

Accuracy: the reliability of an EPD. Accuracy may be reported as a number ranging from 0.0 to 1.0, with 1.0 being the most reliable. It can also be reported as “P” or “P+”, where “P” designates that only the animal’s pedigree has been used to calculate the animal’s EPD, whereas “P+” means that the animal’s pedigree and actual performance has been used. The more data used in calculating an EPD, the higher the accuracy value

Adjusted Weaning Weight: Weight adjusted to 205 days of age and for age of dam

Adjusted Weight: a weight that has been mathematically calculated to reflect what an animal’s weight would have been if the animal was raised under a standard set of conditions and measured at a given age

Animal Model: the model currently used for calculating EPDs in the Paco-Vicuña breed. It takes into consideration all known information on an animal, such as performance, the EPDs of close relatives, and the performance of the individual’s progeny

Artificial Insemination (AI): the process of collecting sperm cells from a male animal and artificially depositing them into the reproductive tract of a female. AI allows the germplasm from species of superior quality to be effectively utilized

Average Daily Gain: the measurement of daily change in an animal’s body weight

Balance & Topline (*ideal trait characteristics from breed standard*): Proper proportions demonstrated in slightly longer neck and legs relative to body length. Length is the same as height, with a slightly rounded topline from withers to the hip, rounding at the croup.

Birth Group: all animals born within a 90-day period. All animals within a contemporary group are of the same birth group

Body Condition: degree of fatness or fleshiness of an animal

Breeding Value: The genetic value of an animal for a performance trait. Half of an animal’s breeding value is derived from each parent.

Camelid: any of a family (Camelidae) of even-toed, ruminant mammals having a 3-chambered stomach and including the camel, llama, guanaco, alpaca, and vicuña

Carrier: a heterozygous individual having one dominant gene and one recessive gene for a given gene pair. In the case of a simple recessive trait, carriers may not show outward signs of the recessive trait but, when mated to one another, will produce on average 25 percent affected offspring.

Cellulose: fibrous constituent of plants that is made available for digestion by the ruminant by micro-organisms within the rumen

Chromosome: molecules of DNA that carry the genetic coding for animals

Conception: the moment an egg cell is fertilized by a sperm cell

Conformation (*from breed standard*):

Contemporary Group: refers to all animals of the same sex and percentage Paco-Vicuña, that were born within a span of 90 days, managed under similar conditions, and weighed on the same day. Comparisons among animals of the same contemporary group are used in processing performance data and calculating expected progeny differences.

Correlation: A measure of how two traits vary with one another. Correlations range between +1.0 and -1.0. A positive correlation indicates that as one trait increases in value, so too does the other trait. A negative correlation, likewise, indicates that as one trait increases in value, so too does the other trait decrease. The strength of the relationship is evidenced by how closely the correlation coefficient approaches +1.0 or -1.0.

Creep Feed: supplemental feed given to nursing crias to promote proper health, growth, and digestive tract development

Cria: a baby llama, alpaca, vicuña, paco-vicuña, or guanaco

Cria Crop: all crias born in a herd for a particular cria season

Cryptorchid: when one or both testes of a male (often infertile) fail to descend from the body cavity into the scrotum

Culling: the process of eliminating a less productive or less desirable animal from the herd

Dam: the female parent of an animal

Dam Summary: a form available from the Association which lists the current EPDs available on a dam, the performance record of her progeny, the average ratios, and weights of her progeny, and her MPPA

Dominant: a gene that, when present, fully or partially masks the appearance of a recessive gene. For simple recessive traits, the recessive cannot be detected in the presence of a dominant

Donor Dam: a female that is super-ovulated and bred to a superior sire in order to produce a number of eggs for embryo transfer

Dystocia: term referring to difficulties experienced during birthing. Dystocia is most commonly the result of an unfavorable relationship between cria size and pelvic area

Embryo Transfer: also called embryo transplant

- the final procedure of the in vitro fertilization process that involves transfer of one or more embryos into the uterine cavity typically by using a catheter inserted through the uterine cervix
- a procedure used in animal breeding in which an embryo from a super-ovulated female is removed and reimplanted in the uterus of another female

Expected Progeny Difference (EPD): the predicted performance of an animal's progeny in relation to the breed's average performance in a trait for a defined (base) year. EPDs can be used to compare the genetic merit of animals or matings.

