

Senepol Cattle

History and Development



From the Director

This report is part of the continued research effort of the Agricultural Experiment Station of the College of the Virgin Islands into improving the agricultural resources of the Virgin Islands. The beef industry, including the development of Senepol cattle, is one of the important agricultural enterprises under full-time study.

The development of the Senepol cattle breed was begun in the early 1900s, but due to a lack of scientific characterization and performance evaluation, the animals were not commercially exploited.

In order to relieve this situation, efforts were made to organize the islands' Senepol breeders and initiate a research program that would open the door for the growth of this industry.

In April 1976 at my invitation, federal officials from the U.S. Department of Agriculture visited St. Croix to appraise the situation and make recommendations to begin this process.

A four-point program was suggested: (1) develop a breed registry to verify the purity of the breed and establish breed standards; (2) compare the Senepol cattle performance against other breeds; (3) characterize the purebred Senepol via a sound

performance testing program; (4) develop exportation procedures including a quarantine station.

Since that time, major progress has been made including the incorporation of the Virgin Islands Senepol Association of St. Croix. The Agricultural Experiment Station has become a contributing member of the S-10 Research Project in Breeding Methods for Beef Cattle in the Southern Region. A cooperative breed evaluation project has been started at Brooksville, Florida. Dr. Harold Hupp, has joined the Agricultural Experiment Station and has begun full-time research into the characterization and performance of the breed. And, a quarantine station has been set up by the V.I. Department of Agriculture.

Accomplishments of the first two years effort include the exportation of twenty-two Senepol cattle on June 23, 1977. This is the first exportation ever of the breed. Semen exportation has also begun.

The Agricultural Experiment Station of the College of the Virgin Islands is pleased to assist the Senepol breeders in their efforts to make a significant contribution to the improvement of the beef industry in the Virgin Islands as well as other tropical and subtropical regions. We look forward to continued cooperative efforts in achieving this goal.

Darshan S. Padda, Director
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Agricultural Experiment Station
College of the Virgin Islands
St. Croix, U.S. Virgin Islands

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History and Development of **Senepol Cattle**

by H. D. Hupp



ABOUT THE AUTHOR: Dr. Hupp is the animal scientist for the Agricultural Experiment Station, College of the Virgin Islands.
COVER PHOTOS: Senepol Cattle in typical environments on the island of St. Croix. Photos courtesy of the Virgin Islands Senepol Association.

History of Modern Cattle

It is believed that all present-day cattle originated in Asia, the theorized birthplace of the subfamily Bovinae (Bisschop 1937). However, the cattle that are indigenous to the modern world are descendants from three base stocks: (1) Hamitic or Egyptian Longhorn cattle, (2) Brachyceros or shorthorn cattle, and (3) Longhorn Zebu cattle.

