

Savannah Goat Guide

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Preface

The objectives of this Guide are to acquaint current and prospective owners of Savannah goats with certain aspects of Savannah ownership, on-farm performance evaluation, breed history, breed importation, breed standards, and Registry requirements.

Introduction

There are five breeds of meat goats in the U. S.: Spanish, Boer, Kiko, Myotonic, and Savannah. Each breed is thought to have certain *strengths* and *weaknesses* and to have them in varying *proportions* within each breed. We have noticed that many of those choosing a breed of goat do so, in part, by ‘selecting against’ *perceived negative traits* rather than ‘selecting for’ *perceived positive traits*.

Contrarily, Savannah owners seem to accent the positive aspects of their animals, citing good fertility, excellent mothering ability, good rates of gain, parasite resistance, desirable carcass qualities and year-round breeding. Experienced Savannah owners repeatedly cite reproductive efficiency (highest litter weaning weights/weight of doe) as the *most economically valuable trait of the breed*; see References (Payne, 2010).

On-farm performance evaluation: why and how

Very few herds of any breed are evaluated via on-farm performance testing programs even though such information is necessary to make rapid improvements in genetic quality—and enhance profitability. Dr. Ken Andries, KY S U-Frankfort, conducts herd evaluation programs for meat goats of any breed. The program is free to all enrollees in any state, and only he and the owner, will know the results. Upon request to Kenneth.andries@kysu.edu, he will send you the blank forms and you send him kid weights and other data. Thereafter, he will provide you a *ranking* of the does, from best to worse, based on their litter weight production. Sires are evaluated by documenting the performance of their offspring.

With this information, any owner can make more rational retention and culling decisions and thus increase the genetic quality of his herd over time. Such record-based decisions are almost always superior to decisions made only on the basis of visual appraisal of an individual and his/her immediate ‘kinfolks’. If logistically possible, Savanna owners should participate and encourage maximum participation by others in performance test-

ing. Indeed, this is the only way for the breed to make sustained progress. See References: Pinkerton, 2010.

Origin of the Savannah breed

Savannah goats were initially developed on South African brush-lands at the D. S.U. Cilliers Stud beginning in 1957. Mr. Cilliers, *arbitrarily decided to select for all-white goats*. With later encouragement and guidance from Dr. Quentin Campbell, the Cilliers selection program emphasized hardiness and survivability (adaptability) above all else. Efficient red meat production from an arid, brush environment requires reproductive efficiency and proper body conformation.

Selection was made from indigenous populations of ‘bush goats’ of various coat colours and mature sizes. (For a detailed description of Savannah breed development, see Lubbe Cilliers and Quentin Campbell interviews on the NASA website, www.northamericansavannahassociation.com). In late 1993, Mr. Cilliers and other interested breeders formed the Savanna Goat Breeders Society (Association) and developed Breed Standards (see website above).

Note that the same basic population of bush goats was also used earlier by Eastern Cape breeders for creation of the Boer Goat Breed and Association in 1959. Their selection criteria included an emphasis on red heads/white bodies, desirable conformation, and fecundity, as well as traits such as ‘roman nose’, horn shape/set, etc. Boer goat Show Ring results probably influenced breed development more noticeably than did the “survival of the fittest” strategy adopted by Lubbe Cilliers for his Savannah goats on his Vaal River holdings in the North Cape. Dr. Campbell’s counsel was to *focus on functional and economically valuable traits rather than on “fancy points”*. One may hope that the Savannah Society maintains these foci.

Savannah and Boer goat (and Kalahari Red) breeds were selected, and developed, from the *same* populations of indigenous bush goats (a variety of solid colours from white to red and black as well as many speckled and spotted colour patterns. Most were horned, but horn characteristics varied a great deal). These selections took place over different time spans and for different purposes. Thus, the selection criteria used to create these breeds were different in several respects, and, over time, these differences have led to three recognizable breeds, each with distinctive colour patterns, and possible differences in reproductive efficiency, growth rate, and mature frame size.

