



**ITBA Autumn Winter
Lecture Series 2014**

Notes

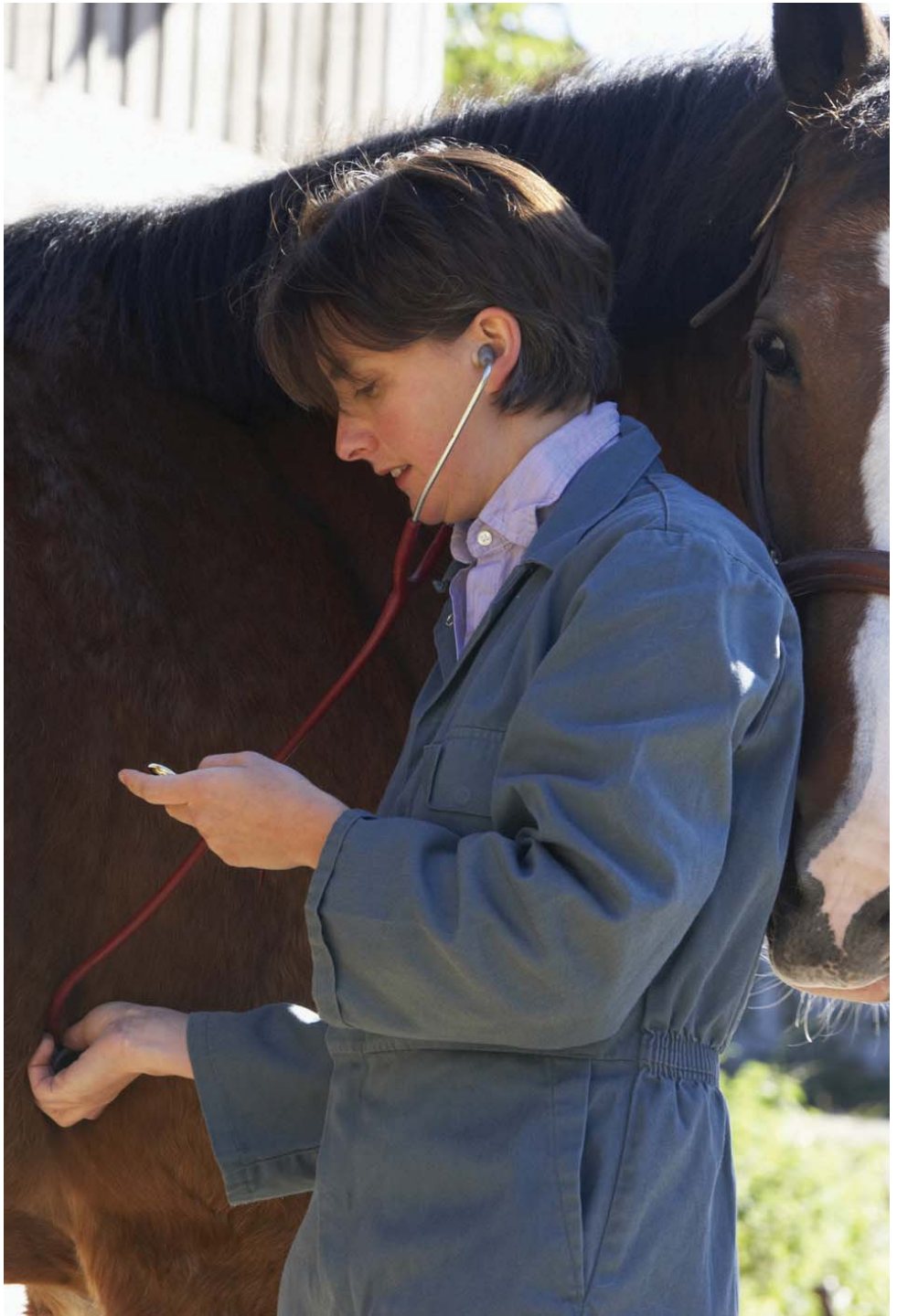
Lecture Topics

- * **Rhodococcus Equi**
- * **Strangles**
- * **Atypical Myoglobinuria
(Sycamore Disease)**
- * **Preparing for the
Breeding Season -
Breeders Check List
& Code of Practice**



