By **ROB PILSWORTH**, MA VETMB BSc (HONS) CERTVR MRCVS

The return to dirt racing

What went wrong with the synthetic surface experiment in the US and Dubai?

With the Racing Carnival at Meydan in Dubai about to kick off, it will be fascinating to see how international attendance, racing performances and injuries stack up following the return to dirt from the synthetic Tapeta surface.

In 2006, Richard Shapiro and the California Horseracing Board decreed that all racetracks within the state should convert to synthetic surfaces within a year. Barbaro's dramatic catastrophic breakdown just after jumping out of the gate at the Preakness earlier that year had shocked and horrified the massive viewing audience, who had tuned in hoping to see this horse pull off the elusive Triple Crown.

Less than ten years on from that decision, all of the Californian tracks except the one to lay Tapeta, Golden Gate, have reverted to a dirt surface and even tracks outside California, such as Keeneland in Kentucky, have followed suit. The conversion of the Meydan surface back to dirt completes a virtual 'rout' for synthetic surfaces. So what went wrong?

The fatality rate almost halved when US tracks switched from dirt to synthetics

Are synthetic tracks safer?

One of the most useful ways to design a medical experiment is called a double crossover trial. Here the subjects have a set period of time without receiving the treatment under trial. They then undergo a similar period of time, but receiving the new treatment, and then this is followed by a third period of time of the same length, once again without the treatment. This is one of the most effective ways of establishing categorically that the treatment has a significant effect.

Although unintentional, the conversion of the dirt tracks to synthetic surfaces in California has mimicked a crossover trial. We have good data for racing injuries and fatalities in the period up to the conversion to synthetic surfaces in 2006, we have data from the synthetic era, and then more data following the return to dirt.

The initial data was collated and presented by an ex-racetrack practitioner, Dr Rick Arthur, Equine Medical Director of the California Racing Board. This logged an average of 3.09 fatal breakdowns per 1,000 starts on the dirt racetracks in the years prior to conversion to synthetic surfaces. This number was derived from a decent sample size, with over 80,000 individual racing horses forming the study population. Following the switch to synthetic surfaces the same statistics were gathered from a population of over 50,000 individual races and the fatality rate had fallen by almost half, to 1.68 per 1,000 starters.

A similar study was carried out by Martin Collins Surfaces and Footings, the company that manufactured and sold Polytrack, which was used at several other racetracks outside the Californian region. Studying five separate tracks in the final meeting before their conversion to Polytrack, there were 57 fatalities during racing. This number dropped to 20 at the comparable meetings which took place following the installation of the synthetic surface. Not surprisingly, following the recent return to dirt at the Californian tracks, the perfect crossover experiment, catastrophic injury rates are perceived to be returning to similar levels to before the switch.

As well as the simple catastrophic breakdown and fatality statistics, some pure science backed up the synthetic surface benefit. A study carried out by Jacob Setterbo and a group of research workers collaborating between different departments of the University of California at Davis measured the forces experienced by a horse's limb as it trotted and cantered on dirt, a synthetic racetrack surface, and on turf. They did this using miniature strain and force measurement devices carried on the leg as the horses exercised. This paper was published in the *American Journal of Veterinary Research*, a prestigious scientific journal and showed that there was a significant reduction in impact forces, such as peak acceleration, vibration within the limb and a factor called the ground reaction force, a measure of how 'hard' the foot hits the ground.

All of these indicators of bone 'hammer' were lower on the synthetic surface, by around a third. Interestingly, they were lower even when compared to turf, so the science backs up the injury statistics: synthetic surfaces do put the limbs under less duress and result in fewer catastrophic injuries than do surfaces made of dirt. So why the switch back?

Problems with synthetic surfaces

There were many factors that pushed the move back to dirt. These included the embarrassment of having to abandon some very high-profile fixtures, through waterlogging. Another factor was that owners and trainers had been given no alternative but to train and race on dirt.

The racing fraternity is a naturally conservative bunch of people who do not embrace change willingly, and change dictated from above, without what they perceived to be prior consultation, was even more of a problem

for trainers to accept.

There were other issues. Most of the racetracks gave their business to companies who had had no previous experience of laying and maintaining tracks in the USA. This led to problems with maintenance, and the provision of an even, regular, and repeatable surface. In the UK we are used to seeing the term 'standard' when we watch racing on all-weather surfaces, but the establishment of a standard racing surface in the United States, given the range of climatic variation there, became a nightmare.

