



BREED ADVISORY COMMITTEE



THE RECOMMENDED BREEDING POLICY FOR SOMALI CATS

LIST OF CONTENTS

Introduction	3
History of the Somali	3
Genetic Make-Up	5
Genes responsible for Coat Texture, Quality & Colour	5
Key Genes for Somalis	6
DNA Testing for Colour	9
Somali Type	10
Somali Coat Colour & Pattern	11
EMS Coding & Colours	11
Shorthairs	13
Somali Coat Quality, Length & Texture	13
Breeding System	14
Evaluating Kittens for Breeding	15
Inbreeding	15
Acceptable Levels for Inbreeding Coefficients	16
Genetic Anomalies	16
Blood Typing	18
Mentoring	19
Somali BAC Recommendations	19
Useful References	21
Gallery of Somali Colours	22

INTRODUCTION

This Breeding Policy accompanies and supplements the Somali Registration Policy and should be read in conjunction with that document. If there are any queries regarding either document, these should be referred to the Somali Breed Advisory Committee. As a single breed BAC, the Somali Cat Club Committee constitutes the Somali BAC led by an independent Chairman.

The aim of this Breeding Policy is to give advice and guidance to ensure breeders observe what is considered 'best practice' in breeding Somali cats. The over-riding objective is to conserve and improve the Somali, working to meet all aspects of the Standard of Points, which describes the ideal for the breed. Breeders should learn how to understand the breeding value of their Somalis and how to make decisions in their breeding programmes that are 'best for the breed' in its ongoing development. They should balance the need for selective out crossing to increase the gene pool and improve stamina and health with the need to breed Somalis with sufficient preceding generations of Somali x Somali matings to produce consistent type, colour and quality. Co-operation between Somali breeders, within the GCCF and internationally, will ensure that diverse breeding lines are maintained within the breed and that breeders have sufficient options to maintain low inbreeding coefficients.

THE HISTORY OF THE SOMALI

The origins of the Somali lie in longhaired kittens which sometimes appeared unexpectedly in Abyssinian litters. Most sources agree that Somalis were first deliberately bred and given their name in the early nineteen sixties in America by an Abyssinian breeder, Evelyn Mague. However, there are records of longhaired Abyssinian kittens going further back than that. There is, for example, an illustration in a book, *The Cat in Ancient Egypt* by Jaromir Malek which shows a cat that may well be one of the first recorded Somalis!



The cat described as “mistress of the embalming house” in the papyrus of Nespaheran, c900 BC – original in the Oxford Bodleian Library

The current Somali Standard of Points states: “The expression should be alert and smiling”; Ears – “Set wide apart but not low; pricked, well-cupped and tufted”; Eyes – “Large, almond-shaped” “expressive and bright”; Body – “Firm, lithe and muscular”; Coat – “All other points being equal, preference should be given to the cat with a ruff”

An early illustration of a Somali?

The breed's history starts with that of its parent breed, the Abyssinian. During the reign of Queen Victoria the British Empire was at its height and the British had a large presence in India, where ticked cats are present. Ticked cats were probably not seen in the UK before the 1860s when they were brought back by army families returning from the colonies. The first known example of an Abyssinian is a cat called Zula brought to the UK in 1868 by the wife of an army captain, Mrs Barret-Lennard. There were no British colonies in Abyssinia (which went on to be renamed Ethiopia) but some returning army families were stationed there temporarily when the British army had some involvement with a military conflict. The first ticked cats were probably taken originally from India, possibly via Abyssinia from where they acquired their name. These cats were extensively crossed with domestic shorthairs in the UK to produce more ticked cats. Initially the only colour bred was the Usual. After the Second World War the breed went through a bottle neck with little more than twenty cats and further domestic shorthair out crossing was required. As the breed progressed, sorrels and blues appeared and were developed. There is evidence that silvers were present in the early days of the breed but were lost, then reintroduced in the mid 60s from an outcross to a silver spotted British Shorthair. In the 70s and 80s crosses to Siamese and Burmese introduced the chocolate and red series colours to Somalis and Abyssinians.

It seems likely that the longhaired allele¹ was introduced to the Abyssinian gene pool from the out crosses to domestic shorthairs, as the allele is present in the general population of non-pedigree cats and can be carried by shorthaired cats. Occasionally longhaired kittens appeared in Abyssinian litters but were generally seen as undesirable, so were petted out and not recorded. Abyssinians Raby Chuffa of Selene, from Canada/United States, and Bruerne Achilles from Australia/New Zealand were identified as longhair carriers. However, it was Evelyn Mague, an Abyssinian breeder from the USA who first recognised the potential for the Somali as a breed in its own right and worked on the development of a breeding programme. Mague also volunteered in a cat shelter and a longhaired Abyssinian kitten, called George was rehomed by her in 1969. She was excited by his beauty and discovered that his father was one of her Abyssinian studs, Lynn-Lee's Lord Dublin. The breeder who had brought her Abyssinian queen to Mague's stud had given up breeding and the queen was acquired by Mague. This queen was Lo-Mi-R's Trill-By. Mague was able to repeat the mating and produced another longhaired kitten, a female, in 1972. She chose the breed name Somali, to reflect the closeness to the Abyssinian, because Abyssinia and Somalia were