Insofar as is currently known (2011), only one herd of South African Savannahs is currently being production-tested. U. S. breeders of Boers and Savannahs have also been, to date, reluctant to undertake performance-testing programs. The lack of commitment to performance recording in the North American meat goat industry is precisely why NASA

encourages on-farm testing programs. Savannahs could be **the** “performance breed”, but *only* if individual breeders become committed to this principle of breed improvement.

Readers are directed to References: Pieters, et al, 2009, a South African field study showing, among other things, morphometric and coat colour comparisons of these breeds. These representative samples found 75% of Boers to have white bodies with red heads while the other 25% had either speckled heads or a red spot on the body. Kalahari Red goats were primarily red coated with a white or black spot on 15% of the population, while (in this sample) all the Savannahs were white-only. Savannahs in the study were a bit smaller in height, length, depth, and heart girth, but not statistically significantly so. Savannahs were, however, significantly shorter in hock length and had somewhat narrower heads and lesser pelvic width, but not pelvic length.

Because of the well-known principles of population genetics, *individuals* within modern groups or breeds (as defined) will *occasionally* show reversions to the original indigenous stock. Such is the case when Savannahs, in Africa, Canada, and the U. S. show red heads (5-7% incidence). Similar instances of reversion in the U. S. find Boer goats that do not have red heads but rather to have red or brown speckled heads and/or red spots on white body areas. There are also some ‘all red’ and dappled Boer goats in Canada and the U. S. (No Kalahari Red goats have been imported to Canada or the U.S to date).

Importations of Savannah goats

In late 1994, Mr. Jurgen Schulz imported the first South African Savanna goats via the Florida Quarantine Unit and thereafter to a Lampasas, Texas ranch for further quarantine. The surviving herd was auctioned in December 1998 to buyers from several states. The *only* documentation provided buyers was a “Dear Customer” cover letter indicating that the animal had originated “from Mr. Cilliers’ farm in South America”, along with a statement that “these were the only Savanna(h) goats in the country”. The lack of an U. S. Registry at that time made it very difficult to accurately trace, via valid pedigree linkages across many generations, all of the ‘white goats’ sometimes purported to be full blood Savannahs descending from these few animals.

In 1999, Brian and Katie Payne, Keri-Rose Livestock and Consulting, from Scandia, Alberta, Canada imported embryos from the Cilliers Stud as well as from Kotze and Nelmann, pioneer Savanna breeders. The resulting kids were later moved to North Carolina. All these Savannahs were sampled for DNA testing at the Saskatchewan Bovine Blood Typing Laboratories prior to the move. Shortly thereafter, certificates of registration for the original embryos were received from the South African Stud Book. Kerry-Rose kept detailed breeding records of selected descendants to enable subsequent registrations in the U. S. as circumstances permitted. Some Savannahs were sold to buyers who then registered them if, and wherever, they chose.

The Keri-Rose stock was later relocated to Mr. Chris Glynos' farm at Bethlehem, CT as a partnership; still later about half of this herd returned to Alberta where it now totals over 150 head. It has been enrolled in the on-farm performance-testing program conducted by Dr. Ken Andries since 2009. (The Glynos herd was later dispersed, mostly to TN, KY, and OK).

Other Savannah genetic material imported from South Africa came to Canada under the auspices of DNAfrica whose objective was to market a variety of South African seed stock by selling Savannah embryos and their progeny. Ms. Dennise Peterson of Hanford, CA and Mr. David Hagen of MN worked with Canadian importers to implant recipients and produce a number of Savannahs. (Nothing is known of the fate of the Hagen goats or Canadian-born Savannahs,). In 2002 or so, Ms. Peterson established the World Wide Savanna Goat Association to register her goats and, later, others. This registry is now known as the World Wide Sheep and Goat Archives. Sometime later the Peterson goats were sold and dispersed widely.

The fourth source of full blood Savannahs came from South Africa to Australia as frozen embryos in 2006. After quarantine in Australia, first generation South African embryo-derived progeny, went via the NYC-area USDA Quarantine Facility for 30 days prior to being moved to Mr. Kenneth Mincey's farm near Cummins, GA in early August 2010.