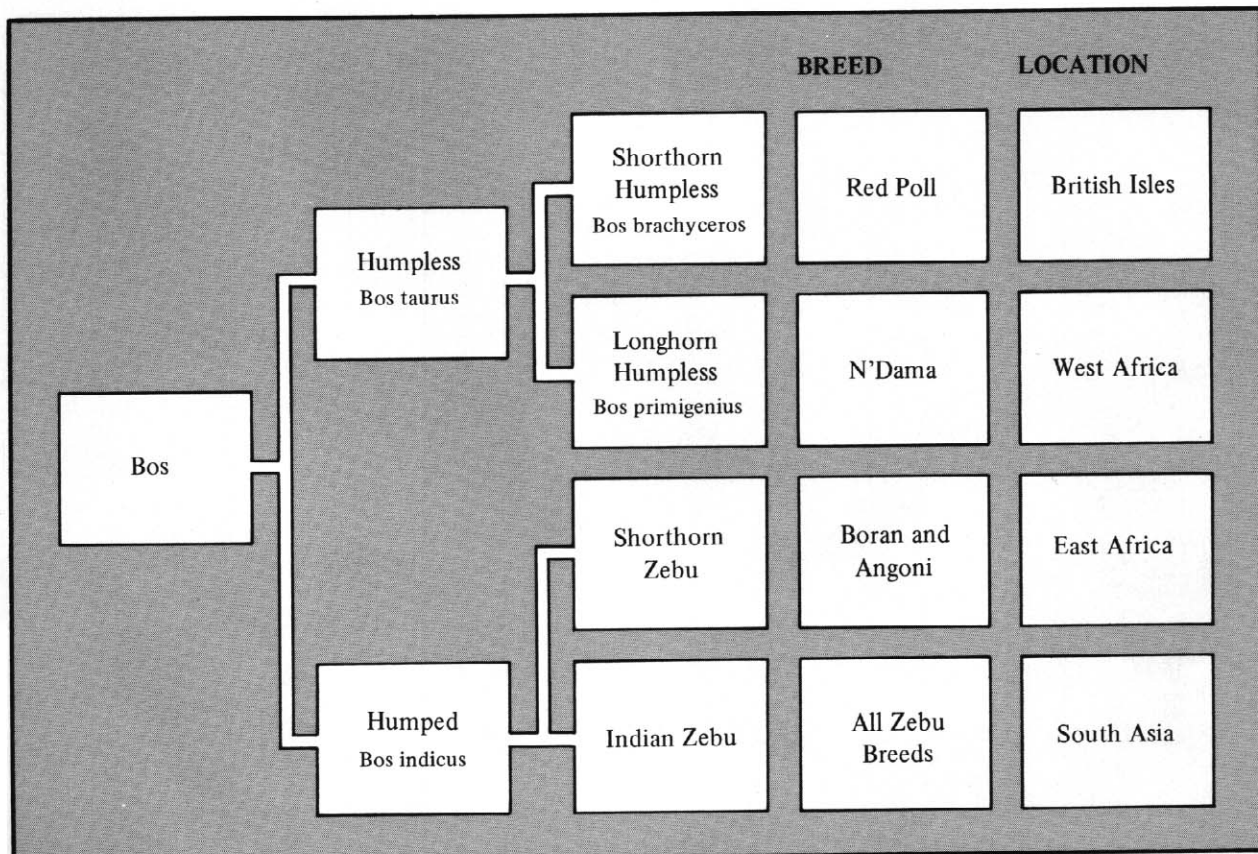
The three parent stocks can be put into two distinct classes: humped, *Bos indicus*, and humpless, *Bos taurus*. Humped cattle, which includes the Zebu stock, have a muscular or muscular-fatty-tissue hump in the cervico-thoracic or thoracic region. This hump has been associated with the ability to survive long drought periods (Epstein and Mason 1971). Humpless cattle are

further divided into (1) longhorn humpless, *Bos primigenius*, and (2) shorthorn humpless, *Bos brachyceros* or *Bos longifrons*.