ITBA

WORKING FOR IRISH BREEDERS



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INTRODUCTION



The notes in this booklet are from the 2014 Series of lectures hosted by ITBA. As always the lectures were informative for our members and we are very grateful to the speakers who shared their experience and expertise with the attendees. We encourage members to attend these lectures: while the notes are a helpful guide there is no substitute for hearing the information first hand, seeing the visual aids and being part of the question and answer session at the end of the talks. The lectures are also a productive opportunity for thoroughbred breeders to meet and share information with each other.

Breeder education is one of our key roles at ITBA and one we take seriously. If there are topics you would like covered in future lectures please let our Association office know and we will do our best to include them.

We hope that the information in this booklet helps you to produce sound and healthy athletes.

A handwritten signature in black ink, appearing to read 'Derek Iceton', written in a cursive style.

Derek Iceton
ITBA Chairman

R. EQUI AN UPDATE ON R. EQUI VACCINATION

findings of Professor Jose Boland (University of Edinburgh), Professor Steeve Guigere (University of Georgia) and Professor Noah Cohen (Texas A&M) presented by Dr Des Leadon

The steps involved in producing a vaccine begin with the science of developing a vaccine, market research, securing the necessary investment, production and storage of the vaccine, distribution and marketing and sales. Certain regulatory and licensing laws must be adhered to and these ensure the quality, safety and efficacy of the vaccine. This makes the development and availability of a new vaccine a very lengthy and expensive process.

So far, in researching a vaccine for R. equi, live vaccines, partially purified VapA and recombinant vaccines (non-live) have been investigated and are in testing stages. A DNA vaccination has also been examined, and so far has been found to be protective in mice, but has had poor immunological response in foals.

Oral vaccination with a live virulent R. equi has been found to be protective when given at 48 hours, one week and three weeks. Oral/nasal Salmonella expressing VapA is protective in mice and the early data in foals looks very promising. However, a Riboflavin auxotrophic mutant was protective in mice, safe in foals, but offered no protection.

The mapping of the R. equi genome has shown it to be a multi-host pathogen, found in pigs, cattle and goats, and people. There are several different types of R. equi and their genome harbours an array of antibiotic resistant genes, which are not only passed down through the reproduction of cells, but sideways, when one resistant gene comes into contact with a non-resistant gene.

The lack of knowledge of the foal immune system, and lack of a small animal model, mean that advancement in the developing of a vaccine is slow, but bacterial vectors and viral vectors show promise in other species and an effective foal vaccine is achievable, hopefully within the foreseeable future.

RHODOCOCCUS EQUI AND ANTIBIOTIC RESISTANCE

by Professor Tom Buckley, Irish Equine Centre

R. equi was first reported in 1923, but only single cases were reported in Ireland until the 1980s, the increase in cases coinciding with the increase in foal production. R. equi predominates in warm, dry climates and is resistant to disinfectants and has become endemic on farms.

The pneumonic form is the most common and can affect foals from as early as one month old. Clinical symptoms include a dull coat and high temperature, often up to 160°F. The foal will often have a good appetite, right up to the point that poor breathing can be heard.

Two studies carried out over a 15 year period measured resistance in R. equi to antibiotics. Resistant strains were fairly level prior to 2000, then increased steadily and in 2014 we were beginning to see resistance. Resistance to Erythromycin is higher than to Rifampin. The emergence of resistance by R. equi strains highlights the need for a vaccine.

Intensification was the biggest cause in foals, but we are also beginning to see R. equi in adult horses, particularly from those who are put on walkers, as they are kicking up the surface into their face. The only way forward is a vaccine, but that's still a bit away, although trials are underway at the moment.

