Racing Surfaces Testing Laboratory
Orono Maine USA

Surfaces

THE UNIVERSITY OF MAINE

Water….

Glen Kozak

V.P Surfaces & Facilities
New York Racing Association

Jim Pendergest

General Mgr.
The Thoroughbred Center

Jamie Richardson

Track Supt.
Churchill Downs

Track Superintendent Job Description:

Reduce Musculo-Skeletal Disease in the Horse

How do we do this?

Start by understanding injuries

Start and Now ….

2006 Summit on Health of the Horse

- Set Stage
  - Barbaro 2006 Preakness
  - Eight Belles 2008 Kentucky Derby
- Racing can take long-term control of safety by embracing:

  "a culture of data.“*

A culture of data:

Most important outcome:

- **Equine Injury Database (2008)**

Other outcomes

- Racing Surfaces Lab
- Equipment
- Accreditation

* T.D. Thornton Boston Globe April 29, 2009

Where We Go Next: Risk Reduction

Increase confidence in racing…

Be ready to address "bad years" or "bad steps"

Risk Reduction

- ***No start within 15 days***
- ***No start within 30 days***
- ***1st start in 9 months***
- ***Intact male***
- ***3 years old and up***
- ***Not raced as 2 year old***
- ***Multiple starts 1-6 months***
- ***Bottom level claiming***
- ***Pre-existing injury***

A *Culture of Data* for Surfaces

- Equine Injury Databas
  - Horses
  - Riders
  - Jurisdiction
  - Training info

Limited track information...

Maintenance Quality System

- Currently Surface Data from 9 tracks
  - Design data
  - Track Inspection
  - Maintenance Tracking

Discussion with Six Other Tracks

Design Documentation and Setup

	Dirt	Turf	Synthetic
Equipment Planning	Equipment Document	Equipment Document	Equipment Document
Protocols		Turf Calendar	Vendor Manual
Composition	14 Tests 7 Samples Moisture curves	Moisture targets and consistency	12 Tests 4 Samples Temp. curves
Layout of Track	Turn Radius and Banking	Turn Radius and Banking	Turn Radius and Banking
Design of the Surface	Cushion Depth, Pad and Base	Turf species, root depth, profile	Depth, base type
Planning	Drainage Plan	Irrigation Plan	
Weather	Installation of on-site or selection of off-site station		

Race Meet or Seasonal Test

	Dirt	***Turf***	***Synthetic***
Cushioning	*Orono Biomechanical Surface Tester (OBST)*	*Equine Dynamic Impactor (EDI)*	*OBST*
Response	*OBST*		*OBST*
Firmness	*OBST*	*EDI*	
Profile	*Ground Pen. Radar*		*Ground Pen. Radar*
Moisture	*High resolution mapping*	*High resolution mapping*	
Composition & Consistency	*6 Tests 7 Samples*	*Penetration and turf survey*	*6 Tests 4 Samples*

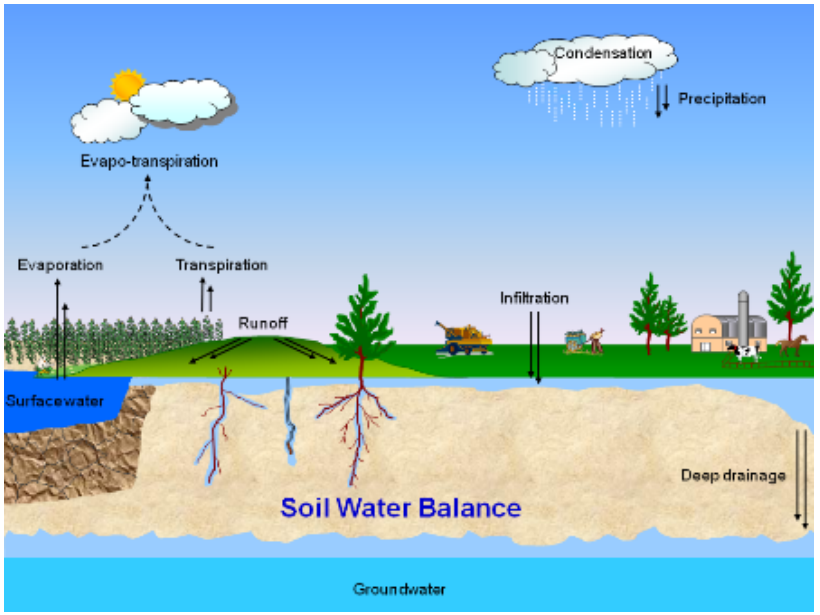
Daily Tracking and Measurements

	Dirt	**Turf**	**Synthetic**
Equipment Movement	Daily Log GPS if available	Daily Log	Daily Log GPS if available
Weather Data & Evaporation	ET Weather Station	ET Weather Station	Temperature
Moisture	TDR	TDR	
Cushion Depth	Manual Measure or new tool		Manual Measure
Firmness	Test Needed (ripped and tilled tracks only)	Going Stick or Penetrometer	

What Have We Learned from the Nine Participating Racetracks?

Water, water and water…..

