The connections that I forged overseas are invaluable, and I am looking forward to keeping in touch with the fantastic, knowledgeable people that I met in the UK.

At Matamata Veterinary Services we train four interns a year, as well as teaching final year Massey veterinary students that rotate through, and I now feel confident that we are practising and teaching equine anaesthesia at a level that we can be proud of, and that will hopefully benefit the next generation of equine vets for years to come. I cannot thank Jonathan Hope enough for the opportunities, learnings, and connections that this scholarship allowed me to attain.

Investigation of the Immunocrit method for detecting failure of passive transfer of immunity in neonatal foals in the clinical setting

Dr Barbara Hunter

Foals are born immunologically naïve. They are dependent on the mare to supply them immunity via immunoglobulin (IgG) transfer through ingestion of adequate colostrum in the first 12-24 hours of life. Due to the increased incidence of illness seen in foals that have failure of passive transfer of immunity (FPTI), it is vital for practitioners to have a quick, reliable, and inexpensive method for measuring serum IgG in neonatal foals in the clinical setting.

The main objective of this study was to investigate the Immunocrit method as a quick, reliable, and simple method for measuring serum IgG as compared to the gold standard radial immunodiffusion (RID) assay and the commonly used point-of-care turbidimetric immunoassay (POC-TIA). The second objective was to clarify appropriate cut-off values for the Immunocrit method when detecting failure of passive transfer of immunity.

Serum samples from 300 Thoroughbred foals were tested using the Immunocrit method. The results were compared to the gold-standard RID method for assay validation as well as the POC-TIA to evaluate against a commonly used test.

The main limitation of the study was the limited sample size, with only 1 RID assay result of IgG<400mg/dL (indicating complete FPTI), meaning that an Immunocrit test cut-off value for complete FPTI was unable to be ascertained. For RID assay IgG values between 400 and 800mg/dL (indicating partial FPTI), the Immunocrit test results were significantly positively correlated with the RID assay. The sensitivity and specificity of the Immunocrit method were 98.3% and 100% respectively, compared to the POC-TIA which had a sensitivity and specificity of 92.1% and 100% respectively.

While it would be ideal to repeat this study with larger numbers (i.e. 5000 or more foals), this study provided preliminary data that the Immunocrit method is a quick, accurate, and inexpensive way to test for failure of passive transfer of immunity in newborn foals, with a higher sensitivity than the POC-TIA.

This study was funded by a research grant from the NZERF.

Comparison of the efficacy of needle and endoscopic lavage in adult equine fetlock joints and digital flexor tendon sheaths using microspheres

Dr Chris Beggan

Infection of synovial structures such as joints or tendon sheaths is a common, often performance-limiting and potentially life-threatening emergency seen in equine practice. Synovial sepsis occurs when the burden of microorganisms exceeds the threshold the synovial membrane can eliminate. This can occur by introduction of bacteria via the blood, wounds extending into the joint or tendon sheath, or following intra-articular (IA) injection or surgery.

Prompt diagnosis and effective treatment are essential to eliminate infection and minimise the extent of damage caused within the synovial structure. Several techniques can be used to treat synovial sepsis, all with the same objectives of delivering high-volume lavage to remove bacteria and byproducts of infection from the synovial space. Arthroscopy and tenoscopy have been the preferred approach as they allow direct assessment of damage to cartilage, soft tissue structures and bone. These procedures are routinely performed under general anaesthesia and are considered specialist procedures requiring appropriate facilities, surgeons with advanced surgical skills and endoscopic equipment. These factors often lead to a higher financial impact associated with these cases.

Needle through-and-through (NTAT) lavage is a comparatively cheaper procedure. It can be carried out under general anaesthesia or, in some cases, under standing sedation. No specialised equipment and minimal training are required, making it a much more accessible option for veterinarians in general practice.