¹ Allele – Mutant form(s) of the normal gene on one strand of a chromosome usually paired with a gene on the complementary autosomal strand. Many alternative alleles can occur at one site.

neighbouring countries. Significant early prefixes in the development of the breed were Lynn-Lee, Foxtails, Homespun, Purrkin's, Purrpots, Rookwood, Tri-Na-Nog, and Nephriani. The breed was first officially accepted in 1979, by the Cat Fanciers' Association in the USA.

The first Somalis were imported into Britain in 1980 when a consortium of Abyssinian breeders imported Foxtail's Belle Starr and Champion Nephriani's Omar Khayyam. In 1981 Doctors Peter and Margaret Frayne imported two more Somalis, Black Iron Vagabond and Black Iron Venus. The Somali Cat Club of Great Britain was formed in 1981 and gained affiliation to the GCCF. Full championship status was granted to Usual and Sorrel Somalis in 1991.

The Somali is now well established in the UK where many generations of breeding have developed and fixed good phenotype² in the breed. The Somali is very different from the other cats in the Semi-Longhair Section, being the only ticked cat in the Section although it shares with the Nebelung its medium, elegant build and Foreign type.

GENETIC MAKE-UP

The semi-longhaired Somali cat is always a longhaired ticked tabby cat with the basic genotype AA, ll, ss, T^aT^a

AA means that they are homozygous for the agouti allele. This means that Somalis breed true as tabbies, but it does not play a role in determining which specific tabby pattern is present.

ll means that they are homozygous for the longhaired allele of the hair length gene, meaning that all Somalis breed true for long hair.

(NB This does not apply to Somali Shorthairs (formerly known as Somali Variants), which are heterozygous for the longhaired allele.)

ss means that they are homozygous for the non-white spotted allele of the white spotting gene. This means Somalis are not allowed any white spotting. For this reason, the Somali Standard of Points regards a white locket or any white patches of fur anywhere except around the chin, lips and nostrils as a severe fault where no awards may be given at a show. A cat that is not of show quality should not be bred from.

T^aT^a means Somalis are homozygous for the ticked tabby pattern. All Somalis breed true for ticked tabby and no other patterns should be seen.

GENES RESPONSIBLE FOR COAT TEXTURE, QUALITY AND COLOUR

A large range of colours are seen in the Somali breed. These variations are controlled by a group of both dominant and recessive genes; consequently one cannot fully understand colour inheritance in Somali cats without a basic understanding of cat genetics. Breeders may wish to ensure that they register

² Phenotype – Any observable characteristic or trait of an organism such as its shape, appearance or behaviour. Phenotypes result from the expression of an organism's genes (genotype) as well as the influence of environmental factors and interactions between the two.

cats correctly and DNA testing may be used for clarification but the Somali Breed Advisory Committee would advise that should there be any doubt as to the correct colour of a Somali, that cat is not of the expected quality required for breeding and/or showing.



Felis Sylvestrus Lybica – The African wild cat

All domestic cats are descended from a wild ancestor, probably either *Felis silvestris lybica*, a mackerel tabby patterned animal, or *Felis chaus*, a ticked cat and thus all domestic cats are of an underlying genetic tabby pattern.

All cats have 19 pairs of chromosomes upon which there are many thousands of genes that govern the eventual shape, size, sex, colour, coat pattern and hair length of the individual animal. Over the generations a number of mutations have occurred and selective breeding has been used to isolate these to produce the various pedigree breeds we see today.

Genes normally come in pairs. Different variations of a gene are called alleles and a pair can either contain two alleles that are the same (homozygous) or two different alleles (heterozygous). When a heterozygous gene pair occurs, it is the dominant allele which determines the cat's appearance (that is why a SLH Somali mated to an Abyssinian or a Shorthaired Somali will produce shorthaired kittens!). The recessive allele can be passed on to the cat's offspring. Dominant alleles are written with a capital letter and recessive alleles are written with a lower case letter.

KEY GENES FOR SOMALIS

A/a Agouti or Non-agouti

Agouti (A) - the natural "wild" allele that is the basis of the tabby cat. The base agouti pattern consists of bands of black on a yellow background; in the cat this is overlaid with one of the tabby patterns.

Non- agouti or "hypermelanistic" (a) - a recessive mutation that turns the original "wild" tabby cat into a self by overlaying the agouti base colour with

eumelanin pigment, making the whole animal appear one solid colour, although often in certain light the underlying tabby pattern may still just be discernible.

