

Take the Cool Cows Quiz

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For the next few months, a priority for dairy farmers in the Murray region will be keeping cows as cool as possible, to minimise the immediate and longer term impacts that heat stress has on cows' production, fertility, health and welfare.

To help you re-focus on heat stress and test your knowledge, here is a short True / False Quiz (Sorry - there aren't any prizes on offer, but have a go anyway!).

Read each of the 12 statements below and circle whether you think it is true or false.

Statement		True or False? (Circle below)	
1	Heat stress is only a concern on days that exceed 30°C.	True	False
2	Unusually warm days early in late Spring - early Summer can stress cows as much as much hotter weather later in the hot season.	True	False
3	Cows are very effective at offloading heat through sweating.	True	False
4	In paddocks and laneways, providing shade to the herd should be your first priority as it the most effective way of reducing heat load.	True	False
5	Having cows standing in the holding yard for a prolonged time before milking on hot days can lead to a significant increase in their heat load.	True	False
6	Sprinkling cows in the dairy holding yard presents a high risk of mastitis, so should only be done on very hot days.	True	False
7	It is good practice to wet the dairy holding yard by hosing, flood washing or sprinkling for the hour before cows arrive for afternoon milking.	True	False
8	It is important that cows are given ready access to drinking water as soon as they leave the dairy after milking	True	False
9	Shade over the dairy holding yard is of greatest benefit if cows are free to move between the holding yard and a feed pad nearby.	True	False
10	Anyone can easily install an effective, long-lasting shade-cloth structure over a dairy holding yard. There is no need to get a professional designer / installer involved.	True	False
11	Heat stress is really only a concern in lactating cows. It doesn't have any significant impacts on dry cows.	True	False
12	There are several nutritional strategies that can be used to help cows manage their heat load and minimise milk production drops in hot weather.	True	False

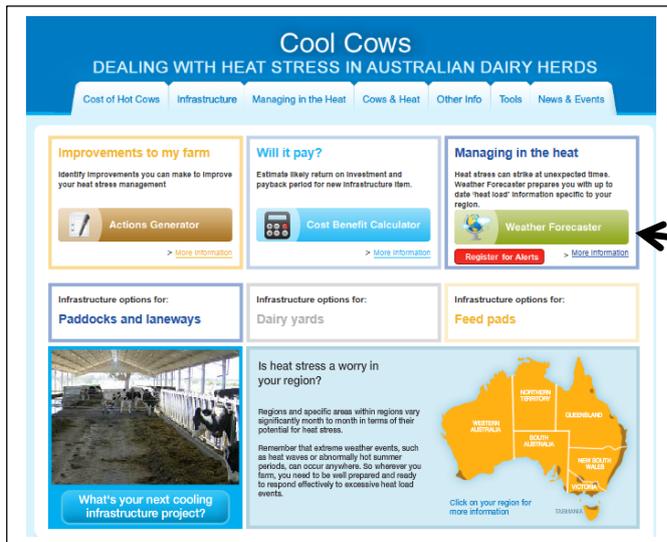
When you have completed the quiz, turn the page to see how well you did.