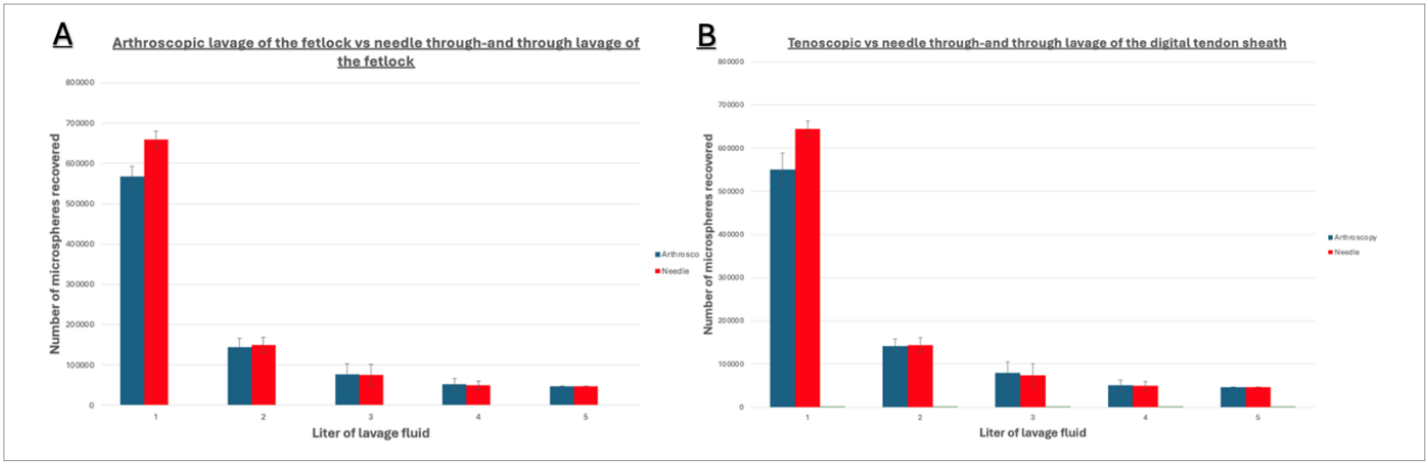
For many equine practitioners, referring patients with synovial sepsis to a surgical facility is not an option due to geographical location, transportation issues or financial considerations. A delay in treating these conditions reduces the prognosis for the horse's return to previous athletic ability or survival; therefore, establishing the efficacy of NTAT lavage in comparison to endoscopic lavage in multiple synovial structures would enable equine practitioners to make better evidence-based recommendations to their clients.

This study demonstrated that NTAT lavage of the fetlock joint was as effective at removing microspheres from the synovial space as endoscopic lavage, and despite its relative anatomical complexity, NTAT lavage was as effective at flushing microspheres from the digital flexor tendon sheath (DFTS) as tenoscopic lavage. Results showed that most microspheres were recovered in the first two litres of egress fluid through the fetlock joint and DFTS. Smaller lavage volumes would be preferable for field procedures under short general anaesthetic or standing sedation; however, in clinical synovial sepsis cases with diffuse pannus and fibrin deposits, larger volumes would be required.

Despite the positive results, we maintain that endoscopy and tenoscopy remain the gold standard approach for investigating and treating septic synovial structures. It facilitates direct visualisation of the synovial space and allows assessment of articular cartilage or soft tissue structures for concurrent injury, which allows for a more accurate prognosis for recovery or return to athletic function to be made. In addition, foreign material and pannus can be located and removed from the synovial space, reducing the chances of ongoing sepsis and the need for repeated lavage.

However, this study indicates that NTAT lavage serves as an effective therapeutic strategy for the irrigation of contaminated or septic fetlock joints and DFTS in adult equines when referral to a surgical facility for endoscopic lavage is not feasible or has to be postponed.

This study was funded by a research grant from the NZERF.



Dr Chris Beggan was awarded the Mark S. Bloomberg Memorial Resident Research Award for this project at the 2025 Veterinary Orthopaedic Society annual scientific meeting in the United States.

This award was established to recognize outstanding resident abstract submissions to the scientific program which showcases the best and most up to date advances in both equine and small animal orthopaedic surgery.