All Somalis are homozygous for Agouti (AA)

T^a/t^a Ticked or Non-ticked

Ticked (T^a) – an incompletely dominant gene which removes most of the stripe pattern leaving the ticked agouti base pattern on the body with minimal overlaying stripes on legs, chest (necklace) and face. Cats carrying a non-ticked allele have more pronounced stripes on the legs and chest. A ticked tabby pattern can cover all three other tabby patterns.

Non-ticked (t^a) – the normal recessive form of the gene which allows the other underlying tabby pattern to show through.

All Somalis are homozygous for Ticked Tabby (T^a T^a)

I/i Inhibitor or Non-inhibitor

Inhibitor (I) – a dominant allele that suppresses the development of pigment in the hair of the coat, typically producing hairs that are fully coloured only at the tip and have a silvery white base. It has greater effect on the lighter pigment in an agouti cat, removing the yellow colour and turning the base colour white or “silver”.

Non-inhibitor (i) – the normal recessive form of the gene in which cats are not silver.

All silver Somalis have one or two copies of the inhibitor allele

L/l Shorthair or Longhair

Shorthair (L) – the dominant ‘wild’ form of this gene, which produces a short coat.

Longhair (l) – a recessive gene mutation which produces a longhaired cat.

All Semi-longhaired Somalis are homozygous for longhair. Shorthaired Somalis (formerly named Somali Variants) are heterozygous, carrying the long hair allele. The Somali Breed Advisory Committee advises breeders should always mate shorthaired Somalis to a semi-longhaired Somali to retain the soft, fine texture of the Somali coat, an important feature of the breed.

B/b/b1 Black or Chocolate or Cinnamon

Black (B), Chocolate (b) and Cinnamon (b1) – three different alleles of this gene occur. Chocolate and cinnamon are both mutations of the basic black gene which modify black into dark brown or medium brown respectively.

This gene controls whether Somalis are Usual (black), Chocolate or Sorrel (cinnamon). Black can carry EITHER chocolate OR cinnamon, but

not both! Chocolate can carry cinnamon, but not black. Cinnamon cannot carry the other colours.

Possible combinations

BB Usual carrying nothing

Bb Usual carrying Chocolate

Bb1 Usual carrying Sorrel

bb Chocolate carrying nothing

bb1 Chocolate carrying Sorrel

b1b1 Sorrel

O/o (O/y) Orange or Non-orange

Orange (O) – this gene eliminates all eumelanin pigment (black and brown) from the hair fibres, replacing it with phaenmelanin, a lighter compound appearing yellow or orange depending on the density of pigment granules. Rufous polygenes³, as yet unidentified, affect the richness of the orange gene's expression.

The sex-linked⁴ nature of this gene means that it is inherited on the X and Y chromosomes which determine gender. Males with one copy of the gene will be orange (i.e. red or cream), while females with one copy will be torties and need two copies to be orange.

All red or cream Somali males have one copy of this gene, while all red or cream Somali females have two copies. Somali females with just one copy are torties.

D/d Non-dilute or Dilute

Dilute (d) – a recessive gene which reduces and spreads out the pigment granules along the hair-shaft and turns a black to blue, chocolate to lilac, cinnamon to fawn and red to cream.

All Blue, Lilac, Fawn and Cream Somalis have two copies of this allele.

Polygenes – these are collections of genes which modify the effect of the main dominant and recessive genes above. A build up of polygenes creates a bigger effect, for example a collection of certain polygenes increases the length and density of the long-hair gene to create the Persian, and a build-up of polygenes serves to enhance the effect of the main colour genes, turning the effect of the orange gene from the sandy colour of the ginger domestic tom to the rich vibrant red of the Red Persian, British or Asian Self. It is likely that

³ Polygenes – Genes with small, but cumulative effects on the expression of a character. So, rufous polygenes can affect the richness of the coat colour.

⁴ Females normally have a pair of X chromosomes – XX; while males have one X and one Y - XY

a group of polygenes is the reason for a high degree of warmth and rufousing in many Somalis.

So, in summary, the genetics involved in the ideal Somali cat are complex. Not only are there many interacting genes, but sometimes those genes do not express themselves fully, or they may conflict with one another. For example, the melanin inhibitor sometimes does a poor job of blocking pigment, resulting in an excessively grey undercoat on a Usual, or tarnishing in Silvers. Various polygenes, epigenetic factors, or modifier genes, as yet unidentified, are believed to result in different phenotypes of colouration, some deemed more desirable than others.

DNA TESTING FOR COLOUR

Tests for colour and pattern genes can be used either to determine the correct colour or pattern to register a kitten correctly if there is a problem and also to discover what colour and/or pattern genes a cat or kitten carries. Available tests include

- Black/Chocolate/Cinnamon
- Dilute

A test for the inhibitor gene (silver) is in development.

However, the Somali Breed Advisory Committee would stress that should there be any confusion regarding the correct colour of any individual Somali, then that cat is not suitable for showing or breeding.



