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HOT AND BOTHERED?

How best to cool a horse down?

The summer is now finally here, and the temperatures look as if they are set to be extremely high. It's known that cooling horses is vital but what is the best procedure for cooling horses down quickly and efficiently.

Generally, most of the focus on heat or heat and humidity research has been on the eventer or endurance horse, however it is important to note that horses in all disciplines may also be at significant risk of heat related injury. For example, although the actual length of competition in Jumping and Dressage is short, these horses are often larger, heavier horses and therefore at greater risk of over-heating, especially as a result of long periods of warm-up. It's also vital to note that horses not sufficiently fit enough to handle the demands of competition should be monitored more carefully as they are at greater risk of heat injury. No matter the horse or discipline its vital all owners, trainers and grooms understand the signs of a hot horse.

There are a several indicators that a horse is extremely hot and could be at risk.

- *Excessive sweating – horse completely covered in sweat and/or sweat running from the body*
- *Horse feels very hot to touch*
- *Ataxia (unsteadiness) – especially when stopping after exercise*

- *Blowing very hard (deep and laboured breathing)*
- *Panting (fast and shallow breathing)*
- *A high rectal temperature – above 40°C (104°F)*
- *Prominent blood vessels in the skin*
- *Horse may show little reaction to people or environment*
- *Horse may appear distressed*

For horses that are used to hot weather extreme cooling may not be necessary and simply a period of walking after exercise followed by cover under shade maybe all that is required.

However, for extreme weather or those that have been working much harder it may be necessary to help the horse cool down by using cold water from a hose or in the case of hot horses at competitions, water and ice.

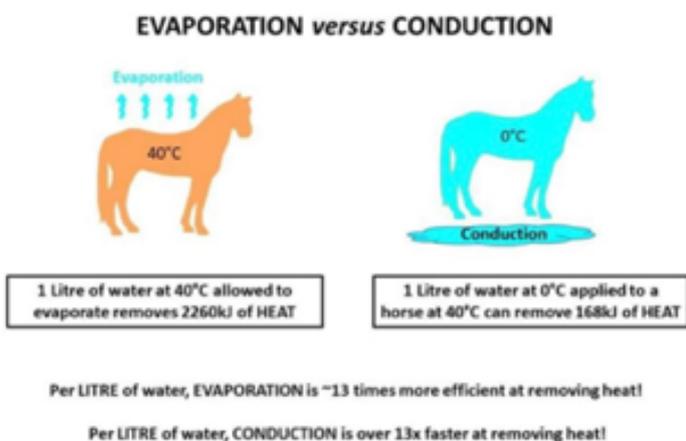
The speed of cooling is related to 3 things:

1. *Temperature of water put onto the horse*
2. *The surface area of your horse that you cover with water*
3. *The amount of water that you put on*

The fastest rate of cooling would be with large volumes of cold water (0-5oc) all over the body. This is vital if the horse is showing signs of extreme heat stress.

Per litre ice-cold water (0-5oc) removes heat faster than evaporation of 1litre of water or sweat.

However per litre, allowing complete evaporation of 1litre of sweat or water removes 13 x more heat but it takes 10-15 x longer to remove said heat.



Picture and information taken from Dr David Marlin 2019.

So, what does this all mean for the horse?

Using Cold-Ice cold water (0-5oc) = ideal for situations where rapid cooling is needed, such as horses under heat stress, or those having experienced intense exercise (endurance, eventing, racing).

Evaporation of water or sweat (cooling naturally or with smaller amounts of water, ie a bucket and sponge) = slow but doesn't waste as much water. This is certainly an issue in South Africa with current water constrictions. But this method of cooling is better suited for those that haven't worked to the extreme and are not showing signs of heat stress.

Other techniques

Shade

Keeping horses in the shade is more desirable than being in the full sun but is not an effective management on its own for cooling hot horses, rather for maintaining cooler temperatures once they have been achieved.

Fans

Standing horses in front of fans increases heat loss by convection. It also increases the rate of evaporation of water or sweat. Fans also increase comfort but by themselves are not an effective cooling technique for extremely hot horses.

Misting Fans

Misting fans provide comfort, however on their own they are not an effective technique for cooling hot horses. Misting fans spraying ambient temperature water are less effective the higher the humidity. Misting fans spraying cold water (e.g. 5°C or 41°F) are more effective but still only appropriate for creating comfort as opposed to rapid and effective cooling. (Marlin, Misheff & Whitehead 2018)

Ineffective Cooling techniques to avoid

A variety of old cooling methods still circulate which are not supported by current knowledge and recent research:

Ice packs

Placing ice packs over large blood vessels, such as those between the hind legs or over the jugular is an extremely inefficient way to cool a hot horse.

Wet Towels

Placing wet towels over the horse is not an effective way to cool a hot horse. The cooling effect is dependent on the temperature of the water the towels are soaked in and the rate of evaporation.

