



# **BRITISH WHITE CATTLE ASSOCIATION OF AMERICA**

**Telephone: 218-568-7003**

*Jonathan Wiechmann*  
President  
605-788-2983

*Sue Seep, Exec Sec*  
[www.britishwhite.org](http://www.britishwhite.org)  
e-mail [Office@britishwhite.org](mailto:Office@britishwhite.org)

Red point issues to be addressed at BOD Meeting Sept. 11, 2020

This is written as a result of questions about changing the handling of coloring by the Association from a few members.

At this time, the color of a registered animal is listed on their registration certificate. The color options are S – standard marked, SR – standard red, O – overmarked, and U – undermarked. Examples of these colors are shown in picture form in the Breeders Guide, Rules and Regulations booklet. The color is designated by the breeder of that animal. Using an Application for Registration form, the breeder will fill out the sire, dam, name, tattoo, date of birth, birth weight, service, calving ease, weaning date, weight and height, color, sex, etc.

Also on the registration certificate of an animal is the pedigree of that animal going back 3 generations. The information listed for each animal on that pedigree is their name and registration number. This information is generated by our custom designed software.

I was asked via email as well as social media to add the coloring of each animal listed on a pedigree so that people could see what their coloring was. There was quite a long conversation about what our software was able to do as well as the purpose of having the color listed in addition to the name and registration number of each animal listed in a pedigree. I offered some suggestions that may help, for example adding the letters SR on the end of a name. For example, naming your bull Thistle Hill Big Red Bob SR. That name would appear in any pedigree and anyone could plainly see that animal was red pointed. That option would only be available to the owner of that specific animal since the Association does not change names of animals, only the breeder does.

The reason, as I understood it, was to breed for color and if the color was listed on a pedigree, a breeder could find animals that were red pointed and could breed for that more successfully. Since the members that were involved in the conversation said that obviously, if an animal was red pointed, that would be what they were looking for in order to breed for color. That reasoning prompted me to do more research on if one would be able to breed for color. Since I am a breeder in addition to having access to the herdbook and all of the registered animals of the Association, I know that the red point color seems to appear very rarely and does not seem to follow any pattern with regards to genetics. I have had several red pointed cattle born over the years. I have never had any born from the same pairings and the color seemed to appear randomly.

I did an analysis of the animals in our herd book that were red pointed, as well as how many animals that were red pointed came from either a red pointed sire or dam. I did this May 5<sup>th</sup>, 2020. At that time there were 19,648 registered animals in the herd book. Out of that number of animals, 164 were red pointed which is .8346%. Out of 19,648 there were 16 animals that had one parent that were also red pointed, which is .008346%. At that time, there were no red pointed cattle that were bred to red pointed cattle that produced a red pointed offspring. Obviously, being red pointed is very rare and at this point does not appear to be easily bred for.

I also contacted UC Davis Lab, which does our DNA testing for the Association to get more information with regards to genotypes associated with color. I have attached a printout from them that addresses black and red coloring. They actually offer a DNA test for those color genotypes. The cost for that would be the normal \$35.00

There are three Alleles: ED=Dominant Black, E+=Wild type, e=Recessive Red  
The order of dominance is ED>E+>e, which means Dominant Black is dominant over the Wild type, which is dominant over the Recessive Red.  
Results of the coloration are jet black, reddish brown to browning black, or red.

#### **Explanation of Results:**

- Cattle with **ED/ED** genotype will have a jet black base color and cannot produce red offspring. They will transmit this dominant black variant to all of their offspring.
- Cattle with **ED/E+** genotype will have a jet black base color and are carriers of the wild type variant. They will transmit this wild type variant to 50% of their offspring. Matings between two wild type carriers result in a 25% chance of producing a calf with wild type base coloration.
- Cattle with **ED/e** genotype will have a jet black base color and are carriers of the recessive red variant. They will transmit this recessive red variant to 50% of their offspring. Matings between two recessive red carriers result in a 25% chance of producing a calf with recessive red base coloration.
- Cattle with **E+/E+** genotype will have wild type base coloration (reddish brown to brownish black base coloration). They will transmit this wild type variant to all of their offspring.
- Cattle with **E+/e** genotype will have wild type base coloration (reddish brown to brownish black base coloration) and are carriers of the recessive red variant. They will transmit this recessive red variant to 50% of their offspring. Matings between two recessive red carriers result in a 25% chance of producing a calf with recessive red base coloration.
- Cattle with **e/e** genotype will have red base coloration. They will transmit this recessive red variant to all of their offspring. All calves produced from matings with other e/e genotype cattle will have recessive red base coloration.

As you can see, if one were to have a high expectation of success in breeding for the red color, it would be advisable to have this DNA test performed rather than just using a red pointed animal for breeding. And, if a breeder were to promote an animal as being a producer of red pointed offspring, i.e. breeding for color, it would be a responsible action to be able to prove that by a DNA test for the e/e genotype.

The Association would be able to add a one or two letter extension to the animals listed on the pedigree by changing our software, but that would have to be all colors, not just SR – standard red. If the Association were to do that, I feel there could be some negative results.

First of all, by doing that, the Association would be implying that breeding for color was something that would be an option. People that have been breeders over the years know that there are a certain number of cattle born each year that are not perfectly marked. When the breed is a two color coated animal, those two colors can occur in various degrees that do not match their sire or dam. For example, identical twins can be born, one with standard markings and one with over or under markings. This could not possibly happen if a consistent color PATTERN were a genetically transmitted trait. We have all had a situation where, even breeding the same sire to the same dam for more than one year, the offspring will not have the same exact markings.

Similarly, if a breeder had a totally perfectly marked animal for sale or use for A.I. and upon looking over that animal's pedigree, there was one animal that was overmarked or undermarked, buyers may judge that animal less favorably because they may assume that those marking would show up in calves and make them less marketable.

I would hope that breeders would select their breeding stock by traits like confirmation, fertility, temperament rather than their coloring. But coloring does seem to be an issue even though the Association registers cattle no matter how they are colored. I would hate to have the Association, through a change like the one being discussed, make that situation more confusing or make our Breeders less profitable.

#### CONCLUSION:

I do not feel that making a change to put the coloring of animals visible on the pedigree would, on any level, be helpful to our membership. I would hope that the Association would decline to change any of the current procedures with regard to each Breeder designating the color of their animal during the registration application process and continue to show the color of each animal on their registration certificate.

If a breeder were to breed for red pointed cattle, there is a tool to do so using DNA testing to find the e/e genotype which would be able to actually produce red points. Although it is very rare, should a breeder accomplish this, they could use the name of that animal to designate it a red point producer. For example, they could change the registered name of Thistle Hill Big Red Bob to Thistle Hill Big Red Bob e/e once his genotype was established using DNA.