

GAIT IS MADE IN THE BREEDING SHED

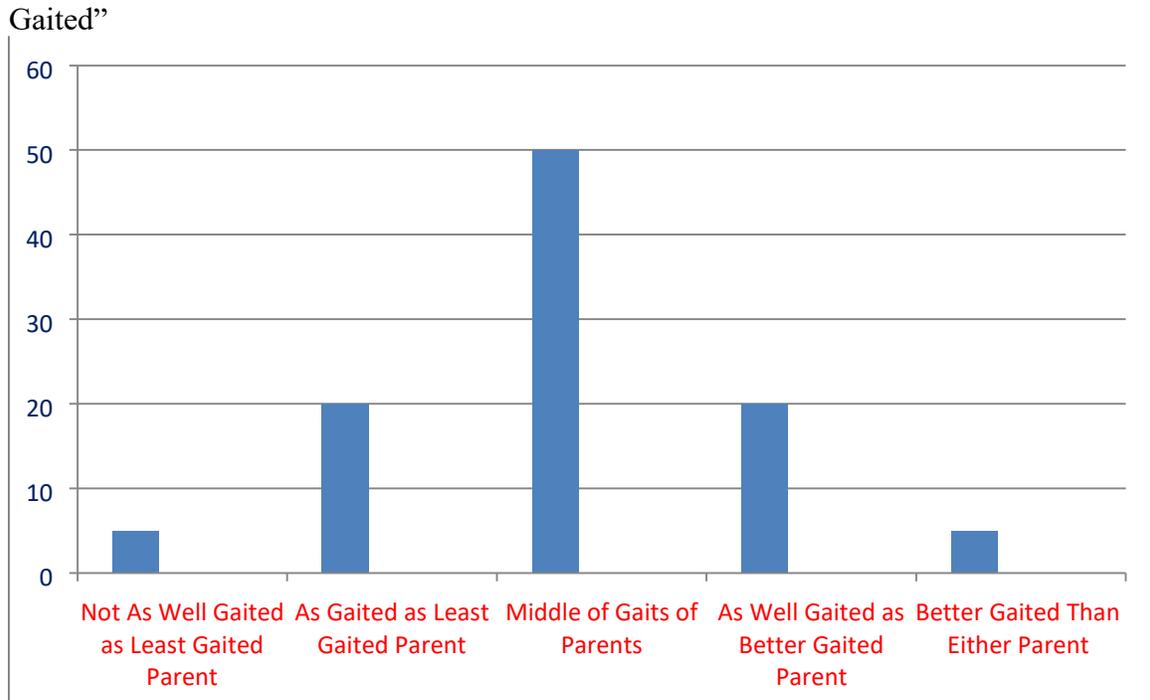
BREED SPOTLIGHT

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Gaited On Line Magazine article

Do you remember the days as a youth when someone was telling you how to do something and you could have cared less? I had a few of those days, but fortunately for me people were patient and persistent teachers about horse breeding basics. These people had horses whose consistency of gait and conformation were like using a cookie cutter. My following comments are based on their breeding concepts and used in our breeding program.



The expected results of breeding gaited to gaited parents is shown below in the chart extracted from the article [Breeding Gaited to non Gaited versus Gaited to Gaited](https://gaitedmorgans.com/wp-content/uploads/2019/10/Breeding-Gaited-to-Gaited-Versus-Gaited-to-non-Gaited.pdf)
<https://gaitedmorgans.com/wp-content/uploads/2019/10/Breeding-Gaited-to-Gaited-Versus-Gaited-to-non-Gaited.pdf>



The chart displays the percentage/odds of getting different levels of gaiting ability based on two gaited parents. The five percent in the chart’s right column of producing better gait than either parent was the goal of their breeding programs. The breeding technique used by these farms also increased the odds of getting intermediate even four beat gaited horses.

How did these breeders improve their odds of getting those top five percent? The following was their simple technique. They sought to combine those horses which broke to the trot or pace after reaching their fastest speed in their normal gaits. Key was keeping horses from going from their fastest gait speed to the canter, but instead verify whether the trot or pace was their default gait to go faster. If you had a horse breaking to the pace then this horse would be bred to a horse which broke to the trot.

The breeders who just bred gaited horses and did not know the default gaits might end up with two other possibilities. These breeders might be breeding two horses which both broke to the pace. The offspring of these horses had a tendency to do the stepping pace or pace. If the horses combined were trotters, then you were likely to get a trotting horse or one which might be weak gaited and had a gaiting tendency. If the goal was to have an offspring with the five percent chance of being better than either parent and did an intermediate four beat gait, then the objective would be to breed the pace to trot horse.



The simplicity of this breeding concept is seen in the following Mendel's chart of possible combinations.

Gaits	Trot (T)	Pace (P)
Trot (T)	TT	TP
Pace (P)	TP	PP

Even though several decades have elapsed since these breeders used this simplistic process. There are still no proven scientific studies showing whether gait is produced by a gene or genes, conformation and genes or copied actions from other horses or maybe taught by humans.

NOTE: This article was written in January 2012, but in December 2012 there was a test released to check DMRT3. It explains why some horses only trot while others are able to perform varied gaits. It is explained in the following article:

<http://www.equinews.com/article/genetic-basis-gait-variation-uncovered-horses>

Capilets Corporation of Sweden developed the **SynchoGait Gene Test** offered by UC Davis. The DNA test will ID the horse's gait genes as one of the following three. Homozygous A/A --- the horse will perform ambling and lateral gaits. Heterozygous A/C --- the horse will perform lateral gaits. C/C – the horse will walk, trot and canter.

AA x AA = 100% of the offspring will be AA

CA x AA = 50% will be AA and 50% will be CA

CA x CA = 25% will be AA, 50% will be CA, 25% will be CC

CA x CC = 50% will be CC and 50% will be CA

AA x CC = 100% will be CA

CC x CC = 100% will be CC

DNA results will be incorporated in our breed program. Goal is to only breed AA to AA, to insure strongly gaited Homozygous offspring. There are those which will hesitate to use this new science based on the test currently at \$350 per horse and those who think they know gait when they see it. Time has shown at least in the Gaited Morgans the breeding of gaited to gaited does not necessarily guarantee gaited offspring. With the parents DNA test results it should help in determining the odds of breeding the various combination of AA and CA horses as shown in the above table.



The photos intermingled in this article are of foals around three days old which were bred on our farm using the trot/pace concept. They are from three different stallions and three different mares. NOTE: More foals have arrived since 2012 with the same results. The goal was to breed foals which would do the saddle rack (some call it the saddle gait), running walk or rack and showed Morgan temperament and conformation. All got up gaiting and have only got stronger with age/maturity. Incorporation of DNA results with the trot/pace concept to produce the desired even four beat gaits will be explored over the next breedings.