

## Shetland Birth coats

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Shetland adult fleeces that have a fine to medium micron (between 19-24.9 microns for fine, Grade 1, and 25-30 microns for medium, Grade 2), good crimps/inch, spinnable staple length (2.5-6") having good elasticity, soft handle, and a dense fleece with a slight tip to keep the elements out, are normally the goal for most breeders. Adult Shetlands, in fine fleece flocks, normally average between 23-27 microns. Pairing rams and ewes with fleeces that fall into these categories generally means you will get progeny with similar fleeces, but breed diversity does play a part. How to select these fleece traits at birth, to ensure good adult fleeces, means that birth coats need to be studied and compared.



Typical fine fleece samples. Fawn Katmoget samples, from 3 different sheep, with varying crimps/inch, around a 24-26 micron and low CV. Notice the slight tip to each of the samples which enables the sheep to shed rainwater when coupled with a dense fleece.

Shetland birth coats come in a variety of types. They range from tiny, tight pincurls all the way through to a long hairy coat. Studies in Merinos have documented the high heritability of birth coat types and have correlated them with a moderate association for several features such as coefficient of variation and crimps per inch.<sup>1</sup> In Merinos, seven birth coat types have been identified.<sup>1</sup> Shetland sheep have a diverse number of birth coats as well, but only 5 will be studied here.

Different types of fibers found in Shetland birth coats, including wool (secondary fibers) and guard (primary fibers) hairs:

- 1 – Tiny, tight, crimped pincurls, dense or thin
  - 2 - Longer, wavy crimped wool fibers, dense or thin
  - 3 – Medium length, straight, dense hairs – dog coat
  - 4 - Long wavy guard hairs. Can be pheomelanin color in katmogets
  - 5 – Long, straight or slightly wavy, coarse guard hairs
- Halo hairs – very fine straight to wavy guard hairs

Most Shetlands with an adult fine fleece consisting of an average micron count ranging from 20-30 microns, good crimps per inch, low SD, and having a low CV (<24) to very low CV (20 and below), generally have birth coats with one of the first three types of coats. Additionally, they may also have either halo hairs or longer wavy guard hairs above tiny pincurls or wavy crimped wool fibers. Sometimes these hairs only cover the back half (usually from the mid-section onwards). Other times, they cover more or less of the lamb. These types of birth coats generally mean the adult fleece will mature into a fine, crimped fleece. Usually, the more uniform the birth fleece, usually the more uniform the adult fleece but this also depends on the lineage of the sheep.



Fawn kat lamb with type 1-2 birth fleece, no halo hairs, and a dense fleece.

Grey kat lamb with type 1-2 fleece with halo hairs in back half and easily seen wool fibers underneath.



Moorit type 1 birth fleece, no halo hairs (1<sup>st</sup> yr fleece AFD 25.3, SD 5.3, CV 20.8, CF 85,8). Spotted grey kat with type 2 fleece and type 4 guard hairs (1<sup>st</sup> yr fleece: AFD 19, SD 4.4, CV 23.3, CF 99.5). An even, type 1 birth fleece doesn't necessarily mean a super low micron adult fleece and a hairier birth fleece doesn't rule out a superfine fleece. Genetics rule!



Grey Katmoget ram lamb with a type 2 birth fleece and some type 4 guard hairs and his 1<sup>st</sup> year adult fleece showing excellent density, high crimps/inch, great length, and very fine fibers (AFD 20.5, SD 4.1, CV 20.1, CF 98.9).

Dog coats, type 3, are distinguished from types 4 and 5 by being very dense and 'different' by checking the armpits and the scrotum (on ram lambs) to see if there is hidden, tiny crimped wool fibers. This indicates the birth coat will fall out, generally between 2.5-8 months' time, depending on the lineage of the lamb, and be replaced with a fine, usually highly crimped, adult fleece that is dense (but not out of standard). This birth coat type sometimes resembles a 'fur' coat, hence dog coat. It is theorized that this type of birth coat is made up of fine, tightly packed guard hairs that will have a greater number of secondary wool fibers, hence the density of this coat.



The black lamb has a dog coat whereas the white lamb was born with a type 1 fleece. Dog coated lambs are very hard to photograph because the hairs 'fuzz' the picture so much it looks blurry. These lambs are about 3 weeks old. As you can see, the black lamb's fleece isn't overly long, like a type 4 or 5 guard hair fleece, but still looks 'fuzzy' or 'furry'.

An all-over type 4 coat, with wavy guard hairs may or may not lead to a fine, crimped adult fleece. Parent's micron data and fleece samples are helpful in all cases of trying to figure out the future lamb's adult fleece, but sometimes, because of the diversity of the breed, pairing doesn't always breed true and a different birth or adult fleece arises. For type 4 coats, parting the fleece in several spots on the lamb can better reveal if there are crimps in the wool fibers below the guard hairs, indicating a mixed birth fleece type. Depending on the parent's fleece type, this can mean that the guard hairs will fall out, leaving a fine or medium wool adult fleece. If no crimped wool fibers are found under the guard hairs, this birth fleece can turn into a medium (possibly coarse) adult wool fleece with fewer crimps per inch and higher CV, especially if the parent's fleece is medium or coarse.

It is postulated that the presence of these wavy, type 4 guard hairs indicates more secondary wool fibers in the adult fleece, hence a denser fleece as well. This is especially true if the presence of type 1 or 2 wool fibers are dense under the guard hairs. It may also indicate a slightly longer staple length in the adult fleeces.

Type 5 fleeces are comprised of long to very long, coarse guard hairs with no crimping of wool fibers (or even a lack of wool fibers under the guard hairs) and usually indicate a lower crimps per inch, a higher micron (medium to coarse, depending on parent's stats), and higher CV in the ensuing adult fleece. These lambs tend to look like puffballs.

<sup>1</sup>Birth Coat: is it worth taking into consideration in Merino sheep genetic improvement programs? RW Ponzoni, RJ Grimson, KS Jaensch, SH Smith, PI Hynd. *Wool Technology and Sheep Breeding*. Vol. 45, Issue 1. 1997. Article 3.