Important Related Documents

for the

KSAR Open Registry

1. Why Register
2. Color Genetics
3. Traditional Flocks
4. Judges Guide

While not directly related to the registration process these four Important Related Documents are provided to assist in your quest for information on Karakul sheep.

Why Register  A bit of motivation on registering your Karakuls—common-sense, down-to-earth reasons for the importance of breed certificates.

The next two are more scientifically-minded papers.

Color Genetics by Letty Klein presents in shepherd’s terms, an easier-to-understand genetic outline of what makes Karakul lambs the colors they are.

Traditional Flocks by Deborah Hunter presents an understanding of Karakul Bloodline development, followed by a short summary of the registration process for sheep from isolated, multi-sire managed flocks. Developed since 2015, this was the Alliance’s original policy paper; many parts were used in our new 2020 Registry Policy, now outlined by subject.

Judges Guide Standard is last for accessibility, and makes an easy tear-off document. Consider presenting to your judge before showing, as many could use a refresher on the composition of excellent Karakul sheep.

Thank you for supporting your Karakul Shepherds Alliance!
KARAKUL SHEPHERDS ALLIANCE ~ where the flocks gather

Why Register
and a bit on How

The foundation of the American Karakul is grounded in the lack of uniformity in the original Karakul importations, 1908 to 1929. Introductions of other breeds, followed by significant linebreeding for Persian lamb birth coat traits, have made American Karakul sheep unique in the world.

Following the fur industry collapse, remaining Karakul stock moved into types of Traditional Flock management systems. Some were totally self-contained, others brought in outside rams every few years. Many became long-term isolated flocks during this period of separation and re-purposing. Later, some flocks were defined as sub-populations that had been isolated from one another for several generations and had become more genetically distinct. Designated as a Bloodline, these unique flocks are usually named for the shepherd or farm in which they are, or were, located. (see Bloodlines page)

Traditional management systems have characterized Karakul breeding for centuries. Still practiced today, they are almost always defined by periods of multi-sire mating. Within these flocks the Alliance encourages true-to-type selective breeding for four Karakul traits that define the breed—Persian lamb birth coat, a broadtail, refined head, and a sloped-rump topline as described in the Breed Standard.

Even if sire and dam are unknown, Karakuls intended as breeding stock should be considered for registration so they may genetically contribute to the breed through the KSAR Flock book. For individual sheep, new to the Registry, a brief history of the originating flock is shared with the Registrar. The history is written and kept in Alliance records, including original sources of stock acquisition. Sheep should present the Karakul Standard of characteristics that is bolstered by records and oral histories of sheep trades. Through recorded registrations a history of ancestors will develop.

With enough known ancestors, registrations will contain pedigrees, a written history of the sheep’s background. Vigilant breeders will study these pedigrees when making breeding decisions, striving to carefully select the best Karakuls to reproduce specific qualities and characteristics suited to their operation and location. Over a period of time individual registrations with their photos capture the history of a flock, visually guiding breeders on evaluation of breeding goals.

By registering high-quality individuals, their genetics remain within the breed, reinforcing specific traits that could provide a lasting legacy to influence Karakul sheep for generations.

Other thoughts on the importance of registering

Why Registration Matters, Alison Martin, PhD, Livestock Conservancy News, Autumn 2013
https://livestockconservancy.org/index.php/heritage/internal/breed-registration

https://www.highlandcattleusa.org/content/Why%20Buy%20and%20Keep%20Registered%20Cattle.pdf

Another great read:

For additional information on Karakuls, please check online karakulshepherds.org

Authored by Alliance Advisors  August 2020
Color Genetics in the Karakul

aka ‘BASERS’

For years the Karakul breed was important in the production of lambskins of various colors for the fashion industry. Even though that industry is no longer vital in this country, the history and genetic understanding of the newborn coat color is complicated as well as fascinating.

Since the Karakul has a ‘fading’ gene, i.e. coat colors change quickly, phenotypic color assessment must be done early in life; the same time as the pelt assessment is a good time. Photos help record the color patterns.