F1: term referring to the first-generation progeny of a mating or mating system

Fault: non-lethal abnormality found in an animal

Fetus: the developing unborn cria from the 30th day of pregnancy to birth

Fiber Structure & Phenotype (*ideal trait characteristics from breed standard – Crimp, Crinkle, and Brightness*): The fleece exhibits extreme density equal to that of a pelt, holding together after shearing. Neck wool is equal to more often shorter than prime blanket, and exhibits extreme density. Leg wool is absent to minimal in appearance. There is an absence of belly wool. PV fiber has superior natural brightness, the fleece exhibits crinkle rather than a highly organized crimp, and has great uniformity in micron. Staple length is from 1.5 to 3 inches growth per year between ages 1 to 4 years at a minimum. Density is extreme to the point of showing no discernible lock structure but more so an interlocking of all fibers from the crinkle. PV fiber tests for a higher curvature than alpaca, most often valuations greater than 55 degrees. Optimum is curvature in the 70's to 90's.

First Owner: the member owning the dam at the time she gave birth to the animal to be recorded. An animal may only be registered by its first owner or the lessee of the dam to which it was born

Flushing: term referring to the harvesting of live embryos from the reproductive tract of a dam with the intention of transplanting those embryos to another dam for the remainder of gestation.

Gait (*ideal trait characteristics from breed standard*): Movement demonstrates a fluid gait and balanced stride, with both toes pointed forward or slightly outward and tracking evenly in a straight line on upright pasterns.

Gene: the basic unit of heredity found on chromosomes. Genes occur in pairs and interact with one another to produce the phenotypic expression of the specific trait for which they code.

Generation Interval: average age of the parents when the offspring destined to replace them are born. A generation interval represents the average rate of turnover of the herd.

Genetic Evaluation: a summary of all the performance data of all the animals in a breed for the purpose of comparing animals within that breed

Genotype: the genetic make-up of an animal

Gestation: period of pregnancy from conception to birth. The average gestation length in Paco-Vicuña is 345 days.

Half-Sibs: individuals that share the same sire or dam

Head & Topknot (*ideal trait characteristics from breed standard*): Absent to minimal top knot. Refined head tapering to a narrow nose/muzzle. Ears erect, spear-shaped and of appropriate length, set slightly forward and absent of extra fiber. Large, round eyes clear and bright, free from congenital anomalies. Nasal passages symmetrical. Incisors meet the forward edge of the upper dental pad and the mandible and maxilla are vertically aligned.

Herd Inventory: an itemized listing of the animals in a farmer's herd

Heritability: the portion of an expressed trait that is due to an animal's genetic make-up (genotype) rather than environment

Heritability Estimate: an estimate of heritability expressed in units from 0.0 to 1.0. The higher the heritability value, the higher the portion of the expressed trait is due to genetics. For example, coat color carries a heritability of 1.0.

Heterosis (Hybrid Vigor): the increased performance or superior qualities resulting from the crossing of two breeds

Heterozygous: when genes of a specific pair are different in an individual

Homozygous: when genes of a specific pair are alike in an individual

Hypertrophy: the enlargement of an organ or tissue from the increase in size of its cells

Hyperplasia: growth due to an increase in cell numbers

Inbreeding: the mating of two closely related individuals in order to maintain certain traits of the parents in the resulting progeny

- *the mating of animals more closely related than the average relationship within the breed or population concerned. For example, mating closely related animals: parent and offspring, full brother and sister, or half brother and sister.*
- *inbreeding is the mating of individuals or organisms that are closely related through common ancestry, as opposed to outbreeding, which is the mating of unrelated organisms. Inbreeding is useful in the retention of desirable characteristics or the elimination of undesirable ones, but it often results in decreased vigor, size, and fertility of the offspring because of the combined effect of harmful genes that were recessive in both parents.*

Lactation: the secretion and let down of milk from the udder of nursing or milking dams

Line Breeding: a form of breeding program that is designed to maintain the inheritance of a certain desirable individual in the pedigree

Luster (*from breed standard*):

Management Codes: letter codes that refer to the means by which an animal or group of animals was managed from birth to weaning. The codes – which are used to assign animals to contemporary groups – are:

D = Dam only, no creep

F = Foster dam, no ratios

C = Dam with creep for 6 weeks or more

W = Raised without a dam

Mandible (*from breed standard*):

Maxilla (*from breed standard*):

Microbes: micro-organisms in the ruminant stomach that break down cellulose and other nutrients to produce volatile fatty acids for energy use by the animal. These microbes include bacteria, protozoa, and fungi.