*The overall impression on this blue silver Somali is of a glacial, silvery blue colour made up of well-defined blue ticking on a clear silvery white base. There is clearly no doubt this is a **SOL as**.*

SOMALI TYPE

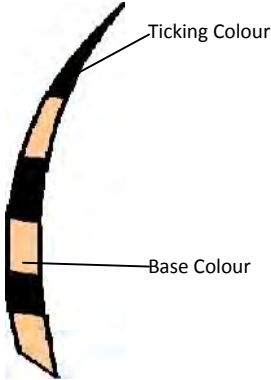


This handsome Sorrel shows perfectly the “slight nose break” that is essential

The Somali Standard of Points, the "bible" for all Somali breeders, requires a beautifully balanced cat of medium build and Foreign type. A Somali should demonstrate style and elegance, its body lithe and muscular, its long legs slender with oval paws. The head should be broad, forming a moderate wedge with gently rounded contours. The muzzle should also be rounded and generous to give the unique "Somali smile". Even in kittens, the breadth of the muzzle should be noted if one is choosing for show or breeding quality and all Somalis used in breeding programmes should be of successful show quality. The eyes are large and almond shaped with an oblique setting. As clearly indicated in the photograph on the left, a Somali's profile should show a slight nose break; the chin should be firm and the neck elegant. All Somalis have dark rims to the eyes surrounded by lighter

"spectacles". This highlights and accentuates the size of the eyes making them very expressive and appealing. The eyes should be set well apart too. The ears should be set wide apart but not low. They should be broad at the base, proportionately large, pricked and well cupped. The semi-longhaired Somali should have tufted ears which are also well furnished. The body should be firm, lithe and muscular, of medium length with a level back. The tail should be long and tapering. The SOL will have a full brush and the shorthaired Somali a long tail that tapers, with a rounded tip. The head, body, legs, feet and tail should be in proportion, giving a well-balanced appearance overall. A Somali's expression should be alert and smiling; any suggestion of a pinched, snipy look should be severely penalised by judges on the show bench and such kittens should never be sold on the Active Register to be bred from. A Somali should be in excellent physical condition with good weight and muscle tone for its size. The complete Somali Standard of Points is available from the GCCF and is also displayed on the Somali Breed Advisory Committee's website at <http://www.somalibac.co.uk/standards.html>.

SOMALI COAT COLOUR AND PATTERN



Ticking is the "essence" of the Somali coat. There should be at least THREE bands of the ticking colour on every hair on a Semi-longhaired Somali and TWO bands on the Shorthaired Somali. In this illustration of a "Usual" Somali hair you can see three bands of black ticking on the apricot base colour.

Ticking is slow to develop, particularly on the "dilute" colours but should be apparent, at least on the shoulders of all kittens by 14 weeks.

Ear tips & tufts, facial markings, top and tip of the tail, toe tufts and heels are the same colour as the ticking. Darker shading along the spine and top of the tail is desirable.

The chest, belly, under tail, inside of the legs and breeches are the colour of the unmarked base colour.

The overall impression of a Somali's coat colour is dependent on the definition of the ticking against the correct base colour. It is very important breeders are totally confident regarding the colour and ticking of the kittens they register on the Active Register as suitable for breeding and showing if we are to maintain the quality and integrity of our breed.

EMS CODING

The EMS codes were introduced by FIFe as an easy method of writing a visual description of a cat that could be used for all breeds, all colours and all patterns without too much complication. In 2013 GCCF delegates voted to adopt this international coding to replace the overloaded GCCF complicated breed numbering system. The first part of the EMS code denotes the cat's breed and is made up of three upper case letters so that the SLH Somali will be SOL and the Shorthaired Somali SOS where the last letter of the code denotes the different coat length. The codes for colour and the s for silver are written in lower case.

SOMALI COAT COLOURS IN EMS

EMS	Colour	Overall Impression	Ticking	Base Colour
n	Usual	Rich golden brown	Black	Rich Apricot
o	Sorrel	Rich coppery colour	Cinnamon	Rich Apricot
b	Chocolate	Rich, warm chestnut brown	Dark 'plain' Chocolate	Rich Apricot
a	Blue	Soft, warm blue	Blue	Warm Oatmeal or Mushroom
c	Lilac	Warm dove grey	Lilac	Oatmeal or Mushroom

p	Fawn	Warm powdery fawn	Fawn	Pale Oatmeal or Mushroom
d	Red	Warm, glowing red	Bright Red	Paler Red
e	Cream	Soft, warm, powdery cream	Rich Cream	Paler Cream
f	Usual Tortie	Rich golden brown/red patches	Black/Red	Rich Apricot/Paler Red
q	Sorrel Tortie	Rich copper/red patches	Cinnamon/Red	Rich Apricot/Paler Red
h	Choc. Tortie	Chestnut brown/red patches	Dark Chocolate/Red	Rich Apricot/Paler Red
g	Blue Tortie	Soft blue/cream patches	Blue/Rich Cream	Mushroom/Paler Cream
j	Lilac Tortie	Warm dove grey/cream patches	Lilac/Rich Cream	Mushroom/Paler Cream
r	Fawn Tortie	Warm fawn/cream patches	Fawn/Rich Cream	Pale Mushroom/Paler Cream