In mid October, an embryo transplant program was done using four bucks and 14 of 17 does (2 does did not produce eggs due to mild uterine infections and 1 was unaccountably pregnant). Their South Africa and Australian documents enabled these bucks and does, and their progeny, to receive certificates of registration from the North American Savannah Association (NASA). Subsequent embryo transplants from these animals and/or their progeny were undertaken fall 2011 and 2012. In fall 2013, family health concerns and business circumstances led to the sale of the entire Mincey herd to Glen and Marjorie Edwards, owners of the Indian Territory Farms, Comanche OK (a previously existing small full blood Savannah enterprise featuring Mincey and other full blood lines, plus crossbreds).

These four sources of imported Savanna goats have produced the only animals originally permitted in the NASA herd-book as full bloods (provided, of course, that the individuals were adequately documented).

Savannah Breed Standards

Breed Standards are written by breed founders and may be altered by the breed Association as needed. Such Standards commonly describe desirable morphometric (visually expressed) characteristics *acceptable to a majority of the membership*. Animals lacking in one or more such characteristics may be denied registration papers or assigned a different status.

Rather than deny full blood registration to an “off-type” female (i.e., one that does not conform *fully* to the Breed Standard in terms of coloration), NASA, at its inception, elected to use the term, *flock*, to designate such females, in accordance with the Boer and Savannah breed development process in South Africa. Using this procedure, plus pedigree tracking and animal evaluation, American and Canadian breeders can, over time, remove (breed out) non-conforming animals from the Savanna gene pool and thus achieve closer “breed uniformity”.

A fully pigmented white goat was, and is, the NASA’s *ideal* Savanna. Note, however, that flock-designated females remain in the breeding population and may be used to produce ‘upgraded’ progeny, but “flock-designated” males cannot be used as sires.

FYI, *in South Africa*, Boer, Kalahari Red, and Savannah animals that are lacking in one or more ‘acceptable characteristics’ are designated as **flock quality** rather than as **stud quality**. Flock goats are retained in the breed’s gene pool by owners but are not accepted for official Show Ring evaluation and thus cannot be accepted as “stud quality” animals. Unacceptable morphometric characteristics, such as head type, horn shape, teat structure, skin pigmentation, hair colour pattern and site-specific skin colour (ears, under tails and anus) are, by fiat, used by South African breed Association Inspectors to reject animals seeking “stud quality” designation.

However, if a female is determined to be of *flock quality*, she can be retained in the herd with the intention that breeding her to a ‘stud quality’ buck may create offspring which can be inspected and receive ‘stud quality’ designation. Note that no males are allowed to breed in full blood herds unless and until they have been designated ‘stud quality’ by an Association Inspector.

This method of identification and selection of ‘stud and flock’ animals by South Africa Breed Association Inspectors means that all three breeds of goats were initially developed without the use of centralized Breed Registries to maintain pedigree information. The program rationale was that visual appraisal by an Inspector, along with Show Ring evaluation activities, would ensure that the genetic stability of the given breed would be demonstrated in successive generations via ongoing adherence to an arbitrary Breed Standard based on physical appearance alone. *No attention was given to performance capability, then or now.*

Readers should also note that any given Breed Association or Registry, in any country, *empowers itself* to include, or exclude, any given trait—for instance, hair colour or colour pattern or colours at specific body locations, or teat numbers, etc. Such decisions may, or may not, be relevant to breed productivity. (Readers should recognize the reality that goats of any breed exhibit *the same colour, post- slaughter*; they should also recognize

that goat meat consumers rarely, if ever, know the breed of the goat that they consume, *nor do they care to know*).

Registration of Savanna goats

Requirements for registering animals with the North American Savanna Association, including costs, may be obtained, via a Registration Packet, from Associated Registries, PO Box 231, 305 Lincoln, Wamego, Kansas 66547 or by calling 785-456-8500 or faxing 785-456-8599. The email address for Associated Registries is asregistry@gmail.com.

