

Brisket and PAP: All PAP Tests Are Not Created Equal

Know the elevation of the PAP test to evaluate results

Brisket disease affects cattle at higher elevations by over-stressing their heart and lungs, leading to respiratory and even heart failure. The higher the elevation at which cattle have to live, the more stress is placed on their cardio-pulmonary system. The classic sign of brisket disease is swelling of the brisket due to pulmonary edema or fluid build up in the folds of the extra skin in the chest area. Brisket disease often leads to death, but symptoms also include repeated instance of pneumonia and just generally poor-doing cattle.

Pulmonary Arterial Pressure (PAP) is a measure of how susceptible to brisket disease an animal may be. Cattle with lower PAP are less likely to get brisket. The disease is strongly correlated genetically, meaning that selecting for low PAP in your cows and bulls can reduce the risk in your herd or calf crop.

Testing for PAP is not simple. The procedure involves putting a catheter into the left ventricle of the heart, and it has to be performed by a qualified veterinarian. The test gives each animal a score, measured in millimeters of mercury, just like a human blood pressure test. Very low scores would be in the 30s, and very high ones in the 80s or even higher. The lower the score, the lower the PAP of the animal, and the less risk that it will develop or pass on brisket disease.

PAP testing is the best tool available for predicting high altitude performance, but it isn't foolproof. There are many factors that affect a PAP score, including the age of the animal, the elevation at which the test was conducted, how long the cattle were at that elevation prior to the test, the health history of the animal, the stress level of the cattle the day of the test, their specific genetics, their feed, and even the weather the day of the test. That's why a single score can sometimes be misleading, and all PAP scores should be used as guidelines for selecting low risk cattle.

Unfortunately, people tend to take the PAP score as an absolute value. If a calf has a score below say 45, they think that is acceptable, without paying too much attention to the details, especially to the elevation at which the test was conducted. PAP testing at lower elevations generally tends to produce lower scores. Of course, the best thing would be to test cattle at the elevation they were going to be used, but that's not typically practical.

For that reason, we have developed a set of guidelines for our cattle, which were tested for PAP at 7,100 feet.

Score 46 – 50	Use at 6,500 ft or lower
Score 41 – 45	Use at 8,000 ft or lower
Score 40 or lower	Use at any elevation

Remember, these guidelines are useful for Coyote Creek Angus cattle, or cattle that were tested at or around 7,100 feet. If you're trying to compare PAP scores with cattle tested at a different elevation, you'll have to account for that difference, realizing that the lower the elevation of the test, the harder it is to predict performance at very high elevations. And like all cattle traits, a dose of common sense should be applied when using PAP scores to select cattle.