Tortie Somalis

Colour distribution in tortie Somalis is random and immaterial although a solid foot is not permissible. Ticking, ears tips and tufts, facial markings, top and tip of the tail, toe tufts and heels to be a mingling of the standard ticking colour and shades of red or cream determined by the sex-linked gene. Chest, belly, under tail, inside of legs and breeches to be a mingling of the standard base coat colour and shades of red or cream determined by the sex-linked gene. The presence or absence of a blaze is immaterial.

Silver Somalis

The addition of a lower case "s" to the standard breed colour code indicates a Silver Somali. Tarnishing over a substantial portion of the designated silver area is a "withholding fault", the overall impression should be silver.

Code	Colour	Overall Impression	Ticking	Base Colour
ns	Usual Silver	Clear silvery white ticked with black	Black	Silvery White
os	Sorrel Silver	Soft, silvery peach	Cinnamon	Silvery White
bs	Chocolate Silver	Cool silvery brown	Dark, 'plain' Chocolate	Silvery White
as	Blue Silver	Glacial, silvery blue	Blue	Silvery White
cs	Lilac Silver	Frosty, silvery dove grey	Lilac	Silvery White
ps	Fawn Silver	Cool, silvery fawn	Fawn	Silvery White
ds	Red Silver	Clear, silvery red	Red	Silvery White
es	Cream Silver	Powdery, silvery cream	Rich Cream	Silvery White

Tortie Silver Somalis

These use the tortie codes with the addition of s code for silver. The silvery white base hair should have two distributions of ticking; the standard colour and that expressing the sex-linked gene. The distribution of these two colours is immaterial but a solid foot is not permissible. fs = Usual Tortie Silver; qs = Sorrel Tortie Silver; hs = Chocolate Tortie Silver; gs = Blue Tortie Silver; js = Lilac Tortie Silver; rs = Fawn Tortie Silver.



SHORTHAIRS (VARIANTS)

A "v" on an older Somali pedigree indicates that cat has short hair and was called a "shorthaired" Somali Variant.

So, the cat illustrated on the left was described as a 63v, as Variant was the term previously used for shorthaired Somalis. The Somali BAC is totally committed to gaining full, championship recognition from the GCCF for our shorthairs, to ensure Somali breeders will continue to outcross the breed in

their programmes. This is vital for maintaining a healthy gene pool for the Somali while protecting priorities such as generously curving head contours and the soft, fine textured coat. Shorthairs were recognised at Preliminary Status by GCCF in 2012 and are progressing well. A significant number have already achieved the required number of Merits required for our application for promotion. We aim for this to be secured by the end of 2014.

SOMALI COAT QUALITY, LENGTH AND TEXTURE

Originally, the Somali Breed Advisory Committee requested the GCCF Board of Directors to allocate semi-longhaired Somalis with the breed number 63L and 63S used for the shorthaired Somali. This created some problems with the upper case S for hair length and lower case s for the silver gene. So, it was with some relief that the move to the EMS was made giving the SLH Somali the code SOL and the SH given SOS.

The intended descriptions for coat quality, length and texture are as follows:

SOL Soft and fine, dense but lying flat along the spine. Semi- long, except over the shoulders where a shorter length is permitted. All other points being equal, preference should be given to the cat with a ruff and full breeches. Ruff and breeches may not be apparent in kittens.

SOS A coat of medium length that is smooth, fine and dense but close lying. The coat will be of fairly uniform length with no ruff, toe tufts, breeches or brush.

A coarse or overly resilient coat in shorthaired Somalis will be considered a serious fault as it is one of the significant differences between the desired coat quality of the Abyssinian and our shorthaired Somalis. **For this reason the Somali Breed Advisory Committee will make it clear in this Breed Policy**

as well as the Registration Policy that shorthaired Somalis must be mated to semi-longhaired Somalis to maintain the correct coat quality.

BREEDING SYSTEM



In order to ensure the maintenance of the good Somali breed type already achieved, while allowing scope to improve certain aspects of type, coat, pattern and colour further and to meet the ideals described in the Standard of Points, breeders need to have a clear, definite and well understood Breeding System. This means the development & management of a breeding programme in

which certain cats are affirmatively selected to be bred to others for predetermined reasons.

Equally important, it also means that breeders allow no matings until they have given careful consideration to the outcome.

In particular three key rules must be followed

- Health must be the overriding concern in any Somali breeding programme
- The good and bad features of the individual cats should be assessed and weighed against each other before any mating.
- When planning a breeding programme, breeders must realise that doubling the good traits in a cat could also result in doubling the defects; the breeding of cats with similar faults should be avoided at all costs, otherwise there is a danger of fixation (homozygosity).