R. EQUI: STRATEGIES TO REDUCE RISKS OF LOSING FOALS

DUE TO PNEUMONIA

by Dr Monica Venner, Equine Clinique, Destedt, German

Dr Venner is based at the Lewitz Stud of Paul Schockemöhle, in north Germany, from where she has carried out extensive studies on the 4,000 warmblood sport horses based there. The 4,000 horses include 1,000 broodmares, and 900 foals are born each year. Despite this population, the stud comprises of just 9,000 acres, and over-stocking is recognised as a problem by Dr Venner.

Reducing the loss of foals to pneumonia is greatly helped by daily observation of the foals by the breeder, being alert to any abnormality in their respiratory rate, nasal discharge or coughing and recognising unusual behaviour in individual foals. Weekly examination by a vet should include a clinical exam, blood sample (WBC more than 13,000 is a warning) and ultrasound of the lung, followed by the correct treatment of affected foals with adequate antibiotics. The greatest prevention of R. equi is to reduce horse density on the farm and to avoid over-stocking.

The treatment of R. equi pneumonia in foals is generally over a period of four to six weeks and requires a combination of two antibiotics. By using only one antibiotic there is a danger of R. equi becoming resistant. The usual protocol is to combine Rifampicin with either Azithromycin or Clarithromycin.

As we become more aware of the risks of antibiotic resistance, Dr Venner recommends that we restrict the use of antibiotics to a necessary and sensible level. "Do not treat foals without clinical signs of R. equi, or those with a WBC (white blood cell count) of less than 2,000 or those with only small pulmonary abscesses (less than 10cm)."

Only treat foals with mild clinical signs who have an abscess score of more than 10cm and treat any foals showing moderate to severe clinical signs. Dr Venner has found this to be a safe protocol if the breeder and veterinarian cooperate well. Leaving foals with an abscess score of less than 10cm untreated is advised because two out of three affected foals will heal spontaneously within two weeks and there is a duty to use human antibiotics responsibly. It is essential to avoid antibiotic resistant R. equi.

A pulmonary abscess of 10cm or less naturally decreases within two weeks and the speed and reduction is little different in an abscess of this size untreated than when treated. So no treatment for a foal with an abscess score below 10cm, but it is important to rescan the foal once a week for two weeks. This is also applicable to foals with a white blood cell count of around 15,000 and less than 20,000.



RECENT EXPOSURE TO STRANGLES IN IRISH THOROUGHBRED HORSES

by *Dr Vivienne Duggan, UCD School of Veterinary Medicine*

The importance of the sub-clinical carrier was highlighted in the findings of the Equine Disease Seminar held in Padova, Italy, in 2009 and it is important for breeders to understand how prevalent Strangles is. The fight against Strangles has been improved by the recent development of a serologic test at the Animal Health Trust (AHT).

Of note is the prevalence of recent exposure to *Strep equi var equi*, the bacteria responsible for Strangles, throughout the less regulated horse populations. Having examined horses at fairs, pony clubs, riding clubs, livery yards, competition yards, horse pounds, community projects and other areas where horses come together, Dr Duggan found that 42% of horses that were clinically normal tested positive for recent exposure to the Strangles bacteria and 90% of premises housed recently exposed cases. Importantly, only three of the 31 premises had reported recent or suspected Strangles events.



Typical nasal discharge

A UCD, IEC and AHT combined study on the thoroughbred population in 2014 used samples provided by the Irish Equine Centre that had been submitted for other reasons to the IEC during 2014. These involved anonymous Progesterone samples from 80 thoroughbred mares, on 16 studs, and anonymous racing bloods from 81 racehorses in training, in four yards.

Of 161 horses tested, 16 tested positive for recent exposure. Six of the stud farms and three of the training yards housed recently exposed horses. Although this requires further investigation to estimate the true prevalence of exposure to Strangles in the thoroughbred population, this pilot study reveals how much at risk the thoroughbred population is.