- Maintaining a wet track
- Draining a turf track
- Irrigating a turf track
- Water trucks



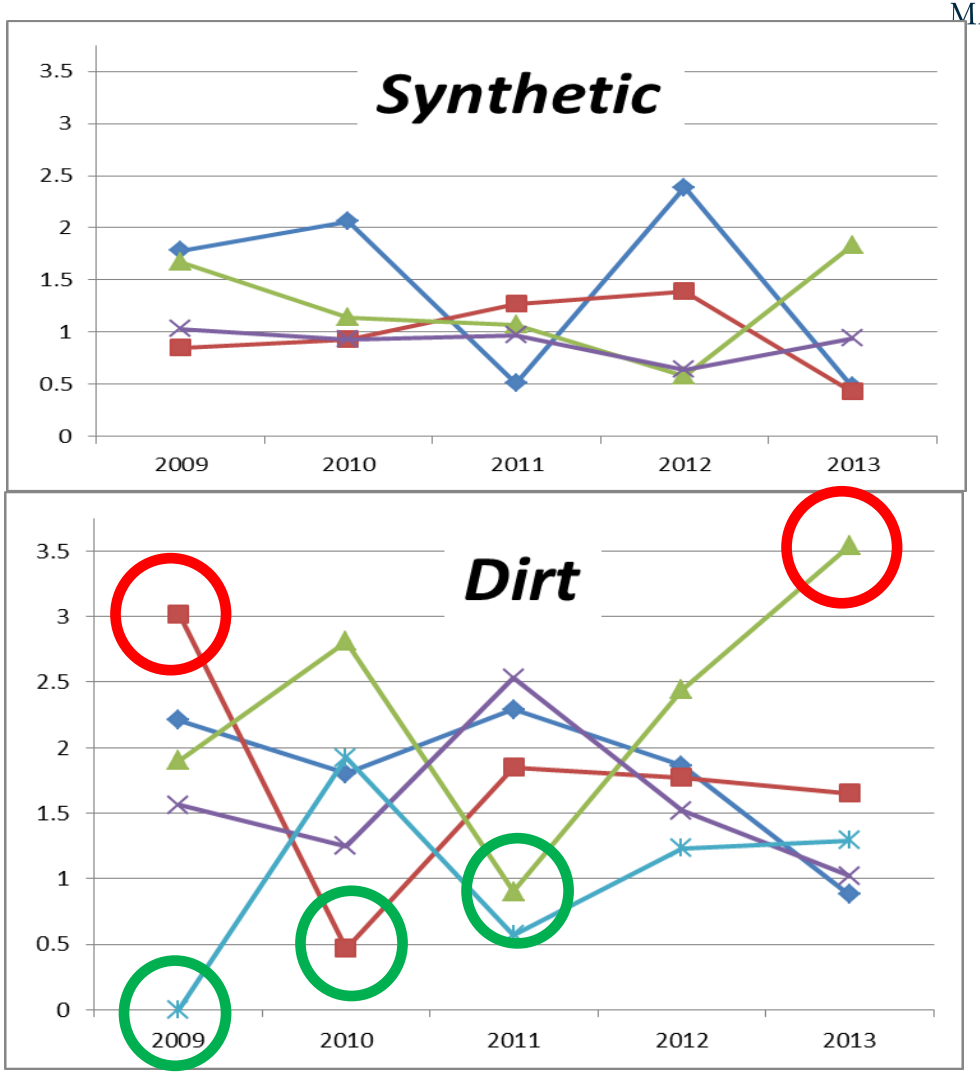
Dirt & Turf Tracks: Some Years are Bad

- Injury rates on synthetic tracks are consistently low
  Temperature
  not moisture

- Dirt tracks vary between years
  - Same people
  - Same methods

  Weather

  Response to weather



Make Every Year a Good Year!

Our Panel

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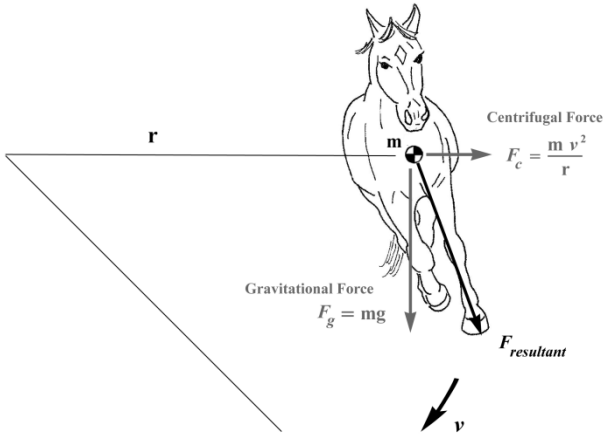
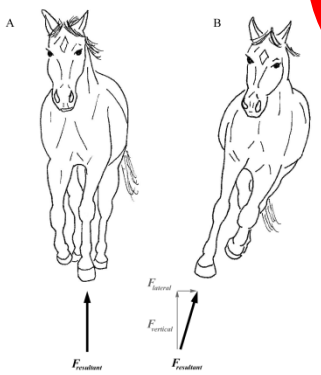
Where We Are Going Next….

- MQS Design Information

What Matters

- Equine Injury Database
  Six years of Data





A culture of data

Acknowledgements

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