



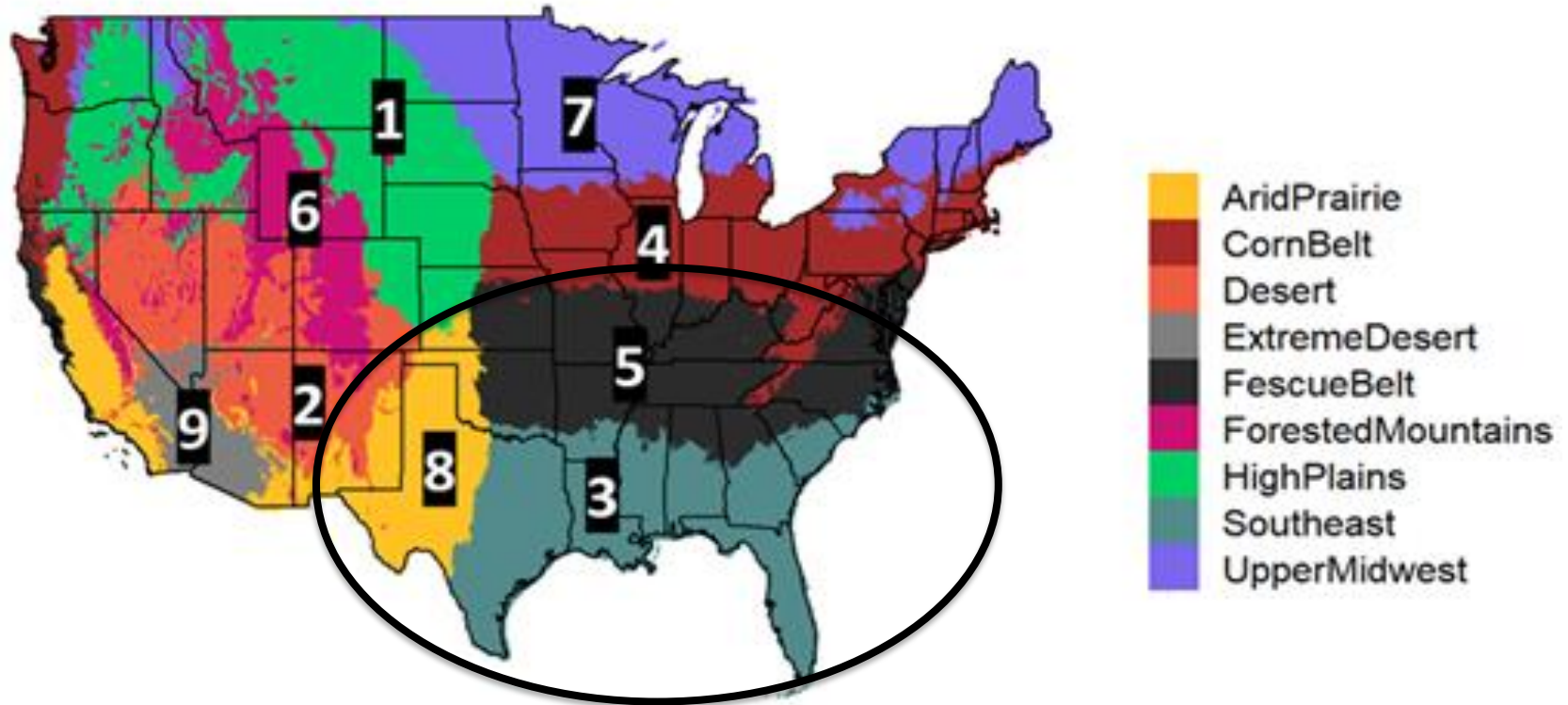
ANGUS
THE BUSINESS BREED

Implications and Genetic Evaluation of Hair Shedding

Angus Genetics, Inc.

Kelli Retallick, M.S. – President

Thinking environmental adaptability and novel trait selection



Hot Fescue &
Extreme Heat

Rowan et al., 2020

American Angus Association[®]

Hair Shedding Scoring Guide

TRAIT DESCRIPTION GUIDELINES

- Early summer hair shedding is an indicator trait for heat tolerance and tolerance to fescue toxicosis.
- Score between mid-April to mid-June or when hair shedding is in progress.
- 1-5 visual appraisal scale, where 5 is a full winter coat, and 1 is completely slick. While there is some variability in shedding patterns between individuals, cattle tend to shed from front to back and top to bottom.

SCORING TIPS

- Score cattle when there is the most variability in shed-off, which depends partly upon location (north vs. south).
- Aim to score cattle on the same day or within a few days of each other.
- Cattle should be at least yearlings when hair shedding scores are recorded.
- Ideally, record hair shedding scores every year on the whole herd.

ANGUS
THE BUSINESS BREED

Hair Shedding Scoring Guide



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

***Photographs courtesy of Dr. Trent Smith, Mississippi State University*

Visit AAA Login at Angus.org to submit scores. Call the American Angus Association[®] team at 816-383-5100 with questions.