NZ Equine Health Association Update

First horse registered into NEIT and a surprise farewell to Dr Ivan Bridge

On 1 August 2025 the NZ Equine Health Association (NZEHA) Board hosted a soft launch of the National Equine Identification and Traceability (NEIT) system. The first horse to be registered into the system had been microchipped off site and its details were entered to demonstrate to attendees how easy the system is to use. The horse's owner elected to enter him into both the NEIT and Companion Animal registers for a single $15 lifetime registration fee. A party celebrating the hard launch of the system is envisaged once MPI regulations describing the requirements and duties of horse owners with respect to the NEIT system have been passed by government.

The launch was followed by a "surprise" farewell party for longtime Chairman, Dr Ivan Bridge, who is heading off for a long overseas holiday with wife Rebecca. The farewell was generously funded by NZ Thoroughbred Racing, Harness Racing New Zealand and the equine horse transport sector. Luminaries from across the equine sector expressed gratitude for Ivan's energy and commitment as he led the NZEHA through some huge projects and exotic disease challenges during his 10 years at the helm. The leadership of the NZEHA now passes into the very astute and capable hands of Dr Tony Parsons.

Photo: *NEIT working group L-R: Trish Pearce (Executive Advisor), Sarah Rosanowski (Equine Epidemiologist), Hillary Milne (NEIT Manager), Ivan Bridge (Chairman), Alex Roke (Comms & Marketing), Andrew McFadden (Chief Biosecurity Officer), Kate Brown (IT Specialist).*

Travel Report – Dr Matthew Mackee & Kane Clayton-Greene

2025 Veterinarian/Farrier Scholarship Recipients

Firstly we would like to acknowledge the support of the NZ Equine Research Foundation, the NZ Farriers Association and Equine Veterinarians of NZ for what was an amazing opportunity to travel to the Rood and Riddle Equine Hospital in Lexington, Kentucky. Traveling to one of the largest veterinary hospital facilities in the world and learning from some of the leaders in their fields has had a massive positive impact on both of our careers and will forever be memorable.

During our externship at Rood and Riddle Equine Hospital we had the opportunity to integrate into the operations of the Rood and Riddle Equine Podiatry Centre. Working with Dr. Scott Morrison and many other associates of the podiatry centre was a privilege and a great opportunity to experience the recent advances in knowledge, engineering and skills involving remedial podiatry. Their work was of an exceptionally high standard and sets a benchmark for the rest of the world.

It was amazing to see a facility that provides advanced diagnostic imaging technologies including MRI, PET scan, CT and nuclear scintigraphy. Alongside its exceptional diagnostic capabilities, the Equine Podiatry Centre is supported by an amazing fabrication team. Their ability to fabricate any type of shoe, boot or supportive splint required for a case was simply remarkable.

Alongside the exceptional in-house podiatry facility there is a full ambulatory service providing on-farm podiatry consultations. Being able to visit world-renowned Thoroughbred farms such as Ashford Stud (Coolmore), Three Chimneys and Winstar Farm, to name a few, was a privilege and great opportunity to see how other large successful Thoroughbred farms operate and be able to draw comparisons to our very own and equally renowned Waikato Stud in NZ.

During the breeding season in the Northern Hemisphere, developmental angular limb deformities in young growing horses and the management of brood mares' feet made up most of the daily case load; something we are both extremely interested in and challenged with each breeding season at home. Working alongside Dr Morrison and the many experienced stud staff provided great exposure to the many different approaches that were tailored to each individual case. With the team servicing many large Thoroughbred farms in the greater Lexington area it was great to see multiple different approaches used to reach the same successful outcome.

We had an amazing experience not only at Rood and Riddle Equine Hospital but experiencing the 151st running of the Kentucky Derby at Churchill Downs. This is arguably the most anticipated and spectacular racing event in the world and an experience like no other.

We have both taken so much from this experience on both a professional and personal level and have made many great connections as a result. We look forward to revisiting Lexington, Rood and Riddle Equine Hospital and our newfound connections again in the years to come.