ADVERSE DRUG REACTIONS

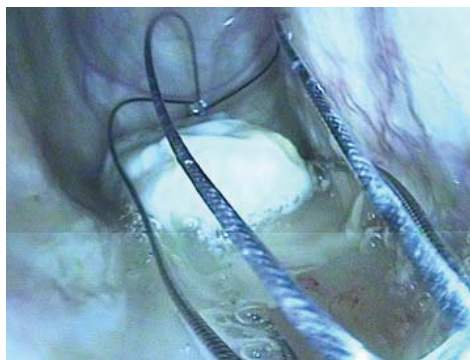
by *Dr Des Leadon, MA, MVB, MSc, FRCVS, DipECEIM*

There can sometimes be an adverse reaction of mares to drugs given to their foals and treatment of a foal using Erythromycin resulted in colitis in the mare, leading to worldwide reports of similar cases. Initial published reports came from Sweden, but cases had also been seen in Dubai, with Clarithromycin given to a foal resulting in fatal colitis in the mare. Cases were reported from the USA, South Africa, Brazil and the UK. One vet also added that they found it to be a bigger issue – the norm, rather than the exception – in Sweden than it had been in Belgium and The Netherlands, where they had previously worked. An Arizona vet reported successful use of Clarithromycin and Azithromycin, with no ill-effects, but had found a problem when using Erythromycin. Thanks to the collation of data from vets worldwide this is now seen as a more commonly widespread problem and vets should take necessary precautions to protect the mare while treating the foal. The foal's mouth must be cleaned after treatment and all manure must be removed as soon as it is seen. This is something for which those taking care of the mare and foal can take responsibility and aid the prevention of any adverse reaction in the mare.

S. EQUI, THE ORGANISM, THE DISEASE AND THE TESTS

by *Dr Andrew Waller, AHT*

Strangles could be totally eradicated, if only farms and racing yards adhered to simple bio-security measures of isolation and screening. Carriers can shed the casual bacteria, streptococcus equi, and infect other horses, without showing clinical signs of the disease. However, animals are rarely screened to identify potential carriers despite the speed and accuracy of modern testing methods. Risk management is a simple matter of quarantining all animals moving onto the premises, which includes those that have been away and mixed with other horses. Children's ponies and horses returning unsold from sales must not be overlooked and should also be quarantined and screened for streptococcus equi. Any infected animals must be treated, screened to check on the efficacy of treatment, before being allowed into contact with the resident horses. By careful screening and isolation procedures, S. equi can be eradicated and future outbreaks prevented.



Removing a 'chondroid' containing S. equi from the guttural pouch



A horse suffering from Strangles (photo courtesy of Nick Parkinson)

OVERVIEW AND ACTION PLAN FOR ATYPICAL MYOPATHY

by *Dr Ursula Fogarty, Irish Equine Centre*

A sharp increase of equine deaths related to sycamore poisoning during the autumn of 2014 highlights the seasonal threat of Atypical Myoglobinuria, traced to the Sycamore tree, *Acer Pseudoplanatus*.

After a particularly good growing season of mild weather, the seedpods ('helicopters') are much larger and more rounded than normal and contain high levels of the toxic hypoglycin, which drastically affect the horse's metabolism and generally proves fatal within 24-36 hours of ingestion.

In the 2014 outbreak all affected horses were aged three or younger and were grazing in paddocks with fallen Sycamore leaves and seedpods. The amount of good pasture available does not appear to have an affect and horses on very good pasture have ingested the seedpods.

High winds exacerbate the risk and trees shed their leaves and seeds when temperatures drop below eight degrees. By reducing grazing time in affected fields to five hours or less per day, from October to February, or closing the paddocks off altogether, the risk can be minimised.

ATYPICAL MYOPATHY

by Dr Dominique Votion, Belgium

Dr Votion, a leading specialist in the field, was one of the key people who established a link between Atypical Myopathy and the Sycamore, made over a period of a decade. Atypical Myopathy was first recorded in 1939 and in 1984 was described as a specific equine disease. It is now present in over 15 countries. Largely fatal, 74% of victims die within 72 hours, although there is diagnosis and treatment available for use by vets in the saving of 26% of affected horses.

