

MEMBERSHIP TIPS

by Jerry Cassady
director of member services



Registration symbols

The American Angus Association has utilized different symbols preceding the registration number to denote different attributes about the animal.

The Member Services department receives questions from time to time about these symbols and what they mean. Some animals in our registry show more than one symbol, and some do not show any.

Let's define and clarify each of the current symbols used in the registration process.

Parentage Qualified Indicator*

One of the newer additions to the pedigree is the parentage indicator symbol, which was initiated in 2017. If the individual animal is qualified (matched) to both parents through DNA testing, the words "Parent Qualified" are displayed just above the Breeder/Owner sections.

This means the animal has a qualifying match to both the sire and dam as well as the mating of the two. A * symbol will appear before the registration number where applicable as well as throughout the pedigree where an animal in the pedigree has met this qualification.

The process of using genetic markers or SNPs (single nucleotide polymorphisms, pronounced "snips"), for parentage testing is known as parentage verification and is based on the fact that each animal receives one copy of each gene, called an allele, from each parent. We genotype animals to determine what markers

they have inherited, and then compare them to potential parents to determine if those markers are consistent with the individual in question.

In the simplest terms, we use the genetic markers to exclude animals as a possible parent, leaving those remaining (hopefully only one remains) as the most likely parent for that offspring. If the potential parent shares the same markers, then that parent qualifies. If not, that animal is excluded as a possible parent.

Pathfinder

One of the oldest, most-recognized symbols included on Angus registrations is the Pathfinder® # symbol. The Pathfinder program was started in 1978 to identify superior cows based on their records of performance from Angus Herd Improvement Records (AHIR®).

To identify these superior cows, emphasis was placed on early puberty, breeding and early calving, followed by regularity of calving and above-average weaning performance of the subsequent offspring.

The Pathfinder Report requires a minimum of three calves from a cow to determine her regularity of calving and ability to produce superior calves for weaning weight year after year. Once a cow is designated a

Pathfinder, she is always a Pathfinder, even though she might not qualify to make the list each year. An important part of the report is the list of bulls that are recognized as Pathfinder sires. To qualify, the bull must have sired five or more qualifying females in the same year.

Embryo Transfer ET +

Dating back to 1977, the embryo transfer (ET) symbol + was the first symbol utilized by the Association indicating the animal was the result of embryo transplant.

This long-established practice of removing embryos from superior donor females and placing them in surrogate recipient dams has allowed for rapid genetic progress. Currently, the Association reports roughly 13% of annual registrations are the result of ET.

Split ET %

Split ET was implemented in 1992 to decipher those embryos that divided naturally or intentionally during the transfer process. The natural division of a transferred embryo is easy to detect, as the result is identical twins from one implanted embryo. Some breeders intentionally force the division at just the right time to double the number of offspring. However, this practice

is not without risk of lower embryo survivability and reduced conception rates. By using the % symbol, one can see the intended embryo being divided into two.

Cell Clone ^

A clone is a genetic copy of an animal, like identical twins, but born at different times. Cloning can be thought of as an extension of reproductive technologies that breeders have been using for centuries, such as artificial insemination (AI), and more recently, ET and *in vitro* fertilization (IVF).

Clones may allow breeders to upgrade the quality of their herds by providing more copies of their best animals. Although the cloning

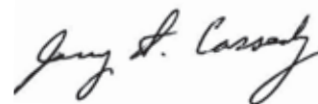
process is expensive and cost prohibitive to most, the Association does receive and accommodate these applications. These are designated by the ^ symbol.

Clone ET @

Repeated cycles (multiple generations) of DNA transfer procedures have the potential of producing many identical offspring from the micromanipulation of a single bovine embryo.

The clone ET symbol @ is included in this list to identify those embryos that were cloned to propagate the specific line of genetics. [AJ]

Symbol	Definition	Total Animal Count
#	Pathfinder	129,423
+	ET	941,790
^	Cell Clone	169
@	Clone ET	130
%	Split ET	430
*	Parentage	597,621



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Editor's note: For more information regarding the symbols found on registrations, contact the Member Services department at (816) 383-5100 or email me directly at jcassady@angus.org.



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