Farrier Kane Clayton-Greene (left) and Dr Matthew Mackee from Waikato Stud at Rood and Riddle Equine Hospital in Kentucky

NZERF scholarships awarded in 2025

This year the NZERF has had a very successful round of scholarship applications. There were ten applications for the Salient Trust Young Achiever Award, and another five for the Jonanthan Hope Equine Veterinary Scholarship. The applications were of a high standard and covered a wide variety of fields related to the NZ equine industry. We narrowed the applications down to a short list of eight people who were interviewed. Because of the high quality of the applicants the NZERF managed to secure two additional awards, these being a "Special Salient Trust Award" of $5,000 and a "Special McLaren Fund Award" of $5,000.

THE SUCCESSFUL APPLICANTS WERE:

1. The Salient Trust Young Achiever Award – Sophia Stratford

Sophia is a 20-year-old trainee saddler who has been studying at Capel Manor College in London since 2023 where she has almost completed the Worshipful Company of Cordwainers Diploma in Saddle, Harness and Bridle Making. This is the only full-time saddlery training course in the world, and so far Sophia has spent $50,000 on her training and was the school's top student last year. Sophia's aim is to become a Master Saddler through the Society of Master Saddlers (SMS), and become a specialist SMS saddle fitter and SMS bridle fitter.

When she completes her studies Sophia plans to return to New Zealand where, rather than concentrating on saddlery manufacture, she will offer her services as a consultant saddle and bridle fitter. This is a field with growing demand and qualified people are extremely rare, so Sophia's skills will prove invaluable in the future.

With Sophia's dedication and commitment to her training and her novel career pathway we felt she was a worthy recipient of this prestigious award.

2. The "Special Salient Trust Award" – Liam James

Liam is a 34-year-old farrier from Hawkes Bay who, after completing his apprenticeship in 2019, operates his own business under the name of Performance Hoof Care. Liam is well-credentialled, having been the National Intermediate farrier champion in 2024, and he has a structured and innovative approach to modern farriery. As part of his operation, he manufactures 3-D printed shoe inserts and laminitis clogs with input from an international group.

Liam's aim is to complete American Farriers Association (AFA) certification as a Certified Journeyman Farrier (CJF) in June 2025. To do this he would travel to South Africa to get experience with Robbie Miller, an International Farriers' Hall of Fame inductee.

By setting high and innovative standards in service delivery and showing commitment to furthering his profession Liam will be a valuable link between the NZERF and New Zealand farriery.

3. The Jonathan Hope Scholarship

Jonathan's vision has always been for his scholarship to allow practising veterinarians to experience new ideas and learn new skills by visiting other equine practices or establishments overseas. This year there were two worthy candidates, so it was decided to split the scholarship fund equally.

i) Dr Angela Hawker

Angela is a veterinarian who has been with Cambridge Equine Hospital for 20 years and has a special interest in equine performance medicine. Having raced horses and being a marathon runner herself, Angela feels equine athletic training has not taken advantage of many of the new training techniques adopted by human athletes and is keen to promote more objective fitness assessment methods.

She recently bought an Arioneo Equimetre, a sensor device that analyses in real time the exercise performance data of a horse in training, and has studied with equine sports medicine expert Dr Emmanuelle Van Erch. During her internship she met Dr Yvette Nout-Lomas, the professor running the Sports Medicine Department at Colorado State University, and Angela will now spend two weeks there learning techniques for quantitative assessment of medical conditions affecting performance.

Upon her return, Angela will host a seminar on causes of poor performance for owners and trainers and will continue to develop this specialised diagnostic field as a tool for better management of performance horses in NZ.

ii) Dr Julie Bell

Juie graduated from Massey University Veterinary School in 2005 and has spent her entire career as an equine vet at Southern Rangitikei Veterinary Services. Before her veterinary career, Julie was a top-level equestrian rider and coach and she has a special interest in equine performance medicine.