The identification of specific precludes to the disease, before it had been conclusively linked to sycamore seedpods and seedlings, helped in the linking process. Preliminary studies indicate that 20-30g is enough to contain fatal toxins and the ingestion of seedpods over a period of time is a particular threat. No cases have been identified in horses restricted to less than six hours of pasture access per day and the threat is seasonal with most of cases occurring in autumn and spring, when seedpods are spread onto pasture by high winds and when seedlings subsequently appear. Where cases have been identified in autumn, spring cases follow, but similarly if no cases have occurred in the autumn, there will be none in the spring.

This seasonal pattern is due to good growing seasons and larger seedpods, as well as years when very few pods have been shed by trees and no cases were reported. Dr Votion stresses the importance of reporting all cases, so that they can be recorded and analysed, and a downloadable form is available at www.myopathie-atypique.be.

Reporting of cases by all vets will greatly assist Dr Votion in her research, as she is currently the only person carrying out such research and her findings are vital to the protection of horses at risk from the disease. 1,000 cases have been recorded worldwide, but Dr Votion estimates only 5% of cases are reported and that the death toll probably stands at closer to 25,000.

Important signs to look out for in a horse that may be at risk from ingesting sycamore seedpods are low head carriage, stiffness and lying down for longer than usual. Hydration is vital in the saving of a horse, if clinical signs are detected early enough. Prevention is key and includes limiting time at pasture to less than six hours per day during autumn and spring, checking for fallen leaves and seedpods and fencing off an area if necessary, and not using paddocks in autumn and spring where previous deaths have occurred. Dr Votion advised that horses fetched in from pastures at risk should be kept stabled and closely monitored for five days.



Sycamore seeds



Sycamore leaf

LABORATORY REPRODUCTIVE INVESTIGATIONS

by Professor Tom Buckley, Head of Microbiology at the Irish Equine Centre (IEC)

Many diseases currently under discussion haven't gone away and adhering to the Code Of Practise is of constant importance. Irish thoroughbred breeders export 80% of their produce, which makes it all the more important to follow the Code Of Practise and ensure a continuation of free trade and a trusted product.

Various bacterial and fungal infections can prevent a mare from going in foal and there are also many venereal and non-venereal diseases that can have a negative impact on a stallion or mare's breeding season, with dire economic results. "Make sure all certification is there when a horse is returning from stud or fetched in from abroad."

CEM (contagious equine metritis) outbreaks in recent years have highlighted the importance of taking regular swabs and bio-security should be an essential part of every farm's routine, to prevent the spread of disease, either directly or indirectly. Do not forget the teasers in this routine and include them in swabbing and general health checks. "Establish freedom of disease before commencing breeding activities." Non-compliance of the Code Of Practise still continues and breeders should be aware of this. "Last year's swabs are not good enough, they must be kept updated."