The prime motive in this Breeding Plan is to perpetuate the Somali as a recognisable breed; to improve the quality of the breed as measured against the Standard of Points and to maintain success on the show bench.

The skill in breeding lies in the choice of the individual cats and how these cats may be mated with each other. These two acts should be regarded as completely separate, although interconnected. The phenotype (appearance) of the individual cat is made up of a large number of genetic

characteristics of varying expression. The ideal Somali is one in which the expression of these characteristics is just right according to the Standard of Points. This expression is controlled by selective breeding.

EVALUATING KITTENS FOR BREEDING



Breeders should make rational decisions on which kittens to retain for future breeding, or allow to be placed on the Active Register, based on a range of different factors.

Animal breeding scientists use evaluation systems to calculate Estimated Breeding Values, or EBVs for animals. Cat breeders can use similar methods in a less formal way in order to evaluate kittens and make comparisons which can help to inform decisions. There is a risk that breeders will make selections based on too limited a range of factors. The following should be taken into consideration;

- Closeness to the Standard of Points
- Number and severity of faults
- Temperament
- Health
- Development
- Co-efficient of Inbreeding
- Generational Level
- Parental/familial breeding history
- Fit with breeder's breeding goals
- Breeder's intuition

Breeding evaluation score sheets are available for breeders to use to make assessments of their kittens. A form is available on the Somali BAC website.

INBREEDING

Inbreeding is an inclusive term covering many different breeding combinations and degrees of relationship – including the more distant, less intense. It is consistently more efficient in eliminating heterozygous (varying and diverse) genotypes and increasing homozygous (similar) genotype, thereby ensuring a greater likelihood that kittens will closely resemble their parents. Used here, the term does not mean close, purposeful, inbreeding of closely related cats (brother/sister, father daughter), but rather the moderate form that results from

the mating of not too distantly related (but not directly related) cats (first cousins, half brother/half sister, second cousins, etc). Some in-breeding is essential to stabilise conformation around a definite type. In-breeding is the act of mating individuals of various degrees of kinship, and if continued it produces ever increasing homogeneity in the offspring.

It is important to monitor the percentage intensity of inbreeding for any mating – use this consideration as a key part of the decision making process when considering any mating, and remember: ***“The more intense the in-breeding, the more careful must be the selection”.*** ***“Loss of innate genetic variability must not be too great”.***

The overall approach should be one of balance and moderation in the degree of inbreeding coupled with consistent selective breeding with a clear objective in mind – i.e improvement of key aspect and/or the elimination of weak traits or defective genes.

Breeding systems and practices need to operate so as to ensure the Somali gene pool contains enough variation to give scope to continue improving the breed and avoid the danger of either fixing type too quickly (before the ideal of the standard is reached) or deleterious genes being expressed and fixed in the breed. Breeders need to use acceptable levels of inbreeding to gain sufficient homogeneity to fix recognisable Somali type, but with sufficient variation to both enable improvement, and maintain health and vigour, avoiding fixation of defective genes or unwanted traits (and to ensure the elimination of anomalies).

The golden rule is that health is paramount and must be constantly and consistently monitored; any evidence of weakness or the emergence of lack of vigour must be dealt with immediately through modification of the breeding system. No cat with any evidence of health problems or lack of vigour should be used for breeding.

Breeders should also be aware that research has shown that highly inbred animals are less likely to be show winners. Although a certain level of acceptable inbreeding can help to fix desirable traits, inbreeding depression can cause asymmetries and weaknesses that can be damaging to a cat's potential show success.

ACCEPTABLE LEVELS FOR INBREEDING CO-EFFICIENTS

0 to 10 % = Low

10 to 20 % = Fair

20 to 25% = Acceptable

25 to 40% = High. Only to be undertaken by experienced breeders for specific reasons.

40%+ = Not advised

GENETIC ANOMALIES

The problems of genetic anomalies is something of which all breeders should be aware; this is not to suggest they are necessarily common, but cats will have a quota of defects just as are found in other species. Below is a list of better known genetic disorders that can affect Somalis. The GCCF and the Somali Breed Advisory Committee recommends breeders use genetic screening where available to manage and eliminate detrimental genes. Further details may be found on the Somali BAC website at <http://www.somalibac.co.uk/gentest.html> .

Erythrocyte Pyruvate Kinase Deficiency (PK Def)

This is an inherited haemolytic anaemia that occurs in Abyssinians, Somalis among other breeds and also some domestic shorthair cats. The deficiency of this regulatory enzyme causes an instability of red blood cells which leads to anaemia. The anaemia is intermittent, the age of onset is variable and clinical signs are also variable. Symptoms of this anaemia can include: severe lethargy, weakness, weight loss, jaundice, and abdominal enlargement. This condition is inherited as an autosomal recessive.

