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## Browsing Academy

# AN UNDERSTANDING OF GOAT BREEDING

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An important question that needs to be addressed before getting into the goat business, purchasing goats or constructing facilities (fences, shelters) is “What is the best breed available to attain my production goals and objectives?” This is crucial as it will determine the direction of your genetic selection (meat, fibre and/or dairy breeds) and justify changes in the breeding program. The next step is to determine the movement of improved genetics toward goats that are “better” than the average goat today. Design a purpose directed breeding program so your customers obtain the best animal to produce profitability or ‘end-consumer’ satisfaction.

### *Factors Affecting Rate of Improvement from Selection*

- **Heritability** – A measure of strength of the relationship between breeding values (value of an individual as a genetic parent) and phenotypic values (measured level of performance for a trait in an individual) for a trait in a population.
- **Repeatability** – A measure of the strength (consistency, reliability) of the relationship between repeated records (repeated phenotypic values) for a trait in a population.
- **Selection differential** - The difference between the mean performance of the individuals selected to be parents and the average performance of all potential parents for the selected trait.
- **Genetic correlation** – A measure of the strength (consistency, reliability) of the relationship between breeding values for one trait and breeding values for another trait.
- **Generation interval** – The amount of time necessary or required to replace one generation with the next.
- **Number and specificity** (interactions) of traits selected
- **Accuracy of production and progeny records** and accuracy of selection
- **Age at selection** and selection intensity
- **Caliber of sires** used in breeding program minimizing genetic variation
- **Environmental effect(s)** – identify external factors impacting goat performance
- **Management capabilities** of individuals involved in unbiased decision making
- **Nutritional plane maintained** for production phase requirements