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Genetic Condition Testing

ASA now offers an easy, straightforward way to track genetic conditions in your herd through TraitTrac! Simply search for the animal in Herdbook using their ASA registration number, then select "Genetic Detail" in the "Reports" box below the pedigree to view which conditions an animal may be at risk for based on their pedigree. ASA tracks for seven conditions by pedigree (NH, AM, CA, PHA, TH, DD, and OS), all of which have the potential to place an animal on genetic hold (GH) if they are deemed a population risk. In addition to the genetic conditions reporting, TraitTrac also reports testing and risk for the horned/polled/scurred gene, red gene, diluter, and more!

ASA requires all sires and donor dams be tested for genetic conditions. If a sire or donor dam contains one-eighth of a suspect breed population (e.g., Angus is automatically tracked for NH, AM, and CA) and is designated a population risk or carrier, that animal must be tested for all flagged conditions listed in TraitTrac. Regardless of the results of the testing, the animal's record will be updated after testing, progeny will be eligible for registration, and certificates will be issued.

For any natural calf (not an embryo) placed on a genetic hold, the condition risk is always tracked from the sire's side. ASA recommends genetic condition testing as far back on the sire's pedigree as possible — this not only potentially clears the calf placed on a genetic hold, but can clear generations before it as well. For any embryo transfer (ET), both the sire and donor dam must be tested for any tracked conditions.

Genetic Holds and How to Move Forward

When an animal is placed on a genetic hold (GH), ASA will not issue/release registration certificates, allow transfers, or update performance data. To remove the hold, members must meet one of two conditions:

- 1.) If the sire and/or donor dam is registered with another breed association, the member can request the test results on the parent(s) carrying the genetic condition(s) be sent to ASA. GH will be automatically removed upon completion of condition testing, or proof from another breed association of testing to clear the pedigree. *Every breed association is slightly different in how they report animals that are carriers or documented free from conditions. The DNA team may need to reach out to the respective association for clarification before any updates are made.*
- 2.) If DNA is not available on the sire and/or donor dam that is tracked for the genetic conditions, each progeny must be tested before registration certificates and [EPD](#) are released.

What Options Are Available for Genetic Testing?

ASA offers two distinct options for genetic condition testing based on the number of conditions an animal is at risk for.

1. Stand-alone testing: \$25/condition. Members can submit a sample for one or more individual genetic conditions.

2. Add-On Condition Panel: GGP-100K Panel (\$50) + \$25 for all seven conditions (NH, AM, CA, PHA, TH, DD, and OS). Members can submit a sample for a 100K panel with the option to add on the Genetic Conditions Panel (all seven conditions) for the same price as a stand-alone test. If an animal is at risk for three or more conditions, this option is the most cost effective, even if you don't necessarily need all seven conditions tested. This option is ONLY available in conjunction with the GGP-100K panel.

Members can also submit official genetic conditions test results from accredited genotyping laboratories. ASA will honor those results and update Herdbook accordingly.

Interpreting Results

All the traits and conditions tracked under ASA's TraitTrac reporting are recessive. This simply means that an animal must inherit two copies of the mutation, one from the sire and one from the dam (i.e., in order to have a calf express the condition, both parents must be carriers). While genetic holds and condition tracking can be inconvenient and frustrating, the technology we use today helps prevent offspring with population risk conditions — or worse, lethal mutations. The testing results you may see are as follows:

Tested Free (TF) – This animal does not carry the genetic condition and will *not* pass the condition on to their offspring.

Tested Carrier (TC) – Animal has one copy of the genetic mutation and one copy of the normal gene. Half of their progeny will inherit the genetic condition gene. For recessive conditions, an animal needs two copies of the gene to display the phenotype.

Tested Homozygous Carrier (HC) – Extremely rare with genetic conditions, this result is much more common with traits like horned/polled. A homozygous carrier means the animal carries two copies of the genetic condition mutation. Homozygous carriers are possible in non-lethal conditions like Developmental Duplication (DD) or Contractural Arachnodactyly (CA); however, homozygous carriers will always pass on the mutation to their offspring.

**If you think you have a calf that is expressing a genetic condition, please contact ASA.*

My sire or donor dam just tested as a carrier for a genetic condition...now what?

This is not a dead end! It's not uncommon for an animal to come back as a tested carrier for a condition. This simply means the pressure is off the carrier parent for testing, but all subsequent progeny will need to be tested since they now run a proven risk of being a carrier.