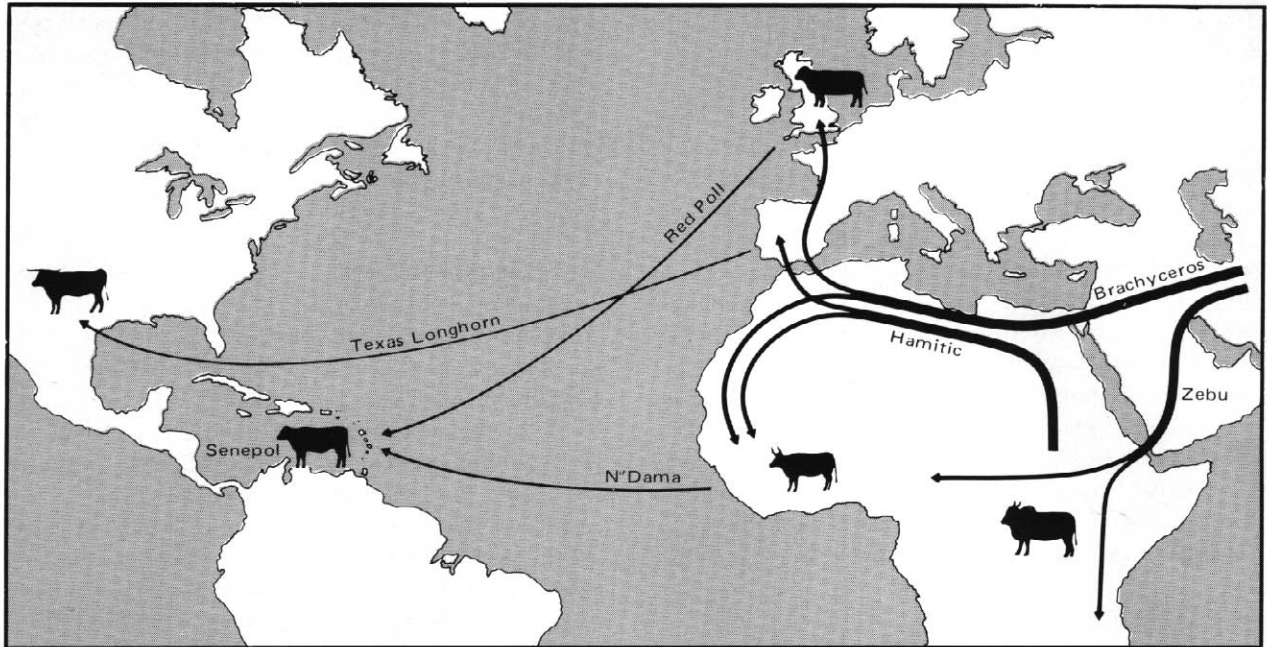
The Senepol cattle breed of the Virgin Islands is a direct descendant of *Bos taurus* with crossbred characteristics of both longhorn and shorthorn humpless cattle. The ancestry of the Senepol breed is a cross between the Red Poll, which was derived from the *Brachyceros* stock, and the N'dama, which was derived from the Hamitic stock.

EGYPTIAN LONGHORN CATTLE

The longhorn humpless cattle were bred in Northern Africa several thousand years before the shorthorn humpless and humped cattle were introduced into Africa. The Hamitic people and the Hamitic cattle appeared simultaneously about 3000 B.C. on the Tassile-N-Ajjes plateau in the southern part of the Algerian Desert (Epstein and Mason 1971).



Origin of the Beef Cattle (Adapted from Rouse 1970b and Bisschop 1937)



Migration of the Ancestors of the Senepol Cattle

The *Bos primigenius urus* has been divided into only three local races; one each of Asia, Africa, and Europe. The last of this base stock lived in Europe until 1627 (Epstein and Mason 1971).

At the end of the neolithic era, the Hamitic people were forced to migrate westward along the northern coast of Africa taking their cattle with them. At Gibraltar the migration split into two groups. One group went north into the Iberian peninsula where later descendants, such as the Texas Longhorn, were taken to the Americas. The other group moved south and west into open country along the Gulf of Guinea between French Senegal and northern Nigeria becoming the ancestor of the N'Dama cattle. In this way the Hamitic cattle finally disappeared from Egypt (Bisschop 1937).

Hamitic cattle had sufficient size, 1.5 meters (4.8 feet) tall and 1.7 meters (5.6 feet) long, to make good draft animals. However, the cows produced little milk. These cattle were primarily horned, though there were instances where the cattle were without horns or polled (Boston 1963). Most of the color patterns present in today's cattle were present in this ancient stock.

The N'Dama Cattle

The Fouta Djallon plateau in Guinea is the origin of the N'Dama cattle. It is not clear if the N'Dama are descendants from the Hamitic Longhorn cattle only

(Mason 1951; Epstein and Mason 1971) or if they are a result of a Hamitic Longhorn x *Brachyceros* cross (Johnston 1906; Curson and Thornton 1936). The latter theory is based primarily on physical size and not morphological differences. The N'Dama cattle are also called Gambia Longhorn, Futa, Futa Longhorn, Malinke Boenca, and Mandingo (Mason 1951; Epstein and Mason 1971). Today, N'Dama cattle are found in Portuguese Guinea, Chad, Nigeria, Congo, Liberia, Sierra Leone, Mali, Ghana, and Senegal (Rouse 1970b; Epstein and Mason 1971).