Since 24th October 2007 all Somalis registered with the GCCF on the Active Register are screened for the gene which causes this condition. Untested cats or carriers of the defective allele remain on the genetic register. The inclusion of screening requirements in the Somali Registration Policy has proven to be a good way of eradicating this disease from Somalis bred by GCCF breeders. The Somali Breed Advisory Committee has worked hard to eradicate this disease from our Somali cats.

Progressive Retinal Atrophy (PRA)

A hereditary form of late-onset blindness has been identified in Somalis (and Abyssinians) and is characterized by progressive degeneration of the photoreceptors (rods and cones) in the retina. This disease has been designated "rdAc". Affected cats have normal vision at birth, with loss of vision first detectable at about seven months of age. This progresses slowly and is variable, with most cats becoming blind by usually 3-5 years of age. There is no treatment available for the condition. This is a recessive condition, meaning that two copies of the mutation are required for the cats to be affected. Carriers have one copy of the mutation and are not affected, having normal vision.

A different form of blindness called "rod cone dysplasia", or "Rdy" has also been identified in Somalis (and Abyssinians). This is a dominant mutation which leads to early-onset blindness by 7 weeks of age and is thankfully rare. Although PRA has been found to be present in Somalis in certain countries, the Somali Breed Advisory Committee has not been made aware of any cases in UK-bred Somalis at the time of publication of this document.

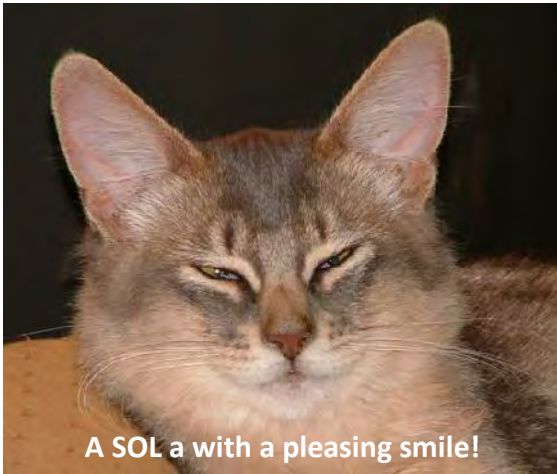
Further research is needed to refine the DNA test available for the two identified forms of PRA as there have been concerns about the potential for false positives. Recent studies suggest not all cats carrying two copies of the mutation will become affected and has shown, in some breeds of dogs, that an identifiable “modifier” in addition to the two copies of the gene is the “trigger” that causes the disease to be expressed.

Nevertheless, breeders who are concerned about the potential for PRA in their lines can use the test and it would be advisable for any imported cats to be tested.

A full list of genetic anomalies is given in the GCCF Standard List of Withholding Faults for All Breeds. Breeders and exhibitors should familiarise themselves with these and be aware of the implications of breeding with or showing any cats with any of these defects.

Other physical defects, behavioural problems and health problems may have a genetic component and should not knowingly be perpetuated in the breeds.

Within the Somali breed no such defects are especially common, but breeders can find a comprehensive list of anomalies known in various breeds in the GCCF Breeding Policy which may be purchased from the GCCF Office or studied online at <http://www.somalibac.co.uk/policybreeding.html>



A SOL a with a pleasing smile!

The golden rule for all Somali breeders is that health is paramount and must be constantly and consistently monitored. Somalis used in breeding programmes should be of show quality with pleasing type, correct colour and well defined ticking. They should be of good temperament and respond to their owners with affection. A healthy, happy Somali is an absolute joy to own.

Breeders should register all of their kittens to ensure those not suitable for breeding are placed on the non-active register and cannot be bred from by the new owner. Novice owners of breeding females will find the Somali Breed Advisory Committee, through the Somali Cat Club, has committee members only too willing to support and advise regarding Somali studs that will be a suitable choice for their female with regard to health, type, colour and quality.

BLOOD TYPING

Both blood type A and blood type B are present in the Somali breed.

The recommended method for blood type testing is the DNA test and the blood test for blood type should not normally be used, except for confirmation.

DNA testing is less intrusive for the cat and provides more detailed information as it can give the following results:

Type A (homozygous for dominant A)

Type A (heterozygous, i.e. carrying the gene for B)

Type B (homozygous for recessive B)

Type AB (Rare third blood group)

The blood test to determine blood type is the less favourable option of the two because it is more intrusive for the cat and it cannot differentiate between the homozygous and heterozygous forms of Type A blood. Only the DNA test can show if an A type cat carries B or not.