Not only that, but because horses in North America both train and race on the same track, trainers were finding that clock timings taken in the morning gave them no indication as to how the horse would perform on the same surface in the afternoon because that surface was not the same. It had changed significantly with heat during the course of a single day.

"When Raven's Pass, a turf horse, won the Breeders' Cup Classic, it was a major blow to US breeders"

There were also various vested interests at work. The American bloodstock industry has bred horses for generations with one aim in mind and that is to perform at the highest level on dirt. Dirt pedigree horses are notoriously unable to reproduce that form on other surfaces.

With so much invested over so many generations of horses, they not surprisingly found it unpalatable to see their best horses beaten repeatedly at the showcase international meetings, like the Breeders' Cup, by horses which they perceived to be of lower ability but who were better able to perform on the synthetic surface.

When Raven's Pass, a turf horse, won the Breeders' Cup Classic, it was a major blow to the US breeding industry. Similarly, Vale Of York winning the Juvenile did not go down well. To cap it all, when an 'interloper' called Gitano Hernando won the $500,000 Grade 1 Goodwood Stakes having previously won only a Listed race, things reached crisis point.

Coupled with that, trainers, including those who favoured the synthetic surface, claimed that training their horses on this surface, although producing fewer dead horses, was producing more low-grade lameness and training problems. Owners, who pay the vet bills, became aware that more of their horses seemed to have niggling lamenesses requiring expensive investigation, particularly associated with hind-limb lameness and upper-limb stress fractures. Some well-respected veterinarians, such as Dr Foster Northrop, working at the Kentucky tracks reported an increase in soft tissue injuries.

So was any of this validated by scientific study of the track surfaces involved? Unfortunately for synthetics, this did seem to be the case. A study published in the *Equine Veterinary Journal* in 2014 emanating from a world-class research group at the New Bolton Center in Pennsylvania found an increased incidence of stress fractures, particularly of the hind limb, from horses training on a synthetic surface, to those trained on dirt.

This was a big study involving reviewing over 500 bone scans, around half of which were derived from horses training and racing on dirt and half from a synthetic surface. They found more pelvic and tibial stress fractures on the synthetic surface-trained group than on the dirt-trained group. The overall incidence of stress fractures was also around 10% higher on synthetic than on dirt.

In a series of recent articles, *The New York Times* has been heavily critical of the decision to switch back to dirt, and has highlighted the broad facts in terms of injury data, which show in numerous studies that, on average, synthetic tracks reduce fatalities by around 50%.

Bill Casner, owner of Well Armed, the last American horse to win the Dubai World Cup on dirt, was quoted after the decision to revert to dirt. He said: "I struggle to understand the thought process behind changing to a surface that you know is going to increase fatalities. When a horse breaks down at any time, it's a terrible thing, but when a horse breaks down in front of the grandstand in the afternoon, two things happen: people will turn around and leave the track in droves, never to return, and a jockey will go down and be injured to some degree whether it's a bruise or paralysis. Where there are agendas placed above the safety of horses and riders, to me, it is unconscionable."

Michael Dickinson who developed and markets the Tapeta synthetic surface, commented in the *Thoroughbred Daily News*: "We have 58 jockeys under permanent disability and an estimated 1,000 horse fatalities annually. Those numbers are unacceptable for the public and most decent people."

So why did tracks switch back?

A leading Californian racetrack veterinarian, who did not wish to be named, commented: "The main problem with the surfaces put in at the Californian tracks was that of maintenance and consistency. The companies who delivered the product didn't follow up with adequate maintenance programmes and had no experience of how to keep these tracks right in the US.

"The waxes and oils in the track changed their consistency a lot during a single day and the groundstaff struggled to keep up with this. In Great Britain you probably get away with these things because your range of weather is fairly limited, and you race on the track for only a few hours a day with a total number of probably less than 100 horses.

"In the States, we have up to 2,000 horses a day battering around that track during the morning, and then racing on the same track in the afternoon, with big cards, and meets which go on five days a week for weeks on end. This is very different to what you have in Britain."

Interestingly, only two tracks in North America chose to install Tapeta, the same surface which has just been taken out at Meydan. These were Golden Gate Fields in Berkeley, California, and Presque Isle Downs in Pennsylvania.

Tapeta was the only surface to have been developed, trained on and significantly tested in North America prior to its use, and was backed by a maintenance programme and advisory team who were in from the start and gave continuous input, support and feedback.