The N'Dama have a short broad head and broad muzzle. The horns curve up and outward and vary in length averaging 60 centimeters (24 inches) long. In Sierra Leone, Portuguese Guinea, and surrounding areas, the N'Dama cattle have had instances of being polled or scurred, that is loose-cartilage (Epstein and Mason 1971). The compact body has a thick, deep neck and a straight, well fleshed, wide back from the withers to the tail head. The hindquarters are fairly deep and well muscled. The dewlap and umbilical fold are poorly developed (tight). The legs are short and fine boned (Epstein and Mason 1971).

The color varies from fawn to dark red with darker extremities and lighter underside. The common colors are light to dark fawn, gray, dun, light red, chestnut, and red with black head. The dun animals have a dark dorsal stripe, dark circles around the eyes, and a light

ring around the dark muzzle is common (Stewart 1937; Ross 1944). White can be found on the stomach and switch of the tail.

A valuable characteristic of the N'Dama is their high degree of nonspecific resistance to trypanosomiasis and piraplasmosis. They also have a marked resistance to tick-born infestation, and they acclimatize fairly well to tropical rain forest climate. The N'Dama have good beef conformation and sufficient size to make good draft animals. However, the cows are poor milkers averaging only about 450 kilograms (992 pounds) per lactation (Mason 1951; Epstein and Mason 1971). Epstein and Mason (1971) report N'Dama mature in four to five years, averaging 250 to 300 kilograms (550 to 660 pounds) in Mali and 250 to 300 kilograms (550 to 660 pounds) for females in Nigeria and 300 to 360 kilograms (660 to 794 pounds) for males in the Faulkner area of Nigeria.

BRACHYCEROS OR SHORTHORN CATTLE

Shorthorn cattle, *Brachyceros*, began to migrate from Asia to Africa and Europe about 2200 to 1780 B.C. The *Brachyceros* cattle entered Africa through the Isthmus of Suez. By 1700 to 1580 B.C. shorthorn cattle were the dominant cattle of Egypt, finally replacing the Hamitic cattle completely by 1580 to 946 B.C.

In time the *Brachyceros* cattle were also displaced from Egypt and followed the same westward migration route as the Hamitic cattle. Again, the migration split at Gibraltar with one group going north into Normandy becoming the ancestors of the Jersey, Guernsey, and Red Poll cattle. The second group migrated south and west into the unoccupied, infested *Glossina* jungle along the Gulf of Guinea (Bisschop 1937, Epstein and Mason 1971).

The *Brachyceros* cattle were considerably smaller than the Hamitic cattle, lean with well developed ud-

ders, and more resistant to adverse environmental conditions. Their forequarters were better developed than the hindquarters (Epstein 1937). The shorthorn cattle that evolved in the harsh African environment are, consequently, smaller today than their European relatives (Epstein and Mason 1971).

The Red Poll Breed

Red Poll cattle were developed as a dual-purpose breed in the Norfolk and Suffolk counties of England from *Brachyceros* stock. The Norfolk cattle were horned and considered an excellent beef cattle. The Suffolk cattle were polled and fair as beef cattle, but they were considered the best milkers in England. The Red Poll originated by crossing these two pure strains of cattle about 1815. In 1862 this cross was recognized as a breed by the Royal Agricultural Society. By 1888 the Great Britain Red Polled Society was organized. Later the name was changed to Red Poll to avoid implications of dehorning (Rouse 1970a; Anderson and Kiser 1966).

As the name implies, this breed is polled. Their red color varies from light red to almost black. Too light or too dark a color is undesirable. The switch of the tail may be white, red, or mixed. White is also allowed behind the navel. White anywhere else on the body makes the animal ineligible for registration.