ANGUS
THE BUSINESS BREED

ANGUS
THE BUSINESS BREED

Score 5 – 0% Shed, Full Winter Coat



Score 4 – 25% Lost winter coat around neck and head



Score 3 – 50% Shed, Lost hair along topline and brisket



Score 2 – 75% Shed, Only holding hair on flanks and around belly



Score 1 – 100% Shed, No remaining winter coat



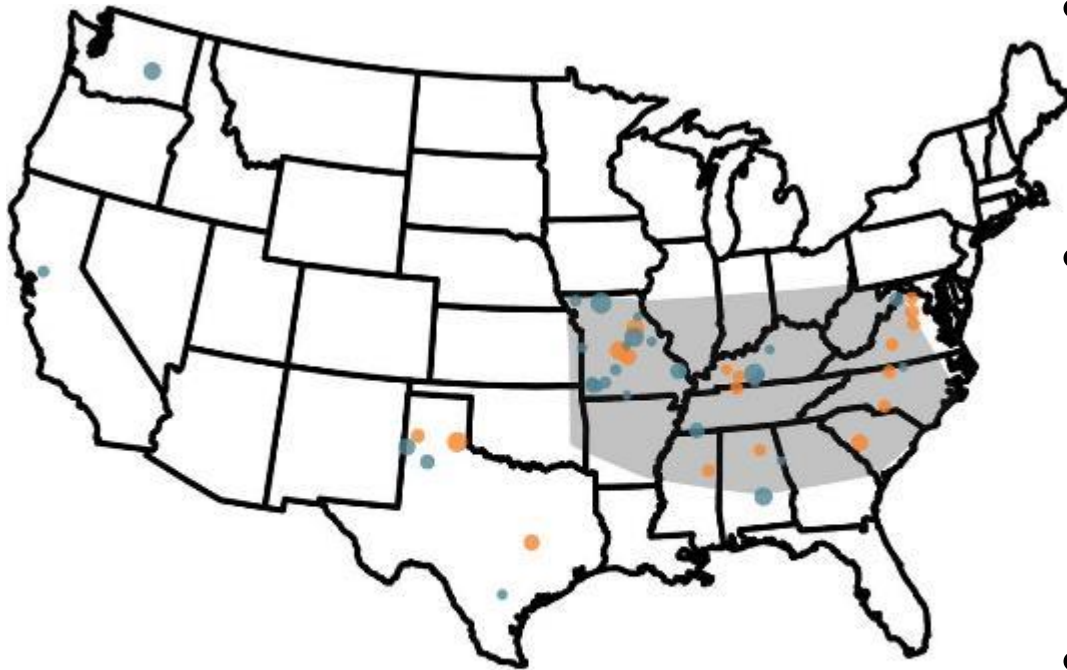
Research with external groups



Dr. Harly Durbin,
Past AGI Intern



Most records were captured within the fescue belt



● AGI data ● Mizzou Hair Shedding Project data
● 250 ● 500 ● 750 ● 1000 ● 1250

Durbin et al., 2020

- Data captured from 2011-2019 & from April through June
- Scores reported with DOB, Sex, Ranch Location, Grazing Toxic Fescue
- Total records n=14,465 from 8,642 individuals

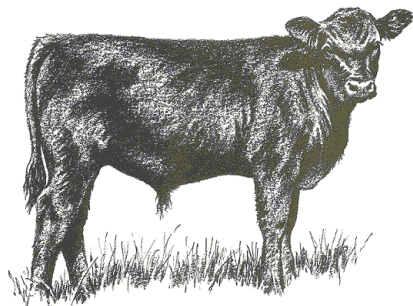
Hair shedding was found to be moderately heritable

- Heritability = 0.42
- Repeated records model utilized
- Fixed Contemporary group accounts for scoring age, fescue or non-fescue pasture, ranch origin



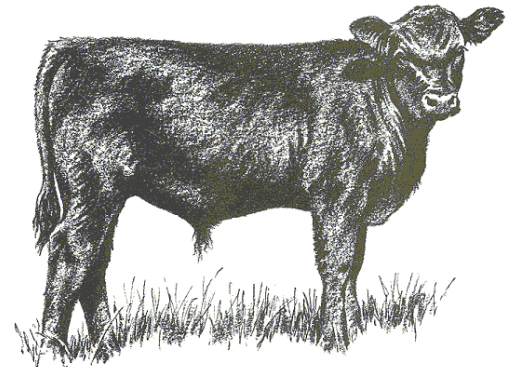
Hair shedding correlated with calf performance

- Moderate correlations with dam's hair shed score and weaning weight of her calf