Blood type incompatibility can result in kittens that fade within 48 hours of birth. This condition has not been known in Somalis in the UK but more information on the subject may be found at International Cat Care (formerly the Feline Advisory Bureau) in one of their excellent information sheets for breeders:<http://www.icatcare.org/advice/cat-health/feline-blood-groups-and-blood-incompatibility>

MENTORING

All new Somali breeders should start under the guidance of a mentor; an experienced breeder who has already bred a number of Somali litters. This is especially important for novice breeders with little or no prior experience of cat breeding, but support is, of course, also available to breeders who may have experience of other breeds but are new to the Somali breed. If a new breeder does not have a mentoring relationship with the breeder of their cat, a mentor can be identified by contacting the Secretary of the Somali Cat Club via <http://www.somalicatclub.com/> or the Somali Breed Advisory Committee Secretary at annegregory11@gmail.com

All breeders are strongly recommended to become members of the Somali Cat Club, the original and only GCCF affiliated club for the breed and participate in ongoing education and development about cat breeding through participation in appropriate discussion forums, seminars and cat clubs in the GCCF.

SOMALI BAC RECOMMENDATIONS

- The Somali BAC recommends that breeders re-read this Breeding Policy, as well as the general GCCF Breeding Policy, the Somali Registration Policy and the Somali Standard of Points at least once a year. Copies of these policies should be given to all prospective owners of Somalis to be used for breeding on the Active Register.

- All Somali breeders are encouraged to take advantage of any relevant official scheme, which may be devised by the BAC to test the soundness of the Somali breed.
- Breeders should have breeding cats tested for PK Deficiency where they believe there may be any chance of the gene being present. People purchasing kittens should ask breeders for the status of the parents before purchase. Cats with the affected form of PK Deficiency should not be used for breeding. Cats which are carriers of PK Deficiency should only be used for limited breeding in circumstances where a breeder wishes to retain a specific breeding line although this should only be undertaken by experienced breeders. Cats that are carriers should only be mated to certified non-carriers and offspring tested to ensure that only normal (PK Def. Negative) offspring are retained for future breeding. All Somali studs on the Somali Stud List are negative for PK Deficiency and the Somali BAC Secretary has copies of their certificates. The work undertaken by the Somali Breed Advisory Committee with their rigorous rules regarding testing has resulted in the disease being virtually eradicated in our breed. Any Somalis that are imported from other registries should be independently DNA tested by an approved laboratory (see the Somali BAC website for details) before purchase.
- Somali breeders are encouraged to work closely with other like-minded breeders to improve the breed and realise shared objectives whilst maintaining a diverse gene pool.
- Breeders are urged to observe the GCCF Code of Ethics, the recommendations of the GCCF, the advice of their mentor and their own veterinary surgeons regarding cat welfare, the importance of neutering, health, inoculations etc.
- The BAC recommends that breeders should think carefully before selling any Somali cats on the Active Register, taking into consideration the purchaser's experience and that no kitten should be sold on the Active Register to a breeder new to the breed without ensuring that a mentoring relationship is in place, either with the breeder of the kitten or another suitably experienced breeder.
- Somali breeders should take note of the Somali Registration Policy as it is applied by the GCCF before purchasing and importing a cat from another registration body. The GCCF Somali Registration Policy requires FIVE generations of Somalis in recognised colours with only Abyssinian or Somali Shorthairs (formerly Somali Variants) present on the pedigree. To ensure the integrity of the fifth generation, the GCCF Registrar will also need to investigate the sixth or further generations.

- **REMEMBER!** The Somali Breed Advisory Committee is always there to provide advice to all Somali owners and breeders and will do everything it can to promote and support our breed.



USEFUL REFERENCES:

“**Robinson’s Genetics for Cat Breeders & Veterinarians**” by Vella, Shelton, McGonagle and Stanglein, published by Butterworth & Heinemann.

“**The Cat in Ancient Egypt**” by Jaromir Malek, published by British Museum Press

Somali BAC Website - <http://www.somalibac.co.uk/index.html>

Somali Cat Club Website - <http://www.somalicatclub.com/>

GCCF Website - <http://www.gccfcats.org/>

International Cat Care (formerly Feline Advisory Bureau) – www.icatcare.org

The Somali Cat – Mrs Dianne Taylor – to be published in Spring 2014 details on the Somali Cat Club Website.

GALLERY OF SOMALI COLOURS

These photographs illustrate a selection of the many colours found in the Somali breed. It should be noted that some of the cats photographed are much loved pets rather than show quality Somalis. The relevant EMS codes are included.



Usual = SOL n



Sorrel = SOL o



Chocolate = SOL b



Blue = SOL a

Lilac = SOL c



Fawn = SOL p



Red = SOL d and Cream = SOL e



Usual Silver = SOL ns

Sorrel Silver = SOL os



**Chocolate Silver = SOL bs
with a SOL o friend!**



Fawn Silver = SOL ps

Cream Silver = SOL es



Red Silver = SOL ds



Usual Tortie Silver = SOL fs

Chocolate Tortie = SOL h



Sorrel Shorthair = SOS o



**Usual Shorthair kittens
would be registered as
SOS n**

Blue Tortie = SOL g



Cream = SOL e



The Somali Breed Advisory Committee acknowledges with grateful thanks all those who have contributed to this Breeding Policy.