Julie plans to use this award to travel to America and spend time at two high level equine performance practices; McKee Pownall, a 15-vet practice with a strong sport horse and racehorse performance centre in Ontario, and Peak Performance Equine Centre in Florida with Dr Lisa Casnella who is the US Equestrian Federation team veterinarian for the US showjumping team.

4. The "Special McLaren Fund" award – Dr Alaina Tessier

Alaina is a 2015 Massey University Veterinary graduate who has a distinguished academic career as well as significant experience in equine practice both in the UK and at Massey University where she is the clinic manager and senior equine vet. Alaina has developed a passion for veterinary service to FEI and endurance events and is currently a Level 1 FEI vet but wants to advance her training and qualification in this field. The next step is obtaining Level 2 FEI qualification and the only available course within the next two years is in Kuala Lumpur later this year.

Alaina's commitment and enthusiasm are such that we felt she was a worthy recipient of this award to fund her trip to Malaysia to achieve her goals. While there, she will also gain experience with an internationally recognized endurance veterinarian as well as visit Selangor Turf Club. Upon her return, Alaina will need to attend several events in New Zealand and it is our hope that, with the current shortage of trained officials, Equestrian Sport NZ will see value in contributing to the cost of this training also.

Full reports from each scholarship recipient will be published in the next edition of the bulletin.

The potential of fertilisers as an inhibitor of equine gastrointestinal nematode larval migration

Jasmine Tanner

Current research at Lincoln University is looking at developing ways to interrupt the gastrointestinal parasite pathway in sheep using fertilisers to inhibit egg hatching and larval migration. Laboratory experiments have shown a 97% reduction in larvae on pasture following the application of 20% Urea solution. Similarly, other nitrogenous fertilisers have been shown to inhibit egg hatching to less than 6% hatched at solutions of 10% or greater. Further testing has also shown that Epsom salt and nitrogenous fertilisers inhibited larval migration by more than 75% at concentrations ranging from 25-50%. This project aimed to investigate whether equine gastrointestinal nematode larval migration could also be inhibited using similar fertilisers.

Larval migration assay plate set-up

Equine faecal samples collected over a 12-day period and stored in Sistema containers with ventilation holes drilled in the top in the climate-controlled parasitology room (left) and faecal samples soaked in water in a gauze bottomed tray for a 48-hour period to collect the larvae (right).

Methods

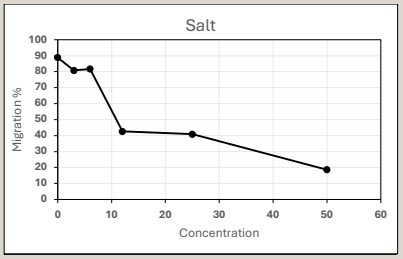
Fresh faeces were collected from 3 retired Standardbred geldings housed at pasture and rotationally grazed with cows. Faecal egg counts were used to determine the concentration of parasite eggs shed in the faeces and then faecal pats from these animals were collected daily over a 12-day period. The faeces was placed in ventilated plastic containers in a climate-controlled room for 10 days before being soaked in water in gauze-bottomed trays for 24-48 hours to allow the larvae to filter through the gauze for collection. The larvae were collected and stored in containers at a known concentration of larvae per ml in a refrigerator.

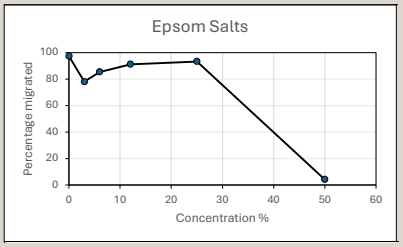
The larval migration assays were run on 24-well plates. Fertiliser solution was pipetted into the first well of the 1st and 4th row and the fertiliser concentrations were reduced by half in each well across the row, resulting in fertiliser concentrations of 50%, 25%, 12.5%, 6.25% and 3.13%, with the final well being the control (water only). Two hundred µL of solution containing larvae were then pipetted into plastic capsules lined at one end with 25 µm gauze and sat in the wells of fertiliser solution. The well plates were left at room temperature for approximately 24 hours to allow larval migration to occur. The capsules were then rinsed into the adjacent empty wells and larvae counts were completed under microscope.