Answer		
1	False	Your herd feels the heat more than you may realise. Even at 25°C, cows begin to feel uncomfortable and must start actively managing their body heat content or 'heat load' to maintain a normal core body temperature and keep cool. So don't wait too long to start implementing cooling strategies such as using your sprinklers in the dairy holding yard.
2	True	Cows that have not been pre-conditioned to hot weather will have a greater stress response. Cows need time to acclimatise. So unusually warm weather events in late Spring – early Summer need to be taken seriously. That's why the Cool Cows Dairy Forecast service issues alerts on such days early in the hot season.
3	False	Sweating is the cow's primary mechanism for heat loss, but cows are not great sweaters (A cow produces only one tenth as much sweat per square metre of skin as a horse). Individual cows in a herd also vary widely in their ability to increase sweating rate and control their core body temperature. Air movement is required to increase evaporation from the cow's skin. So in hot weather, sprinklers and fans are very useful aids.
4	True	Trees planted in paddocks or laneways can reduce radiant heat load by 50% or more. The aim is 4 m ² of shade per cow at midday. Use the Cool Cows method to rate your paddocks from coolest to hottest based on shade cover and walking distance from the dairy. If redesigning your farm layout, consider orientating the long axis of paddocks north-south to help maximise shade throughout the day.
5	True	A cow produces as much heat on a hot day as a 1500 watt hair dryer on high! So when cows are standing close together in a dairy holding yard, a lot of heat is transferred, and their body temperatures can rise quickly (within half an hour). Actions you can take to ensure your holding yard is a cooling centre (and not a sauna) are: Use sprinklers, consider a shade structure and fans as the next upgrade for your holding yard, finish morning milking by 9am and delay afternoon milking until 5pm on hot days, run smaller sized milking groups if practical.
6	False	Sprinkling cows shouldn't lead to putting cups on wet teats and increasing the risk of mastitis. By inserting an adjustable on/off timer to your sprinkling system, you can ensure that you wet cows effectively to the skin without getting their udders wet (while also conserving water). You will need to adjust the on/off cycle to suit your sprinkler nozzles and water flow rate - start with 2 minutes on / 10 minutes off, and adjust as necessary.
7	True	Pre-wetting your dairy holding yard for the hour before cows arrive for afternoon milking really helps dissipate the heat stored in the mass of the concrete. This can be done by hosing, flood washing or sprinkling, but using a sprinkler system with an adjustable on/off timer (e.g. 2 minutes on / 5 minutes off) will conserve water.
8	True	In hot weather cows' daily water consumption doubles to 200 litres plus, and standing in a holding yard before milking and eating dry grain / concentrates in the bail makes them thirsty. A large, easily accessible water trough on the exit side of the dairy is therefore a must, and if well positioned, shouldn't disrupt cow flow. (Why would you want to limit cows' access to drinking water when it makes up 85% of the product you sell – milk?)
9	True	The ultimate aim of any shade structure is to optimise feed intake. Feed and water should ideally be provided within close proximity to the shaded dairy holding yard so cows can readily move to and fro.
10	False	A shade cloth structure must be carefully designed to withstand loads from wind, rain, hail, and the weight of the structure itself. So you should consult a registered builder or structural engineer who understands how to design and build a structure that will withstand these loads. Alternatively, if buying a package, ensure that structural computations are supplied, the installers are experienced and local building regulations are met.
11	False	While dry cows in late pregnancy produce less metabolic heat than lactating cows, they are still affected by heat stress through impaired function and development of the udder and placenta, and suppressed immune function. Cows that are dry in hot months may therefore have reduced milk production in the next lactation, smaller, less viable calves and a higher risk of the health problems commonly seen around calving than cows that are dry in cool months.
12	True	Nutritional strategies available which are worth discussing with a professional nutritionist These include: Feeding high quality, highly palatable forage, replacing some of the wheat/barley in the diet with a slower fermenting starch source such as maize grain, using a

	bypass fat supplement, adding extra buffers to help manage ruminal acidosis risk, feeding higher quality protein sources and using feed additives with potential to assist cows in hot weather such as betaine. However, remember that the highest priority should always be to provide cows with adequate shade and evaporative cooling.
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If you correctly answered True or False to 10 or more of the statements, well done! You have a pretty good grasp of heat stress and how to minimise its impacts on your cows.

For detailed information on infrastructure options and farm management strategies to help keep cows cool, browse the Dairy Australia's Cool Cows website (www.coolcows.com.au). There are also several tools on the Cool Cows website you may find very useful, including the Cool Cows Dairy Forecast Service.



As the hot season progresses, it is important to keep an eye on weather conditions which may impact seriously on your cows' heat load and take additional steps to keep cows cool when appropriate. So take advantage of the free **Cool Cows Dairy Forecast Service**.

This service enables you to set up your own farm (using your GPS co-ordinates) as a site-specific weather station, monitor daily weather conditions (including the Temperature Humidity Index) and receive alerts by SMS, email or fax when heat stress events are approaching. To register, go to www.coolcows.com.au and click on 'Weather Forecaster'.

Remember – the most useful and practical way to gauge how well your cows are coping with the prevailing weather conditions and managing their heat load is to check their breathing rate. If your cows are at more than 60 breaths per minute, it means their core body temperature is elevated and you need to take action. For details, go to www.coolcows.com.au/go-on-alert/cow-breathing-rate.htm

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