The Red Poll is a medium-sized breed with moderate flesh. The cows weigh from 544 to 680 kilograms (1200 to 1500 pounds) and produce over 3400 kilograms (7500 pounds) per lactation. Mature bulls weigh from 816 to 907 kilograms (1800 to 2000 pounds). The Red Poll conformation approaches that of the angular dairy type but is more thickly fleshed. The dewlap and umbilical fold are tight.

Today the breed can be found throughout England and other parts of the world, particularly southern Africa, North America, and the dairy area of Australia. The Red Poll has only a limited influx into Central and South America.



Courtesy of the Virgin Islands Senepol Association



Courtesy of the American Red Poll Association

Early N'Dama base stock on
St. Croix (above). Typical
Red Poll bull.



Courtesy of Virgin Islands Senepol Association



Courtesy of Virgin Islands Senepol Association

Development of Senepol Cattle

The development of the Senepol cattle breed was started in the early 1900s by crossbreeding Red Poll and N'Dama cattle. The breed was developed to meet the specific requirements of the tropical Caribbean climate, because most cattle imported into this region from temperate zones with greater production potential had broken down due to heat and nutritional stress.

The Senepol breed combines the N'Dama characteristics of heat tolerance and insect resistance with the extreme gentleness, good meat, and high milk production of the Red Poll.

In 1880 George Elliot, Longford Estates, imported the first sixty heifers and two N'Dama bulls. This became the nucleus of the N'Dama cattle on St. Croix. By 1889, Henry Christian Nelthropp, Granard Estates, was one of the largest purebred N'Dama breeders with 250 head, which he maintained as purebreds.

Nelthropp's son, Bromley, of Estate Butzberg wanted to develop a strain of cattle that would combine the characteristics necessary for good production in the tropical Virgin Island environment. In 1918 Bromley purchased a Red Poll bull, Captain Kidd, from the Trinidad Ministry of Agriculture. The bull was brought from England in 1914 to improve the beef industry in Trinidad. However, Captain Kidd's calves were polled while large-horned work oxen commanded the premium price. On St. Croix the bull was renamed Douglas and was used in a crossing program with N'Dama females (Allred 1963; Gaztambide Arrillaga 1955; Nelthropp 1952; Rouse 1973).

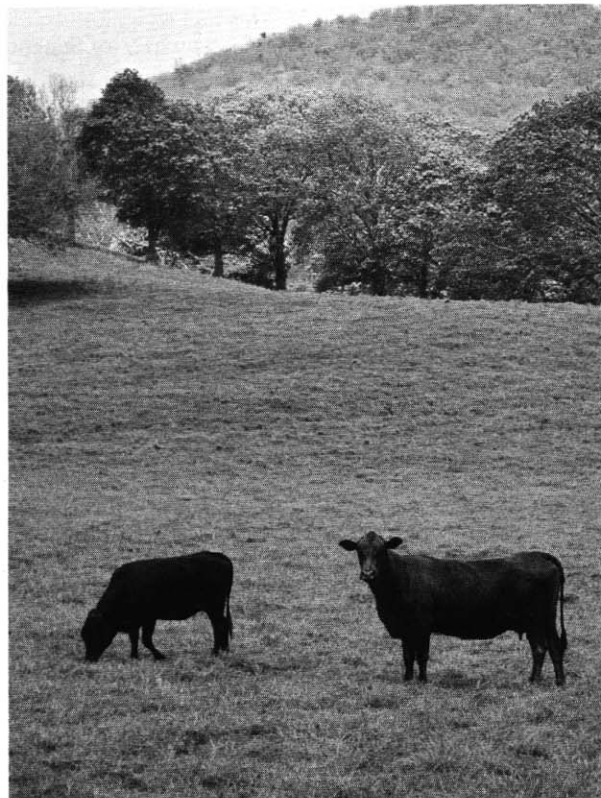
Douglas and two of his sons were used as herd sires. In 1942 Bromley Nelthropp purchased from Estate Tutu, St. Thomas, another Red Poll bull, Doctor, and two locally born purebred Red Poll cows. From the midtwenties on, Bromley sold or exchanged his crosses to other local N'Dama breeders, and later bought or exchanged polled heifers from bulls that had been previously owned by him. (Nelthropp 1952; Rouse 1973).