Microchip: a chip containing a unique identifying number that is implanted into an animal

Milking Ability EPD: the weight of cria weaned that is attributed to the dam's milk. In males, milking ability EPD predicts the potential for that sire's daughters to wean heavy crias due to their ability to produce milk.

Most Probable Producing Ability (MPPA): an estimate of a dam's future productivity for a trait based on her past productivity. MPPAs are valid for comparison within a herd only.

Notification of Paperwork Delay: a pink letter sent to applicants with omissions or errors in their registration application. This letter must be signed and returned with a corrected/completed registration form.

Omasum (manyplies): compartment of the ruminant stomach responsible for water retention (*Also known as the bible, the fardel, the manyplies and the psalterium, is the third compartment of the stomach in ruminants. The omasum comes after the rumen and reticulum and before the abomasum.*)

Ovulation: the rupture of a mature follicle on the surface of the ovary resulting in the release of an egg (ovum).

Parent Verified: refers to animals that have had both parents identified by DNA testing. Parentage verification is performed on all animals registered.

Pedigree: a record of the ancestors of an animal.

Performance Data: the record of an individual animal for specific traits such as birth weight, weaning weight, yearling weight, etc.

Performance Record: a form available from the Association which lists the animal's individual performance, ratios, EPDs, and its pedigree

Phenotype: all of an animal's physical characteristics that may be influenced by both environment and genetics

Postpartum: after birthing

Post Weaning Average Daily Gain: the average daily gain of an animal between weaning and yearling weights

Prepotency: refers to the ability of an animal to transmit its own characteristics to its offspring

Progeny: the offspring of an animal

Progeny Testing: the evaluation of the genotype of an animal based on a study of its progeny

Prolapse: the expulsion of the uterus or rectum of an animal typically due to stress. Uterine prolapse is most common shortly after birthing.

Proven Sire: a sire who has a number of recorded progeny and whose EPDs have reached a high level of accuracy

Qualitative Trait: those traits for which there is a sharp distinction among phenotypes (e.g. coat color, sex)

Quantitative Trait: traits that do not have a clear distinction among phenotypes and can be measured in terms of units. (e.g. weaning weight, hip height, and average daily gain)

Ratio: numerical comparison of an animal's individual performance with that of their contemporaries. It is calculated by dividing the animal's performance by the average of its contemporary group and multiplying by 100.

Recessive: a gene that only appears phenotypically when paired with a like recessive gene

Recipient Dam: a dam implanted with a live embryo from a separate mating

Registration Form – Multiple: form designed for Paco-Vicuña breeders to register and report data on a group of animals at one time

Reference Sire: a sire designated to be used as a benchmark in progeny testing other sires. Progeny by reference sires in several herds enable comparisons to be made between sires not producing progeny in the same herd or herds.

Roughage: high fiber feed stuff such as hay or silage that maintains the health and integrity of the rumen

Rumen: the large first compartment of the stomach of a ruminant in which cellulose is broken down by the action of symbiotic microorganisms. The rumen makes it possible for animals to utilize grass whereas humans or pigs cannot.

Ruminant: an herbivorous, even-toed, hoofed mammal (suborder Ruminantia and Tylopoda) that has a complex 3- or 4-chambered stomach. Ruminants include cattle, sheep, deer, goats, giraffes, camels, and llamas.

Selection Differential: the difference between the average for a trait of the selected animal and the average of the group from which they were selected. As the selection differential for a trait increases, so too does the expected response to selection for that trait.

Single Trait Selection: the practice of selecting for maximum improvement in a single trait

Sire: the male parent of an animal

Total Digestible Nutrients (TDN): refers to the percentage of a feedstuff that is digestible

Transfer: process of transferring the registration papers of an animal from one owner to another

Variance: the variation seen in a trait

Weaning Group: all contemporaries weaned on the same date. A weaning group should not include animals older than 250 days or younger than 160 days.

Weight per Day of Age: the weight of an animal divided by its age

Yearling: cria approximately one year of age

Yearling Group: all contemporaries weighed on the same date. A yearling group should not include animals older than 450 days or younger than 330 days.