



# BEAT THE HEAT!

Managing horses in hot weather

## INTRODUCTION

The hot months of the year can be challenging for all those involved in FEI Events - horses and humans alike.

This short guide provides practical advice for use by FEI Event Organisers, Officials, athletes, grooms and support personnel on the ways to protect the health and wellbeing of horses and humans when competing in high temperatures.

## PROTECT THE HORSES

Hot weather can significantly increase the horses' body temperature to uncomfortable or even dangerous levels that can result in a serious challenge to their health and wellbeing, if not properly managed.

Horses must be monitored carefully in hot weather to ensure their welfare. As described in the **FEI's Code of Conduct for the Welfare of the Horse**, extreme weather must not compromise the horse's welfare or safety and provisions must be made for cooling horses after competition.

## WHAT IS THE WET BULB GLOBE TEMPERATURE INDEX ?

The **Wet Bulb Globe Temperature (WBGT)** index is used to evaluate the risk of heat stress, taking into account **temperature, humidity, wind speed, sun angle, and cloud cover** (solar radiation). It differs from the heat index, which only considers temperature and humidity and is calculated for shady areas. WBGT is used to assess the potential for heat-related stress during physical activity, particularly in outdoor settings, such as FEI events.

## HOW TO MEASURE WBGT

WBGT is measured using a specialised device called a WBGT meter or monitor. Further to sourcing data from a local weather station, it is favourable to measure onsite using a handheld device. The FEI recommends the **Kestrel Heat Stress Tracker & Weather Meter** or the **Extech Heat Stress WBGT Meter** (*this is not an ad*). The estimated cost of these meters is EUR 180 – 500.

**Important note: If there is a risk that the WBGT will exceed 30C, prepare mitigation measures such as a shortened course (e.g. take out some jumps, hills etc.) If there is a risk that the WBGT will exceed 32C, avoid scheduling competition during these hours.**

## **HOW TO PREPARE – ADVICE FOR ORGANISERS (OCs)**

In order to manage extreme climatic conditions, put in place a plan clearly defining roles and responsibilities.

- **Produce an Extreme Weather Mitigation Plan covering the areas listed below and include a plan on how to maintain the facilities for the duration of the FEI event.**
- Risk estimation – Evaluate WBGT data over several years for the time period of your event. The data has often been collected by **a weather station at a local airport**. Check access with your national weather service, a specialised company or a research institute.
- **Monitor the weather reports and local weather data during the weeks running up to the event.** Use a WBGT meter, should you own one.

### **WATER**

1. Identify suitable locations for the water troughs, which will be the Cooling Stations: warm-up and training arenas, entry/exit from the field of play (FOP), long passages between arenas, and stable area.
2. Establish the volumes depending on the FEI discipline and number of horses (e.g 150-200L/horse after Eventing cross country).
3. Identify means of dispensation e.g. showers, buckets (please note that misting fans have very limited effect on heat stress but can be comforting).
4. Ensure the water is kept at a temperature suitable for cooling (between 10-15C).
5. Ensure sufficient drinking water (water fountains, coolers, bottled water, etc.) is readily accessible to athletes, grooms, supporting crew, officials and all those working onsite. Multiple drinking stations across the venue may be necessary depending on its size.
6. Identify additional sources of water, if not available on the venue, ideally in combination with shade.

### **ICE**

1. Estimate amounts (Eventing cross country (10-20kg/horse)
2. Identify providers of ice. Ideally order both large blocks to keep the water temperature low as well as regular ice cubes.
3. Identify venue storage of ice and how to distribute the ice to the Cooling Stations.

### **SHADE**

Identify buildings that could provide shade at strategic points i.e. Cooling Stations. If not available, tents can be used.

### **STABLES**

Evaluate if the ventilation allows for a constant airflow for sufficient maintenance of good air quality. Temperatures should not be above 25C to allow for horses to be within their thermoneutral zone. Although horses and humans do adapt to higher or lower temperatures, if the temperature is likely to be significantly higher, consider installing ventilation or air condition. It is also important to provide electrical outlets throughout the stables as many athletes and grooms will set up their own fans. Ensure that all installations are safe and in accordance with legislation.