Bromley Nelthropp selected for the following qualifications: (1) red color, good conformation, and early maturity, (2) no horns, (3) gentle, pet-like disposition, and (4) definite heat tolerance. By 1949 his Senepol herd was completely dispersed to local breeders, who have continued to exchange breeding stock.

The continued development of Senepol cattle has been carried on by local cattlemen. In the early 1950s one breeder crossed Santa Gertrudis bulls on Senepol cows. The crosses did not prove satisfactory, and the use of Santa Gertrudis bulls was discontinued after two years. These crosses were upgraded to 7/8 or more Senepol and reintroduced into the purebred herd. It is probable that other breeders also did Senepol upgrading to local stock while selecting for the same qualities Nelthropp had.

The Senepol cattle have been called Nelthropp Cattle, Cruzan Breed, and St. Croix Cattle. The Senepol trademark was registered in Puerto Rico and the United States in 1954 as "St. Croix Senepol." The Virgin Islands Senepol Association of St. Croix was chartered on October 12, 1976.

Senepol cattle are distributed throughout many islands of the Lesser Antilles. In June 1977, the first group of twenty-two Senepol cattle was sent to the U.S. mainland.



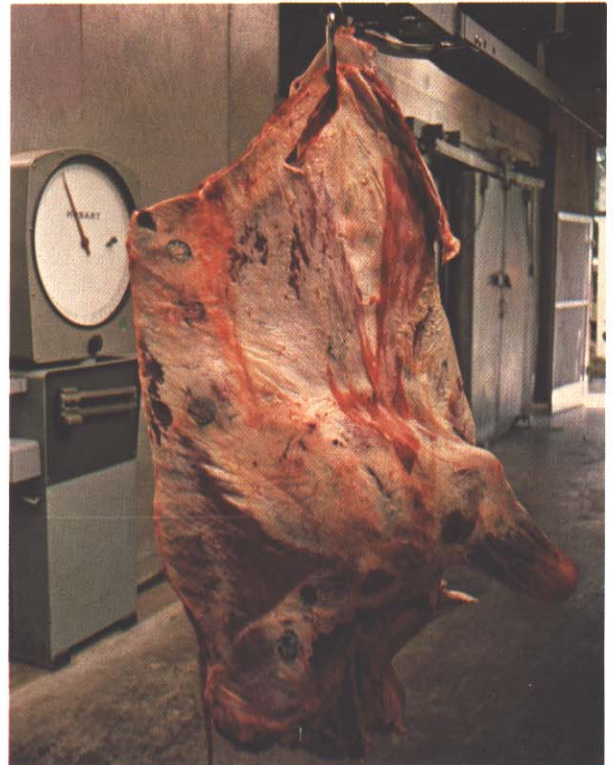
Typical Senepol bull (upper left) and cow and calf (left). Cow and calf grazing at midday.

Courtesy of Virgin Islands Senepol Association



Courtesy of Virgin Islands Senepol Association

Young Senepol heifer (above). Forequarter of Senepol carcass.



Courtesy of Virgin Islands Senepol Association

Senepol

Characteristics

The Senepol cattle resulting from the crossing of the Red Poll and N'Dama cattle breed true and show uniform characteristics. Senepol cattle resemble both parent stocks, with Red Poll characteristics dominant. This breed is predominantly polled, though scurs are present. The coat color varies from light tan to dark red. The switch of the tail may be red, white or mixed. White other than on the switch or on the underside disqualifies the animal for registration. The muzzle is fairly broad with open nostrils, and its color is cream or gray.

The Senepol is a medium-sized beef breed with fairly good beef characteristics. The forequarters are more developed than the hindquarters. The dewlap and umbilical fold are fairly tight. The hide is thick,

pliable, and fairly loose with a short, fine hair coat. The eyes are moderately large and full, denoting alertness. Medium-sized ears are carried out and upward.

