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July 2017 Newsletter

5-Panel Testing

One thing that has gained a lot of interest lately is the concept of 5-panel testing in Quarter Horses. However, a lot of people don't understand what 5-panel testing is. The other thing that people don't realize is that more breeds than just Quarter Horses can be affected by many of genetic problems that are tested for with the 5-panel. The 5-panel test is a service offered through AQHA that tests for the 5 most common genetic diseases that affect Quarter Horses. These diseases include HYPP, PSSM, GBED, MH, and HERDA. While HYPP and MH are diseases specific to Quarter Horses, other breeds like drafts, paints, and warmbloods can be affected by some of the other diseases, so it's important to know what the most common genetic diseases of horses are, especially when you are considering breeding your animals.

Hyperkalemic Periodic Paralysis (HYPP)

Traced back to a specific halter stallion named Impressive, HYPP is a genetic mutation that alters sodium channels within a horse's skeletal muscles. This causes the muscle to be in a state of depolarization, which then causes an increase in potassium in the blood. Any horse that inherits this gene will have the potential to show this disease, even if they've never shown it before because it is a dominant trait. What most owners may notice is muscle tremors or weakness, which can eventually progress to complete paralysis depending on the horse. Horses that inherit the trait from BOTH parents are usually euthanized shortly after birth due to not being able to breathe.

Polysaccharide Storage Myopathy (PSSM)

This is the disease that is most commonly associated with "tying up." This specific genetic disorder can be seen in Quarter Horses and drafts and as many as 20 other breeds. It is caused by a dominant mutation that affects the storage of glycogen (the substance broken down to make energy in the muscle) in skeletal muscle. Horses wind up storing more glycogen in their muscles than healthy horses. These horses will develop episodes of painful contraction of muscles, most often after light exercise. Horses that inherit the trait from BOTH parents are usually euthanized shortly after birth due to the progressive inability to move.

Glycogen Branching Enzyme Deficiency (GBED)

Most commonly seen in Quarter Horses and Paints, this recessive genetic trait causes the inability to store glycogen normally in heart and skeletal muscle. In order to be stored in the muscle, glycogen needs to be made into big branching chains in order to have enough to feed the muscles. Without the enzyme, horses can't store enough glycogen effectively in the muscle. Affected horses die

shortly after birth because they are unable to store enough glycogen to feed the muscle, including the heart.

Malignant Hyperthermia (MH)

Uncommonly seen, but still present in some Quarter Horses, this dominant mutation causes sudden death in horses undergoing anesthesia. It causes severe increases in muscle temperature due to excessive muscle rigidity and an increase in body acidity when the horse is under general anesthesia. Some horses may even have MH and PSSM together, which can cause more severe signs of PSSM.

Hereditary Equine Regional Dermal Asthenia (HERDA)

Seen in Quarter Horses, Paints, and Appaloosas, this recessive genetic disorder is caused by a defect in their collagen fibers that hold the skin together. It is especially seen in these breeds when they are descended from prominent cutting horse lines. Horses affected by this disease have trouble healing after an injury. What owners notice most is when the horse is broken to saddle, the areas where the saddle sits develop blisters, and the skin is easily torn or stretched. Once the skin heals in this area, there are very unsightly scars where there normally wouldn't be one.

The 5-panel test is specifically offered through AQHA, and can be obtained by logging onto your aqha.com account and looking for genetic testing under "Ownership." If you own a non-quarter horse but suspect your horse may be affected by one of these diseases, other labs offer the tests. PSSM testing is done at the University of Minnesota and involves a few hairs from the mane, and UC Davis offers a genetic test for HERDA. There are other labs that may offer genetic testing, but universities and national labs are always your best bet.

Castration Signs: July 10 thru 14th (If it's not too HOT!!!)

July 4th Celebrations

Lake Texoma – 7/3/17 --Start: Dark -- Roosevelt Bridge

Denison – 7/4/17 –Munson Stadium Denison

Lake Bonham – 7/4/17 – Start: Dusk