Both tracks seem happy that their injury rates have reduced and neither has expressed any desire to revert back to dirt. Similarly, Wolverhampton here in the UK has decided to go with the Tapeta surface, and the recent in-depth review of the track in the *Racing Post* seems to unanimously endorse the view that this is the best track surface they have had, very close to turf, with minimal kickback and track bias. Champion jockey Richard Hughes said: "The Tapeta track at Wolverhampton is the best all-weather surface we have. It's as close to grass as you could get."

Meydan's reversal

The declared reasons for removing the Tapeta in Dubai were similar to the main misgivings over synthetic surfaces in the USA: the track was inconsistent, maintenance was a problem and horses of previously unproven top-class ability were sometimes winning big races, simply because they could 'go' on the surface.

Also in contrast to North America, there is no betting industry in Dubai, so the bookmakers' and punters' concerns that form on synthetic tracks was unreliable will have played zero part in the decision.

More pressingly, the Dubai Racing Club wished to attract back the Americans who were increasingly noticeable by their absence during the Carnival and World Cup meetings run on a synthetic surface. For a World Cup race, you want world-class horses, and that has to include the Americans.

The big problem for these North American >>

Injury rates are higher when horses race on sloppy dirt tracks

horses will be training and racing on dirt in Dubai without the use of their medicinal props, which North American trainers vociferously fight to retain the right to use on the basis that they cannot train and race horses on a dirt surface without medication. The Dubai jurisdiction does not allow non-steroidal anti-inflammatories such as phenylbutazone, or the anti-bleeding drug frusemide during racing, so it will be interesting to see whether the move back to dirt does in fact bring in the Americans.

It is certainly possible to train and race on dirt without the medication prop, because this is exactly what happens in Hong Kong. There, a synthetic track is available for training only, but many prefer to use the dirt and will race on dirt under probably the most drug-intolerant administration in the world.

Is dirt here to stay?

Whilst five North American tracks are still racing on synthetics, it will take an enormous amount of effort and persuasion for the other North American tracks to have a second try, but this may come to pass because of factors outside the direct racetrack environment. For instance, if a move was made by the International Racing Federations to disallow the use of any medication in Graded races, trainers and breeders may have to think hard about whether they want to continue racing and training on dirt drug-free.

Similarly, the critics that complained about the change in consistency of the synthetic tracks with weather conditions seem to have ignored the fact that dirt is just as prone to changes, but in different ways. The 'sloppy' dirt track, when horses slice through the mud layer and impact onto the hard base of the track, results in faster racing times but higher degrees of injury, and this can also happen in the space of a day. Dirt is not immune to the effects of the weather.

If a return to synthetic surfaces is to happen, a significant amount of prior research on how best to maintain these tracks in the North American environment would have to be carried out. The statistics allow no other interpretation than that synthetic tracks are much safer to horses and jockeys than dirt. It's now up to the proponents of synthetic surfaces to prove that, as well as being safe, they can be reliable and trustworthy in every other respect, before the international industry will be tempted back for another try.


For the Finest in Fencing

CHOOSE NORCROFT

Over 40 years of expertise in fencing the world's leading Stud Farms and Training Centres, supplying Pressure Creosoted Post and Rail Fencing, Stud Entrance and Paddock Gates - providing the complete service from concept to completion.

The UK, Ireland & European distributors for KEEPSAFE & SQUARE DEAL - The Original and Only Proven Wire Systems from Keystone Red Brand Products.

NORCROFT
Paddock Fencing

CONTACT RICHARD S JERMY ◆ NORCROFT EQUESTRIAN DEVELOPMENTS
1 Norton Road, Loddon, Norwich, Norfolk NR14 6JN UK ◆ Tel: 01508 520 743
Fax: 01508 528 879 ◆ Email: enquiries@norcroft.com ◆ www.norcroft.com


Fee: £1,750 1st Oct SLF

ALBAASIL

DUAL WINNING SON OF DANSILI
Defeated 22 Group / Listed winners, incl. 7 Group 1 winners
Rated 121 by Timeform Annual Racehorses 2012
(very smart performer)
EXCEPTIONAL LOOKS AND MOVEMENT
320,000 gns yearling - top priced colt by his sire that year

Standing at: LONGDON STUD
Bardy Lane, Upper Longdon, Rugeley, Staffordshire WS15 4LJ
Contact: TIM or LYNDA HOLLINSHEAD • Tel: 01543 492 656
Mobile: 078 85 441 957 • email: longdonstud@aol.co.uk
www.longdonstud.co.uk