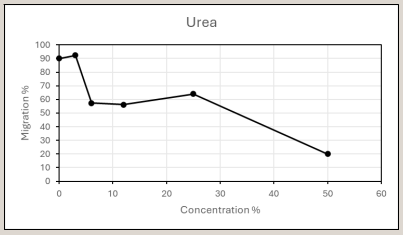
Results

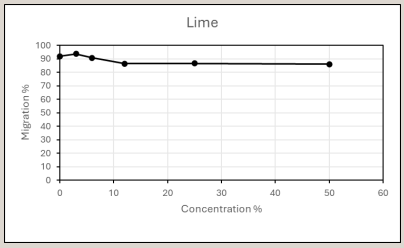
The larvae identified from the equine faecal samples were cyathostomes. The larval migration assays for lime and superphosphate were challenging as both these solutions were cloudy, which made counting the larvae migration difficult particularly at higher concentrations. Various concentrations were trialled but unfortunately superphosphate solutions at 50% and 20% were still too opaque to accurately count larvae and it had to be dropped.

The graphs below show that at a 50% concentration larval migration was inhibited to 4-19% of controls by salt, Epsom salt and Urea. There was no change in larval migration at any concentration of lime, with most larvae migrating and showing strong activity even in 50% lime concentrations. Interestingly, although larvae did migrate at 3%, 6% and 12% concentrations of salt, Epsom salt and urea, at concentrations above 3% larvae activity dropped markedly. When viewing larvae under the microscope we saw progressively deleterious effects on the physiology of the larvae at increasing fertiliser concentrations.









Key Findings

- Lime had no effect on larval migration or on larval activity post-migration
- Salt, Urea and Epsom salts inhibited larval migration at high concentrations
- Salt, Urea and Epsom salt had an effect on larval activity and physiology at concentration of 6% and higher

Further Investigation

Further migration assays are being conducted to include the effect of different temperatures, especially at lower concentrations. Additionally we will look at the effect of these fertilisers on egg hatching.

This study was funded by a research grant from the NZERF.

Chairman's Corner

Although this is considered the 'winter' edition of the bulletin, as it is being completed many studs have several foals on the ground already and breeders are eagerly looking forward to a new season.

The NZ Equine Research Foundation has had a busy winter, with the very successful podiatry roadshow presented by Dr. Sarah Daly in Cambridge, Palmerston North and Christchurch. The roadshows were attended by a very good group of progressive farriers, vets and podiatry enthusiasts and coincided with the release of Sarah's excellent book 'Advances in Equine Podiatry', which follows on from Dr. Julie Bell's 'Hoof Care and Management'. It is primarily targeted at equine podiatry professionals but may be useful for all. A huge thank you to the Equine Veterinarians of NZ for supporting this booklet's production.

Also about to be released is the latest edition of 'Reproduction in the Mare' written by Professor Babiche Heil, who is a highly regarded equine reproductive specialist formerly practising at Matamata Vet Services and now a professor at Washington State University. This booklet is an essential resource for all horse breeders and will be available through your veterinary practice free of charge thanks to the sponsorship of Equine Veterinarians NZ, NZ Standardbred Breeders Association, NZ Thoroughbred Breeders Association, NZ Hanoverian Breeders and NZ Warmblood Breeders.

We are delighted to welcome Ike Baker on to the NZERF board as an independent member. Ike has a Master's degree in animal science and is a passionate and capable showjumping rider. He is keen to see advances in research affecting all horses but especially sport horses. He is currently the executive manager of the Hawkes Bay showgrounds, which hosts the prestigious NZ Horse of the Year Show.

Finally, we are pleased to announce we have a new vice chairperson in Dr. Megan Reidie, who

Ike Baker

accepted this nomination at our recent AGM. Megan is a practising veterinarian and a keen Standardbred breeder based in Southland. She has made a great contribution to the activities of the Foundation this year, in particular convening the Christchurch leg of our podiatry roadshow.

Dr Tim Pearce, NZERF Chairman

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