Score 5

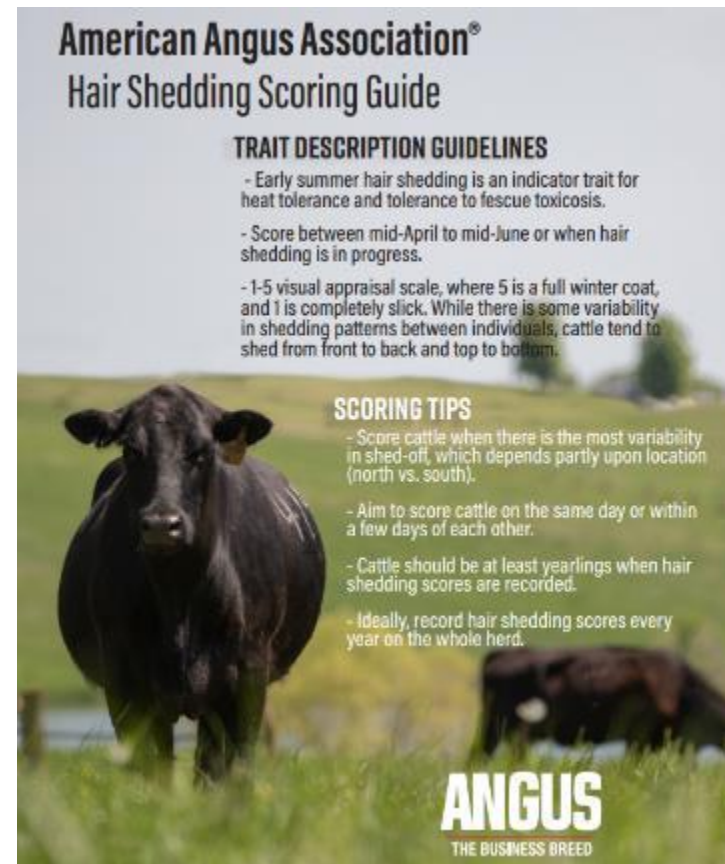
35 lb. difference
in calf WW



Score 1

Implementing hair shed scoring on farm

- Collect scores when variation exist in the herd
- Age has a significant effect on hair shedding. Cattle need to be at least yearlings in order to be used for the genetic evaluation.
- Score the entire herd to capture full contemporary groups
- Collect at least three years of data on each female



American Angus Association®
Hair Shedding Scoring Guide

TRAIT DESCRIPTION GUIDELINES

- Early summer hair shedding is an indicator trait for heat tolerance and tolerance to fescue toxicosis.
- Score between mid-April to mid-June or when hair shedding is in progress.
- 1-5 visual appraisal scale, where 5 is a full winter coat, and 1 is completely slick. While there is some variability in shedding patterns between individuals, cattle tend to shed from front to back and top to bottom.

SCORING TIPS

- Score cattle when there is the most variability in shed-off, which depends partly upon location (north vs. south).
- Aim to score cattle on the same day or within a few days of each other.
- Cattle should be at least yearlings when hair shedding scores are recorded.
- Ideally, record hair shedding scores every year on the whole herd.

ANGUS
THE BUSINESS BREED


Hair Shed Research EPDS

- 20,785 records in total
- Look to move this from a research to a production EPD

09/02/2021

Hair Shed Research EPD

Registration No.	Name	Birth Yr	HS EPD	HS Acc	HS Prog
7682162	C R R Emulous 26 17	1972	+ .73	.58	42
9250717	Q A S Traveler 23-4	1978	+ .64	.52	
9891499	Tehama Bando 155	1980	+ .26	.54	5
10095639	Emulation N Bar 5522	1982	+ .32	.48	2
10239760	Paramont Ambush 2172	1982	+ .47	.44	3
10705768	R R Traveler 5204	1985	+ .61	.44	42
10776479	N Bar Emulation EXT	1986	+ .26	.76	15
10858958	D H D Traveler 6807	1986	+ .40	.67	1
10988296	G D A R Traveler 71	1986	+ .54	.40	4
11090295	Finks 5522-6148	1987	+ .65	.47	1
11104267	Bon View Bando 598	1988	+ .31	.54	1
11105489	V D A R New Trend 315	1988	+ .52	.51	1
11160685	G T Maximum	1988	+ .76	.46	5
11196470	Schoenes Fix It 826	1988	+ .75	.44	3
11208317	Sitz Traveler 9929	1988	+ .46	.43	3
11294115	Papa Durabull 9805	1989	+ .18	.42	3
11367940	Sitz Traveler 8180	1990	+ .60	.53	3
11418151	B/R New Design 036	1990	+ .48	.74	35
	G D A R Traveler 044	1990	+ .57	.44	1
	Emulation 1680	1990	+ .14	.62	8
		1990	+ .29	.45	1
		1991		.40	7
				.47	2
				.40	2
				.45	27
				.69	4
				.44	9
				.60	1
				.45	1
				.59	1
				.41	

Management			
Doc Acc %	Claw Acc %	Angle Acc %	PAP Acc %
Prog	Prog	Prog	Prog 
+18	+ .54	+ .48	- .40
.33	.26	.27	.27
45%	70%	45%	15%

Selection tool to improve adaptability in these environments

- Allows individuals to select cattle more suited to these environments
- Opens doors for international commerce for Angus cattle going into harsher environments
- Improves implications around sustainability and animal welfare

How and do these individual environmental adaptability tools fit within the toolkit of selection indexes?



Questions & Discussion

Kelli Retallick, M.S.
kretallick@angus.org

President
816-383-5190