In a humid climate the towels will warm-up to the horse's skin temperature and then reduce heat loss. (Marlin, Misheff & Whitehead 2018)

Some common myths:

1. Myth: "You should never put cold water on a hot horse"

A: "Ice cold (0-5oc) water on hot horses does not cause shock, laminitis, kidney damage, muscle damage, tying up or heart attacks and can be vital for horses needing to cool rapidly to avoid overheating and extreme exhaustion".

2. Myth: "Water left on a horse will heat up and insulate making the horse hotter"

A: "Water is better conductor of heat than air, therefore a wet horse will actually cool faster than a dry one, even if the humidity is 100%."

3. Myth: "Scraping is essential"

A: "Scraping just wastes time that could be better spent putting more water on to cool by conduction. Scraping also wastes water when water is in short supply. Rather allow the water to remain on the horse to evaporate and assist with cooling". "You only need to scrape water off if you are trying to dry a horse quickly (ie in colder months where quick drying is preferable), not trying to cool him down".

4. Myth: "Concentrate the water on large veins, arteries inside the back legs, large muscle groups"

A: "Cooling by evaporation or conduction works by cooling the blood flowing through the small blood vessels in the skin. The more skin you cool, the quicker you cool the horse. Apply water everywhere". (myths taken from Marlin 2019)

Dietary considerations for hot weather

Some heat is produced during the digestion/breakdown of food in the digestive tract. Evidence from a number of studies suggests that the heat production from a high fat and forage diet is less than from diets which provide energy in the form of carbohydrates (starch and sugars). This could make a high fat and fibre diet preferable for horses working often in hot conditions.

However, if the horse is working well on a higher carbohydrate diet there is no major reason to suddenly change due to environmental temperatures, as the advantage in terms of heat load on horses is likely to be small and making adjustments may only be worthwhile if the horse is not performing at his best.

The key to feeding horses in hot weather is that the maintain their correct body condition. A horse that is too thin or too fat can not

perform at their best and this puts additional pressure on the body exposing the horse to a higher chance of heat stress.

Ensuring the horse always has access to hay is advisable as not only does it assist in keeping the gut healthy and helps with reducing the incidence of gastric ulcers and colic but it also acts as a reservoir for fluids within the gut, further reducing the risk of dehydration.

One of the important things we can do to aid recovery is to allow horses to drink. It's been shown in several studies that horses have an increased desire to drink immediately after they have finished exercising. Allowing them to drink at this time, even whilst they are still hot and blowing hard, does not carry any risks contrary to old wives tales. Its vital that water is always available, however Research has shown that there is no advantage to providing cold (10°C) drinking water and this could actually result in a lower intake, so ensuring that water is available is more important than the temperature the water is provided at.

Should an electrolyte be used?

There are many theories around the use of electrolytes. There is absolutely no doubt that horses training and competing in hot climates will have increased sweat losses. Sweat is high in electrolytes. Over time horses could develop electrolyte imbalances which could lead to reduced performance or an increased risk of conditions such as Tying up (exertional rhabdomyolysis) or "Thumps" (synchronous diaphragmatic flutter SDF). Therefore, using an electrolyte is recommended. However, this would apply only in situations where the horse is losing vast amounts of sweat on a regular basis.

An example would be a horse that works into a vast white, foamy sweat every single time it exercises/competes.

Therefore, if your horses is not exercising to this point, feeding additional electrolytes may not be necessary. In the case where a horse is not exercising at all and is also being provided with some "concentrate feed", feeding an electrolyte could be damaging by oversupplying certain nutrients.

References:

OPTIMISING PERFORMANCE IN A CHALLENGING CLIMATE PREPARATION FOR AND MANAGEMENT OF HORSES AND ATHLETES DURING EQUESTRIAN EVENTS HELD IN THERMALLY CHALLENGING ENVIRONMENTS, Dr David Marlin, Dr Martha Misheff & Dr Peter Whitehead, 2018 https://inside.fei.org/sites/default/files/Session_6_Optimising_performance_in_a_challenging_climate_SUPPORTING_DOC.pdf?fbclid=IwAR1tN8MTPgtX8_vZEK7fHwq_nSIL7Cn5ut-UqSvagr2KFuyQhVfpe5lhB4A
Dr David Marlin 2019 www.davidmarlin.co.uk and Social media postings relating to the work done on the above FEI document.

TESTIMONIAL

Dear Epol & Equus

I have a 12 year old TB gelding named Guma Lodge. Since changing to your food I can honestly say he has never been better.

His energy levels are amazing. This food does not make him hot and naughty. He is never dull, never droopy. We competed in the South African Western Mounted Games National championships and he was perfect. He did not become tired And NO condition was lost, which is a problem many experiences during competition. He gets 3kg of Epol rider muesli per day plus lots of hay to support our grazing.

Thank you for a wonderful product.

Leonor Steenberg

SAWMGA NATIONALS 2019

For an absolutely free consultation with no further obligation contact our professional consultants to schedule a visit to your yard.

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