

BY THE NUMBERS

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Angus Hair Shedding EPD

Registered Angus breeders have a new selection tool available — the Hair Shedding EPD.

Early shedding of the winter hair coat indicates better heat tolerance and an increased tolerance to fescue toxicosis. The American Angus Association recently launched a Hair Shedding (HS) expected progeny difference (EPD).

The why

As the days get longer and the temperature rises, biological responses work to regulate body temperature. In cattle, this comes in a form of evaporative cooling, more commonly known as sweating.

However, when the winter hair is still present and sweating begins, it doesn't allow the evaporative cooling to occur and hinders thermoregulation.

To compensate, cattle use energy to increase respiration and perspiration rates. This can compromise the animal's well-being and productivity.

Fescue toxicosis comes from a cattle consuming endophyte-infested tall fescue, which can be an issue for cattlemen living in the fescue belt.

The research

The research project, started in 2008 and supported by the Angus Foundation, collected data on 5,294 females during a two-year period. These females, located in 20 different herds across the Southeastern United States, Missouri and Texas, ranged in ages from 2 to 10+ years of age. About half of these females were scored twice, once per year over the two-year project, allowing for a repeatability model to be utilized. Repeatability models allow for multiple measures on the same female to be utilized for increased prediction accuracy. Also evaluated as a result of hair shedding was to estimate its effects on cows' body condition score (BCS) and the weaning weight of their calves.

Hair shedding scores were taken by two trained technicians and recorded on a 1-to-5 scoring scale. A score of 1 represents an animal 100% slicked of a winter hair coat, where a 5 represents an animal with 0% winter hair shed, a full winter hair coat.

These scores were recorded in the spring when hair shedding had started but was not complete, so there was variation in the stages of hair shed.



Continued on page 28

The results

Over the last 14 years since the start of the project, research has revealed interesting results. This led to a selection tool for cattlemen to select cattle that can produce cattle better adapted for those environments.

Hair shedding is a moderately heritable trait ($h^2 = 0.36$), indicating genetic selection can take place. There was a negative genetic correlation estimated between hair shedding and BCS, suggesting as animals retain more of the winter hair coat, their body condition score decreases.

The American Angus Association provided scoring guidelines for use in nationwide scoring. After release of the scoring guide, members began to submit scores and grow the database to continuing research for this trait. In 2020, the Association released the first research HS EPD.

The present

On May 27, 2022, the HS EPD was released from the research to production environment.


When the genomically enhanced EPD was released, there were more than 21,000 hair shed scores in the weekly national cattle evaluation (NCE). Currently, the average HS EPD is +0.54, and ranges from -0.36 to a +1.44.

Hair Shedding EPD is expressed in units of hair shed score, with a lower EPD being more favorable indicating a sire should produce progeny who shed their winter hair coat earlier in the spring.

For example, if comparing two sires, Bull A has a HS EPD of +0.30 and Bull B has a HS EPD of +1.30,

we would expect, when mated to similar females, on average, for Bull A's progeny to score 1 hair shed score more favorably to earlier hair shedding.

Hair shedding scores can be collected on cattle as early as the yearling age window and in subsequent years. Scores need to be collected from April to June, when there is variation in hair coat shedding. Groups of cattle need

to be scored within a seven-day window to be eligible for the same contemporary group. Scores can be submitted via AAA Login or AIMS (Angus Information Management Software). 

Editor's note: For more information about how to score hair shedding in cattle or to submit scores, visit www.angus.org/performance or call the Member Services department at 816-383-5100.

Hair shedding scores



Score 5

0% shed – full winter coat



Score 4

25% shed – lost winter coat around head and neck



Score 3

50% shed – lost hair along topline and farther down brisket compared to a 4



Score 2

75% shed – only holding hair on flanks and around belly



Score 1

100% shed out – no remaining winter coat