All sheep have one of two Base (B) loci colors, either black or brown and can be determined in the color of the nose leather, eye-lids or stripes on the hooves or horns. In the Karakul, black (B¹) is dominant over brown (Bᵇ). The Agouti (A) Locus has several alleles that produce the many coat patterns found in our sheep. The white/tan allele (Aʷᵗ) is the most dominant and has the most symmetrical white. Then with decreasing amount of white symmetrical patterning (Aⁱ black & tan, Aᵍ gray, Aᵐ swiss marking, etc.) all the way to no-white at all, or self (Aˢ). The Spotting Locus (S), the wild Allele S⁺ results in a solid colored lamb, while Sˢ produces some white markings on the head/poll and tail tip with increasing white areas in the homozygous. The Extension Locus (E) has several alleles, the main ones are Dominant (Eᵈ) and Wild (E⁺). The Eᵈ locus blocks all expression from Agouti locus alleles, whereas the recessive E⁺ locus allows for the full expression of the Agouti locus alleles.

Two additional loci are important in the Karakul; they are the Sur and the Roan. In the Sur, wild Su⁺ is dominant with a solid birthcoat fiber color and Suˢ is recessive, the fiber has a pigmented base and a white or gold tip. The Roan Locus (Rn) can be rare, where a black based roan is called ‘shirazi’, while a brown based roan is a ‘gulgas’. The infamous ‘lethal gray’ (Rnᵐ) is lethal when both parents pass this allele on to the offspring (RnᵐRnᵐ), the rumen in the lamb is unable to
make the conversion of a milk-based diet to a fiber–based diet and dies at weaning.

There is evidence that the *Agouti* gray (*A*<sup>g</sup>) allele can influence the gray color in a roan even in the presence of the *E*<sup>d</sup> allele, resulting in a gray non-lethal lamb, *A*<sup>g</sup>*E*<sup>d</sup>Rn<sup>r</sup>

So the shorthand phenotypic notation of a solid black lamb would be *B*<sup>+</sup>*A*<sup>−</sup>*S*<sup>+</sup>*E*<sup>d</sup>; if the lamb had a white spot on its poll and a white tip on the tail it would be *B*<sup>+</sup>*A*<sup>−</sup>*S*<sup>+</sup>*S*<sup>−</sup>*E*<sup>d</sup>, where one parent was *S*<sup>+</sup> and the other *S*<sup>−</sup>. Since the *E*<sup>d</sup> masks the *Agouti* Locus we don’t know what lies beneath it, so we use the symbol *A*<sup>−</sup>; the *−* is used to show any unknown allele.
TRADITIONAL FLOCKS, Bloodlines, Registration

In December 1908 Karakuls were imported into the US for the Persian lamb fur market. These Karakuls were not a definite breed in the purebred sense, rather a sheep type, originating from isolated flocks in Central Asia. In 1951 over four decades later, a Breed Standard was presented through Lowry Hagerman’s The Karakul Handbook: Selecting and Breeding Karakuls for Fur Improvement[1] Just three years after publication the entire Persian lamb market collapsed. The Breed Standard was forgotten. Karakuls became isolated again; genetics were concentrated within regional areas resulting in variable physical appearances. Karakuls became locally adjusted sheep, developed over time through adaptation to their natural and cultural environments. Sometimes through breeder selection, although often not, as many were managed as Traditional Flocks—no maintenance of pedigree and frequently multi-sire mating. This is the definition of a landrace breed. [7,8] Three to four decades later most of these flocks were found and identified as Foundation or Historic bloodlines. Many individual sheep were registered from these flocks.

Traditional Flocks have been central in the development of US Karakul Bloodlines. After two more decades of isolation and breeder selection the Alliance has currently located “a dedicated core of breeders working solely with Foundation bloodlines. These [new] bloodlines tend to be free from much outside breeding, and can be among the most genetically distinctive animals of the breed.” [4] We are utilizing the Livestock Conservancy definition for a Bloodline “subpopulations that have been isolated from one another for several generations (usually four or more) with the consequence that they are somewhat genetically distinct”. From that, Alliance Advisors have chosen a minimum of five years of isolation or line-breeding generations to define a unique Karakul bloodline. Called Multi-Bloodline Composites or MBC, they fall into two types--Isolated and Line-bred. Isolated flocks are Closed having no outside genetic influences. Line-bred flocks are Open bringing in a new ram every few years; yet genetics are similar enough to continue selective breeding on a color or specific farm line.

Traditionally-managed isolated flocks continue to be found, where registration is not a component of their operations, and by shepherds who wish to remain private. KSAR’s continuing focus is to locate Karakul Traditional Flocks, in the US and Canada, some of which could be future validated Bloodlines for the breed (see website Bloodlines page). Shepherds who wish to work toward the goal of a Bloodline designation are advised to focus on isolation and/or line-breeding specific traits within their flocks for a minimum of five generations.

