

Heat tolerance, part of breeding an efficient animal

Dairy farmer: Trevor Parrish

Region: Kangaroo Valley, Queensland

Topic: Heat Tolerance ABV

Two years ago, Trevor Parrish's bull-buying clients were asking about the new Heat Tolerance Australian Breeding Value (ABV). Now it doesn't rate a mention.

But that's not because the NSW bull-breeder's clients don't care about Heat Tolerance. Quite the contrary. These farmers, who are mostly in NSW and Queensland, consider Heat Tolerance as one of the core breeding values that make-up a sustainable and efficient animal.

These farmers, who milk up to 2,000 cows, expect high Balanced Performance Index (BPI) bulls to have an above average Heat Tolerance ABV.

"Clients, they are thinking longer term, we have to select for it," the Kangaroo Valley farmer said.

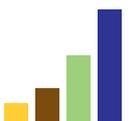
"Into the future, they are going to want more of a compact cow, a cow that can handle just about everything. A smaller cow, with good feet – that can walk more – and converts pasture. A cow that's efficient. Heat tolerance is part of that efficiency. As a breeder, you are trying to cover all the bases and Heat Tolerance – now it has an ABV – is part of a solid, good quality cow."

DataGene's *Good Bulls Guide* reflects the growing focus on breeding heat tolerant bulls.

In August 2019, there were 404 Holstein Good Bulls with a Heat Tolerance ABV of more than 100 – which is the Australian average. Included in this group were 61 Holsteins which scored at least 105 for Heat Tolerance; this means they are 5 per cent more tolerant to hot and/



Trevor Parrish aims to breed dairy cattle with a high BPI and above average Heat Tolerance ABV. (BPI: Balanced Performance Index – reflects traits that influence profit. ABV: Australian Breeding Value – a measure of genetic merit for a single trait)



or humid conditions than the average. Or, the fall in production due to these conditions would be 5 per cent less than average.

This compares to a small amount of bulls that ranked more than 100 for Heat Tolerance back in December 2017, when the breeding value was first released.

Australia is still the only country with a Heat Tolerance Australian Breeding Value. Scientists developed this ABV by identifying genetic markers for heat tolerance using genomic technology (DNA testing).

Trevor said breeding was one of a number of tools he used to help his herd of up to 240 registered Holsteins handle hot, humid conditions.

“It is just one of those things, we put sprinklers on to try and ease the heat and we have shade – trees – you have got to have shade. Breeding for Heat Tolerance is just like planting a tree, how long will it be until the tree provides you with shade? But if you don’t start planting trees and looking to breed for Heat Tolerance, it is only going to get worse. It is about starting.”

Trevor, his wife Leah, their daughter Toni and son-in-law Nathan are all part of the Illawambra Holsteins dairy business. Nathan has a rural contracting and fencing business but now works more on the farm, which has enabled them to lift milking herd numbers by about 40 cows.

The business also sells about 30 bulls and 100 females annually to dairy farmers and supplies sires to be tested for artificial insemination (AI).

Breeding for AI also requires a focus on Heat Tolerance for the domestic and international market, according to Trevor.

“A bull that’s above 100 for Heat Tolerance is a fairly good selling point and you will get royalties on those bulls.”

Breeding the ultimate bull is a work in progress. Last month Trevor had one with a 341 BPI, 99 for Heat Tolerance and it was also A2A2.

Selecting bulls and researching the market is one of Trevor’s hobbies. He enjoys breeding and has a set of criteria for how he selects sires.

“They have to have a high BPI, and other indices and they have to be A2:A2,” he said. They must have a BB Kappa

To breed for improved heat tolerance, look for high BPI bulls with a Heat Tolerance ABV of more than 100. DataGene recommends using a team of bulls to allow for the lower reliability of the Heat Tolerance ABV.

casein, which ensures a higher cheese yield, I look at the Feed Saved ABV and then I rule-out any with a Heat Tolerance below 98.”

Trevor can track improvements in these traits in his female stock through genomic testing.

Selecting for high Heat Tolerance has paid dividends for Trevor. Most of his herd has a Heat Tolerance of more than 90 which means the cows susceptible to heat “naturally culled themselves”.

“What we used to see here is, in the summertime cows could be in calf and three months later they come in bulling because they have aborted their calf due to the heat,” he said. “So, because of their fertility they end up in calf later or they don’t get in calf which means they are culled.”

The science behind the Heat Tolerance ABV has provided Trevor with reassurance when it comes to making breeding decisions.

“The good thing with Heat Tolerance is there’s no human error,” he said. “The reliability is at 38%, yes I would like it higher, but that is all a DNA test. A bull at 105 is better than 95, it is that simple.”

The Illawambra herd is medium-stature and fed a pasture diet from about 70ha plus about 2 tonnes/cow/lactation in the bale of a pellet supplied from a nearby ethanol plant.

More than half the herd are heifers as Trevor has opted to retain his best genetics. Anything that’s not A2:A2 or has a BPI of less than 150 is on the ‘for sale’ list. Spring production was about 27 litres/cow/day with 3.35% protein and 4.2% butterfat.

As breeding evolves, Trevor said Heat Tolerance would be as common as the ABV for calving ease.

“I think AI centres won’t take bulls that aren’t good for Heat Tolerance, it will be like calving ease, now they won’t buy a bull that causes difficult calvings.”

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