When the North American Savanna Association was established, the South African terminology described above was used in our Registry prose. Accordingly, NASA has strict rules for registration of *full blood* animals. Such males and females are limited to those *known to be (unbroken) lineal descendants* of South African Savannahs. The term, flock, is used on *registration applications to signal the fact that the female in question is not colour correct*.

In addition to registering full blood Savannahs, NASA also has a provision for “grading up” goats to attain the status of *purebred animals* (designated as **North American Savannahs**).

In order to facilitate its rules, NASA maintains two herd-books. The first is the full blood herd-book that contains animals that can demonstrate a proven relationship, via an unbroken chain of pedigree information indicating genetic relationship to a common South African foundation population, along with all transfers of ownership. Such animals receive registration certificates denoting full blood status.

The second book is the purebred herd-book that is maintained to accommodate those meat goat owners who want to utilize NASA full blood bucks in order to upgrade their herds to *purebred status* (North American Savannahs) via a backcrossing scheme. *Purebred* Savannahs are those *created* by backcrossing full blood Savannah bucks to Spanish, or other, does for 4 generations to produce 15/16 Savannah does or for 5 generations to produce 31/32 bucks. Both of these crosses are, by NASA definition, *purebred does and purebred bucks*. They cannot produce full blood Savannahs or become full blood Savannahs by any means.

Each female of the crossbred generations used to create a purebred is also issued a ‘certificate of registration’ in order to accurately trace the creation of the *purebred* animal. **Note that a (created) purebred buck can be used, via backcrossing, to create yet other purebred does and bucks.** But, this cannot be done *unless the buck has gone through the NASA upgrading process*. (Bucks registered with other Registry organizations cannot be used in the upgrading process unless they have DNA on file through a recognized laboratory and 5 generations of pedigree is provided). Full blood Bucks and Does from other

registries are tracked separately than those who have verifiable South African ancestry. Does described as “full blood” from other registries are also accepted into the NASA full blood herd book provided that they have DNA on file and provide 5 generations of pedigree information.

Note also that *percentage females (Savannah crossbreeds) with flock designations* can also be upgraded to purebred status via backcrossing, whether the offending (unacceptable) characteristic is ‘disappeared’ or not during the generational upgrading process. However, a 15/16 Savannah female must be white and fully pigmented to enter the Registry. By Association fiat, American purebred bucks are the 31/32 progeny of a colour-correct 15/16 females and a full blood NASA sire.

NASA bucks are always (only) white and fully pigmented; acceptable pigmentation may vary from black to grey to brown (but not pink! - under the ears and under the tail). The small percentage of purebred or full blood Savannah bucks born with red heads are *not eligible* for registration in NASA and, accordingly, *cannot be used in an upgrading program or to produce full blood progeny*. By Association fiat, red headed males are barred from registration by NASA in order *to promote colour uniformity of the breed, and for merchandizing purposes only*. *Caveat*: there is no scientific evidence that hair colour of the head (or any other body part) is either positively or negatively related to any performance trait in Savannahs, or in any other breed of goats.

NASA’s goal

NASA’s goal is to improve over time its Breed Standards so as to promote the development of Savannahs that will have superior productivity across various environments. To achieve this objective, NASA members should be committed to selecting for *only* those performance traits that generate higher income to commercial meat goat enterprises. They are also encouraged to adopt, and sustain, certain principles in their breeding program, to wit: enrol all animals in a Performance Test to identify superior breeding stock (if logistically possible in given circumstances); select for higher reproductive efficiency (higher litter weaning weight/weight of doe/year); and maintain breeding herds in forage dominated environments.

NASA will, at the discretion of the Board of Directors, modify, or eliminate, from the Breed Standard any description of desirable or undesirable traits that does not have obvious benefit for economic productivity (but only if requested by those members who performance-test and thus have ‘proof’ of need-to-change them). Such modifications would necessitate changes in current registration procedures and paperwork. As always, any change engenders certain costs that must be recovered via the fee structure.

Selected References

Payne, Brian H. 2010. Observations on Savanna Goats: History, Importation, and Breed Characteristics and Utilization. Goat Rancher Magazine.

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