The staff of the Livestock Conservancy and Dr. Phil Sponenberg [3] have developed some guidelines for rescuing indigenous animal bloodlines and breeds. Together with their ideas and our own experience with the breed, we have developed procedures to define and evaluate breed-type, adaptable to include new Karakul sheep into the KSAR Open Registry. KSAR Advisors have established a protocol that assures the quality standard of Karakul breed type, as best as possible from a virtual inspection.

The unique combination of Central Asian characteristics make breed qualifying easier—the Persian lamb birth coat, a broadtail, refined ‘desert spirit’ head, and the unique sloped-rump topline. Sheep with all four traits are characterized as Karakul; no breed mis-identification is possible. Only Karakul sheep produce lustrous, patterned curls or smooth waves in newborn lambs; thus, the primary, perpetual focus on birth coats.

Karakul sheep are fundamentally independent, self-sufficient and low-maintenance. Flocks that remain reasonably isolated from others are typical of centuries-old Karakul shepherding systems. Called landrace [7,8] or traditionally managed, these flocks are almost always defined by periods of multi-sire mating. Within these flocks the Alliance encourages true-to-type selective breeding for the four Karakul traits that define the breed.

Even if sire and dam are unknown, Karakuls intended as breeding stock should be considered for registration so they may genetically contribute to the KSAR Flock book. If registration is desired, it is within this framework that KSAR is available as the transition point for individual Karakul sheep progressing from isolated farms, ranches, and desert ranges into the Karakul Registry.

Written by Deborah Hunter with Significant input from Alliance Authors who wish to remain anonymous

karakulshepherds.org Check Bloodlines and Registry pages for references
The Karakul Handbook, Hagerman, 1951, is available on the Books Plus page

October 2020
TRADITIONAL FLOCKS, Bloodlines, Registration

Registration applications for individual un-pedigreed Karakul sheep, of any age, will be reviewed by Alliance Advisors using the time-tested method of visual observation for breed character evaluation. See KSAR’s Registry Policy regarding requested photos. After evaluation and acceptance, the individual sheep will be assigned a KSAR registration number, and identified by the flock into which they were born. Their unregistered sires and dams will carry the original Source Farm/Flock and Location as first identifiers in the Registry.

Until breed-specific DNA testing is available, the following guidelines are endorsed and supported by Alliance Advisors:

1. Ideally isolated or line-bred Karakul flocks should not be raised with other breeds. However, if other breeds are kept, they must be noted and steps taken to avoid inadvertent cross-breeding.

2. Traditional Flock recognition is by location of breeder. Karakuls entering the Alliance Registry with one or both unregistered parents will have the sire and/or dam listed as Breeder Name/Farm and City, State as their sheep Name/ID, without the usual registration number. Ex: Anakus, Rice WA red 876 [eartag] is the registration number.

3. A brief history of the flock is important for verifying source bloodlines and will be kept on record—including original animal sources and approximate dates of acquisition. Ideally, history of Bloodlines flocks are updated annually; most importantly after additions—gender, source, and year noted (Flock Finder page).

4. If shepherds have grouped sheep to maintain different bloodlines, the bloodlines should be noted and tracked.

For the KSAR Open Registry, to be registered as a Karakul the four criteria are: 1) have a Persian lamb birth coat, or be able to produce offspring with birth coats, showing reasonable degree and coverage as defined by CLTPD below 2) have a broadtail 3) have a within Breed Standard-type head and 4) have the unique sloped-rump topline. Persian lamb birth coats must be proven in sheep from Unknown flocks (Section II D Registry Policy), or if a crossbreeding concern exists.

Basic standards: 1) Birth Coat—The Alliance has chosen five of the most important Persian lamb categories: CURLS, LUSTER, TEXTURE, PATTERN, DEVELOPMENT (CLTPD). To qualify, at least two of these must be represented; they do not have to be top-quality, but present. If a lamb fails to qualify due to lack of Persian lamb coat, or if an adult fails to produce progeny with acceptable birth coat qualities, the Alliance will recommend breeding to a Letter-quality rated Karakul, 3-Letters and above (CLTPD), and submitting registrations for those progenies in the future. The Alliance is seeking the best birth coat qualities to maintain as an American Karakul genetic resource. 2) Tails may vary considerably but they should always be of the broadtail type...fatty development confined to the upper part...the lower tail a slender appendage 3) refined Karakul head 4) sloped-rump topline as outlined in the Breed Standard.

