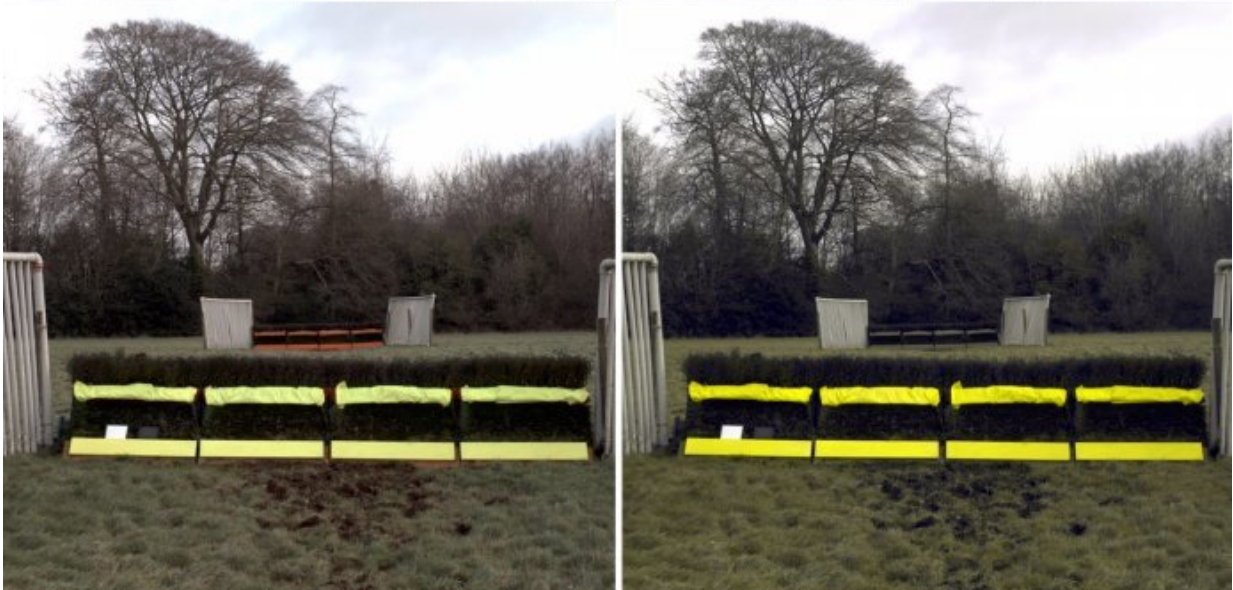


# Research into equine vision leads to trial of new fence and hurdle design to further improve safety in jump racing

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The images on the left show what a human sees compared to what a horse sees (shown on the right). Credit: University of Exeter

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The colours deployed on hurdles and fences on British racecourses may be set to change following cutting-edge research led by the University of Exeter into the way that [horses](#) perceive colour.

In 2017 the British Horseracing Authority (BHA) and Racing Foundation commissioned – and provided funding support for – research into equine vision.

The opportunity for this project was identified by the partnership between the BHA and RSPCA, who work together on an ongoing basis to develop new ways to make hurdle and fence design safer.

The research was undertaken by Dr. Sarah Paul and Professor Martin Stevens of the University of Exeter with the aim of improving obstacle visibility for horses, therefore reducing the risk of falls and injuries for horses and jockeys.

Presently, the colour used on hurdle frames and fence take-off boards and guard-rails is orange, based on human vision.

However, horses have reduced colour vision compared to humans, and only differentiate objects in a palette of blues and yellows.

The new research shows that other colours should be more effective in offering visibility to horses.

As a result of the research, a recommendation has been approved by the sport's Racecourse Committee that a phased trial should be carried out using fluorescent yellow for all hurdles and guard-rails, and fluorescent white for take-off boards at fences.

These colours have been determined to maximise visibility under a wide range of conditions for both humans and horses.

The research phase of the project included testing the visibility of orange markers and other potential colours at 11 racecourses, and – in collaboration with trainer Richard Phillips – testing the behavioural responses of horses to more prominent colours in a controlled environment.

Retired jockey Ian Popham and conditional jockey Danny Hiskett acted as riders of the horses throughout the trial.

It has now been agreed that the next phase of the project should see a more extensive trial take place at training grounds in order to build up a significant dataset before rolling the trial out to a live racing environment.

The results of this research and the ongoing trials will be shared with other racing jurisdictions and equine organisations.

At the same time, the BHA and RSPCA are continuing to work together on a project to see if any further improvements can be made to the construction of hurdles, alongside the different use of [colour](#).

David Sykes, Director of Equine Health and Welfare for the BHA, said:

"This fine and important project is an example of how British racing uses advanced scientific and veterinary research to constantly improve racehorse welfare, not only for thoroughbreds in Britain but across other nations and equine disciplines.

"As with the ongoing phased introduction of our padded hurdles – which have proven to reduce faller and injury rates – we will ensure to take our time with this project, make sure there are no unintended consequences and that the evidence of the ongoing trials continue to support the case for change.

"If that proves to be the case then we will look forward to seeing the new designs of hurdles and fences on racecourses, and hopefully further reducing our already declining faller rate."

The faller rate in British racing has reduced by 29% since 2004 as a result of ongoing investment in racecourse safety, and constant enhancements in racehorse care and training standards.

Professor Stevens, Chair in Sensory and Evolutionary Ecology for the University of Exeter, said: "Understanding how animals see the world, and using cutting-edge tools to investigate this, has a valuable role to play in guiding the safety and welfare of animals and humans in a variety of contexts.

"This project demonstrates how modern science can look to have widespread positive implications in human society and our interactions with animals."

Caroline Davies, Racecourse Services Director for the Racecourse Association (RCA) said: "Safety of all participants both human and equine is a priority for racecourses.

"We are always open to any initiatives that enhance safety and therefore endorse trialling the recommendations arising from this specialist research into equine vision, specifically as it pertains to the racecourse environment.

"We look forward to supporting the trials and working with our industry partners through the different phases."

Ian Popham, Grade 1 winning former jockey who was involved in the trial, said: "From riding over the different coloured fences it was clear to me that over some colours the horses reacted differently and showed the obstacle more respect.

"I'm sure other riders will feel the same and this feels like a great idea and opportunity to make the sport safer for both horses and jockeys."

Rupert Arnold, Chief Executive of the National Trainers Federation (NTF) said: "This fascinating research applies science to fence design. As it holds the potential to reduce fallers and so make racing safer for our horses, the NTF is in full support."

Rob Hezel, Chief Executive of the Racing Foundation, said: "By granting funds to ambitious and innovative projects, the Racing Foundation is working to achieve a better sport for all its participants.

"We believe that through investing in [research](#), we lay the foundations for informed decisions and improvement in our sport.

"This project has done exactly that and we are delighted to hear that its findings have received such a positive response from key stakeholders and that they are now working together to take it forward and evaluate it in practice."

Provided by University of Exeter

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