### **PERSONNEL**

By assigning these areas to designated persons such as the **Stable Manager, Veterinary Services Manager, Venue Manager**, an Organiser can be well prepared.

### **BUDGET**

Although the costs can be kept low, it is highly recommended to establish a budget for the delivery of the plan.

## ADVICE FOR OFFICIALS

The role of the FEI Officials is to help the Organisers with advice and supervision as well as monitoring of the horses, athletes and their support personnel.

### Veterinary Aspects

It is essential for the Veterinary Services Manager (VSM) and OC-appointed Treating Veterinarians to be well-prepared to identify and quickly treat any horse with clinical signs of heat-related illnesses. The FEI recommends referring to the Equine Veterinary Journal's **Special Collection: Preparing for Tokyo Olympics** for further information.

The Veterinary Delegate holds a meeting with all veterinarians, shortly before the event begins. The FEI recommends that during this meeting, the VSM provides an explanation of all of the cooling facilities that are available and their respective locations.

## HELP THE HUMANS

High temperature can also have a negative impact on the human body and affect **athletes, grooms, coaches, venue staff, officials and spectators.**

The following measures are recommended for **ALL groups:**

- **Health before travel** – ensure you're in good health before making the trip;
- Wear a **hat** and **lightweight, long-sleeved clothing** to protect against the sun and promote cooling;
- **Do not stand/work in the sun** and make use of the shade;
- **Apply sunscreen** on any exposed skin throughout the day;
- **Maintain hydration** drinking water/isotonic drinks in sufficient quantities. If thirsty, you are dehydrated.
- **Eat regular meals.** Fluid and salts evacuated through perspiration are replaced during meals.
- **Protect your sleep.** Good sleep in air-conditioned rooms aids recovery from heat stress. If sharing a room, practice with ear plugs and eye masks.

### Special recommendations for

#### Athletes:

##### **Cool before and after exercise.**

Use air conditioning, stay in the shade, apply cold towels.

#### Grooms:

**Work in the shade**, do not stand in the sun watching your athlete.

#### **Recommendation to athletes and grooms on the post-competition care for horses:**

Once the horse has finished competing, remove all tack and equipment so there is as much airflow and evaporation across the horse's body as possible. Then cool the horse by pouring water over its body.

#### **Coaches, stewards, staff (liable to long periods outside)**

- **Carry drinks with you;**
- **Look for early signs of heat stroke** – in yourself and others.

#### **Signs of heat stress include:**

- Sweating profusely
- Nausea
- Confusion
- Dizziness
- Fainting
- Cramps
- Headaches

**Do not ignore these signs** – seek advice. Locate in advance the medical services, the availability of ambulances, etc.

## COMMUNICATION

### Before the event

The FEI advises that sufficient communications take place regarding the cooling facilities available at the event. A member of the OC should be identified as a **dedicated point of contact on all weather and cooling-related matters**.

Before the event takes place, **details regarding the types of cooling facilities and their respective location(s) must be communicated to the FEI Officials, athletes, grooms and any other supporting personnel**. This will allow the athletes to effectively manage their horses to keep them cool during and after training and competition.

### During the event

It may be necessary to make further communications once the event has started, such as changes to the weather forecast and warnings of hot temperatures, that may require changes to the cooling facilities during the event. Establish a method of communicating such information to the necessary personnel.

## REVIEW AND FEEDBACK

The location of the cooling facilities depends on the equestrian discipline and unique layout of each venue. At the end of the event, Organisers are encouraged to carry out a review to determine how effective the cooling facilities and their maintenance have been and if any improvements could be made to future editions of the show.

## ADDITIONAL INFORMATION

The FEI has carried out numerous studies over the past 30 years to determine the most appropriate measures of keeping horses and humans healthy in hot weather.

For additional detailed information and to consult these studies, please check the **FEI Knowledge Base**.

The FEI has produced **eight Beat the Heat animated videos** covering guidance for competing safely in hot and humid conditions. They are available in **FEI Campus** and in a **dedicated playlist on YouTube**.

## CONTACT

For questions:

- regarding horse welfare, please contact **veterinary@fei.org**
- regarding athletes, please contact **medical@fei.org**