About Landrace - Landrace is a term used to classify animals that have been raised or developed genetically isolated for fairly long periods of time. It is literally translated ‘country-breed’ from the German Landrasse. Geneticist Phillip Sponenberg of Virginia Tech University describes landrace creation”...when isolation, environmental pressures...and human selection plays a role, but for end goals (emphasis added), not as a result of careful selection.” Per the Livestock Conservancy “Landraces are by their very nature more variable...characterized by biological and adaptational consistency and not necessarily by uniformity of physical appearance.”

References:
2. ibid p 36
4. ibid p 15
5. ibid p 34
8. ibid p 9-10
9. ibid p 13-14
10. The Lamb Birth Coat Assessment and Barn Worksheet documents are good first steps to learn about Persian lamb traits.

Written by Deborah Hunter with Significant input from Alliance Authors who wish to remain anonymous karakulshepherds.org Check Bloodlines and Registry pages for references The Karakul Handbook, Hagerman, 1951, is available on the Books Plus page October 2020
The Karakul is one of the Asiatic broadtail types of sheep. It is distinctly angular in build, clean cut, alert and hardy. Differing radically from many other breeds of domesticated American sheep, Karakuls historically have been raised for the production of valuable Persian lamb. We recognize this is not currently their use in the US. But in order to keep lamb birth coat genetics, the Alliance maintains that in mature Karakuls, the emphasis should continue to be placed on those characteristics’ indicative of the best quality birth coats, not on those qualities that make for improved wool and meat production. The following physical characteristics maintain the desert heritage qualities and survivability, and have been shown to indicate the best possible capabilities as a Persian lamb producer; hence the preferred physical description of the Karakul.

**SIZE**
Karakuls are medium-sized sheep. Rams will weigh 150-225 pounds. Ewes will weigh 110-150 pounds.

**BODY CONFORMATION**

**Head**
Long, narrow and sharply defined, indented between forehead and nose, with an arched or roman-type profile.

**Ears**
May be U- or V-shape, most often pointing forward, slightly downward; variable in size, ranging from very long to ear flaps, elf ears may 1”- 2” in length.

**Horns**
In rams, hornless to large, outwardly curved spirals. In ewes, usually hornless, scurs or buds; small semi-developed horns are permissible.

**Neck and Chest**
May have wattles high on neck. The neck is long, thin, carried semi-erect, joining top of shoulder with a pronounced curve. The chest is deep and narrow, coming almost to a V between front legs.

**Body**
Long and narrow with top line showing indentation in front of and back of the withers, highest at loin, sloping angularly at rump and blending into the typical low set broadtail.

**Legs**
Long, straight, with fine to medium bone. Fineness of bone is preferred.

**Tail**
Small to very large U- or V-shape. Preferred is large with much fatty development, spans width of rump. If lower tail appendage is undocked, it may be long or short, straight, curved, angled, or flipped.

**Fleece**
Long-staple wool of a coarse grade, should fall into locks of medium density, very high yielding (low grease). Usually double-coated, although single-coated occurs; if double, the two coats may be different colors. Any color is acceptable as long as it shows good natural luster.

**CHARACTERISTICS INDICATING INFERIORITY:**
- Body square and blocky, short and close coupled; distinctly suggestive of meat-sheep conformation
- Heavy bone
- Ears set semi-erect or erect
- Very short head, or excessively large and coarse head
- Fleece distinctly woolly in character; very coarse, dull, harsh, or containing kemp
- Tail showing little or no fat-tail development; exhibiting fat on rump or fat in lower appendage

**UNDESIRABLE CHARACTERISTICS:**
- Excessive wool on forehead
- The fat-tail should never be completely docked. Tail docking and length left to breeder's discretion.

**NOTES ON SHOWING**
- Karakuls may show in Karakul classes, in Primitive or Classic multi-breed sheep classes, or in Natural Colored wool classes.
- Belly trimming is acceptable and often necessary for the animal's comfort, since they are usually in full fleece during warm weather for shows.
- Exhibitor must present sheep with enough wool to allow judge to assess quality and consistency of fleece.
- Presenting animals rinsed or un-rinsed is the individual's preference. However, washing and brushing can distort the natural lock formation resulting in a 'processed', rather than an 'unprocessed or raw' fleece.
- This is a recommendation neither for or against washing and brushing. Presentation should be the decision of the individual Karakul shepherds who are showing, and ultimately the decision of the show ring judges.

For additional information on Karakuls, please contact the Karakul Shepherds Alliance, [karakulshepherds.org](http://karakulshepherds.org) or your local breeder.

From 1946 Standard; Modernized by Deborah Hunter, Letty Klein & other Advisors

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