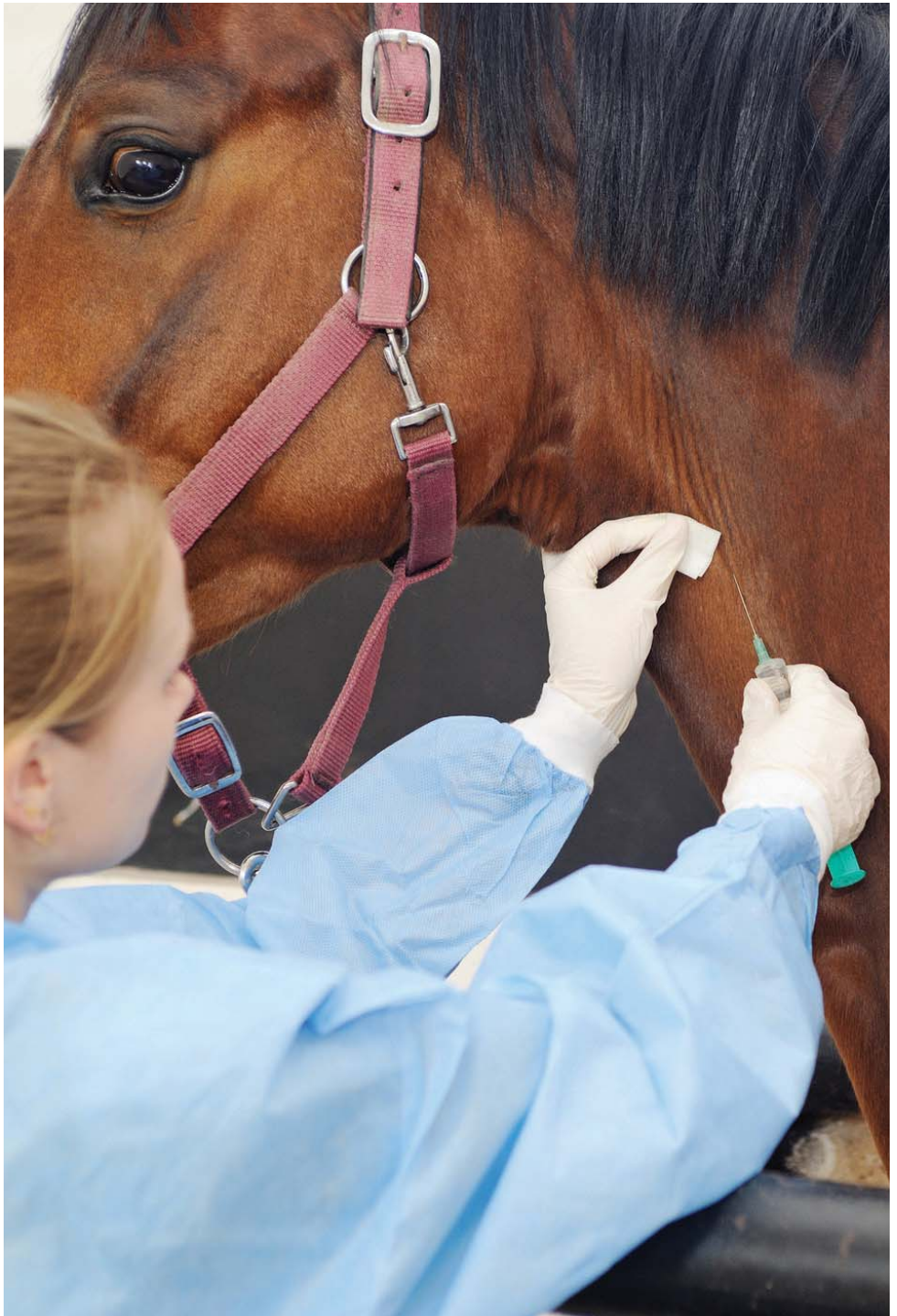
VIRAL DISEASES OF STUD FARMS

by Professor Anne Cullinane, Head of Virology at the IEC

Endemic diseases such as Equine Influenza, Rotavirus and Equine herpesvirus (EHV), as well as exotic diseases Equine Arteritis and Infectious Anaemia, remain a threat to the thoroughbred industry. Once again, the Code Of Practise is our first line of defence against such outbreaks. Vaccination and testing are paramount to the prevention of disease and all breeders must ensure all vaccinations are fully up to date. Vaccination against EHV, preferably of all stock but certainly mares, is essential at five, seven and nine months of gestation.

Rotavirus prevention comes down to good hygiene practises and the separation of visiting mares and foals from resident stock. Vaccination of mares is again essential, at eight, nine and 10 months of gestation, which ensures a good presence of antibodies passed to the foal and in the colostrum.

The use of unlicensed plasma is particularly dangerous and to be avoided at all costs, and poor hygiene when treating horses has in the past led to cases of infectious anaemia. "Vaccinate for health, welfare and reputation."



Tell us!

If you have any suggestions for topics for the 2015 Evening Lecture Series, we'd love to hear them.

Contact us at the details below.



December 2014

ITBA, Greenhills, Kill, Co. Kildare, Ireland

Tel. +353 (0)45 877543

Fax. +353(0) 45 877429

Email. Info@itba.ie

www.itba.ie



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Irish Thoroughbred
Breeders' Association