Bulls have a long, masculine neck with a moderate crest. The withers are less defined than those of the cow. Shoulders are flashed. The back is straight from the withers to the tail head. The thighs are flat, trim, wide apart, and well cut between the twist. The testicles are uniform and normal in size. Bulls have a long, deep, wide barrel with a developed heart girth. Legs are squarely set and clean and have sufficient bone to minimize leg and foot problems.

Cows have a refined feminine head. The withers are fairly sharp and defined with some flesh. The neck is long and clean, blending into the shoulders. The back is clean and straight with a strong loin. The legs are medium length with a beef frame to allow sufficient underpinning. The thighs are not thick and plump and do not interfere with the udder attachment. The Senepol have a strongly attached medium-sized udder. The udder is symmetrical and moderately deep.

Summary Of Senepol Cattle Characteristics

Polled	<ul style="list-style-type: none"> • Absence of horns or presence of scurs
Heat Tolerance	<ul style="list-style-type: none"> • Will graze throughout the hottest part of the day • Are not stressed from working during the day • Can survive several days without water
Temperament	<ul style="list-style-type: none"> • Naturally gentle, intelligent, and responsive to handling
Maternal Ability	<ul style="list-style-type: none"> • Will calve unassisted on tropical range conditions • Calves average 29 to 36 kilograms (65 to 80 pounds) at birth • Produce 11.3 kilograms (25 pounds) of milk per day • 268-day lactation
Fertility	<ul style="list-style-type: none"> • Calve first at 2 to 3 years, 12-month intervals thereafter • 13 to 15 calves per lifetime of heifer • 95 percent calf crop at weaning
Production	<ul style="list-style-type: none"> • Early maturity compared to native tropical cattle • 236 kilograms (500 pounds) at eight months • 364 to 386 kilograms (800 to 850 pounds) at 12 to 14 months

Breed

Performance

At present, limited data is available on the overall performance of Senepol cattle. The following initial breed characterization is derived from records of two of the larger Senepol breeders and personal observation and communication.

The breeders characterize their breed as follows. To facilitate a year round beef supply, producers have two or three calving seasons per year. The cows calve unassisted under pasture conditions with 95 percent calf crop at weaning. The calves will average 29 to 36 kilograms (65 to 80 pounds) at birth, 227 kilograms (500 pounds) at eight months and 363 to 386 kilograms (800 to 850 pounds) at twelve to fourteen months, when they are usually marketed. Dairy records on Senepol cows are also limited. Under dairy conditions, Senepol cows average 11.3 kilograms (25 pounds) of milk per day for an average of 268 days.

Sires will reach mature weights of 771 to 907 kilograms (1700 to 2000 pounds) at three to four years under pasture conditions. Mature cows will average

500 to 544 kilograms (1100 to 1200 pounds). Heifers will calve first at two to three years of age and at about twelve-month intervals thereafter. Eighteen-year-old cows have been known to raise average and above average calves. Both cows and bulls are docile and easy to manage. The Senepol are extensively grazed on primarily native pangola grass, guinea grass, and elephant grass with minimal supplementation. These animals graze during the hottest part of the day and are able to go without water for several days at a time.

Preliminary research has resulted in weight data on 1453 head of Senepol cattle. To date 590 records have been processed through a Beef Cattle Improvement Association program. Of the 590 head having adjusted 205-day weights, 364 were purebred Senepol with adjusted weights of 225 kilograms (497 pounds) at 226 days. The remaining 226 head were Senepol x Charolais cross calves weighing 247 kilograms (546 pounds) at 221 days. Three hundred twenty-one weanlings averaged 296 kilograms (652 pounds) at 255 days. Thirty-seven yearling bulls had unadjusted weights of 270 kilograms (596 pounds) at twelve months. One hundred forty heifers weighed 268 kilograms (591 pounds) at twelve months. One hundred five breeding heifers averaged 376 kilograms (828 pounds) at fifteen months. Ten mature bulls weighed 861 kilograms (1899 pounds) averaging seven years old, and 250 mature cows weighed 423 kilograms (932 pounds) averaging 6.7 years old.

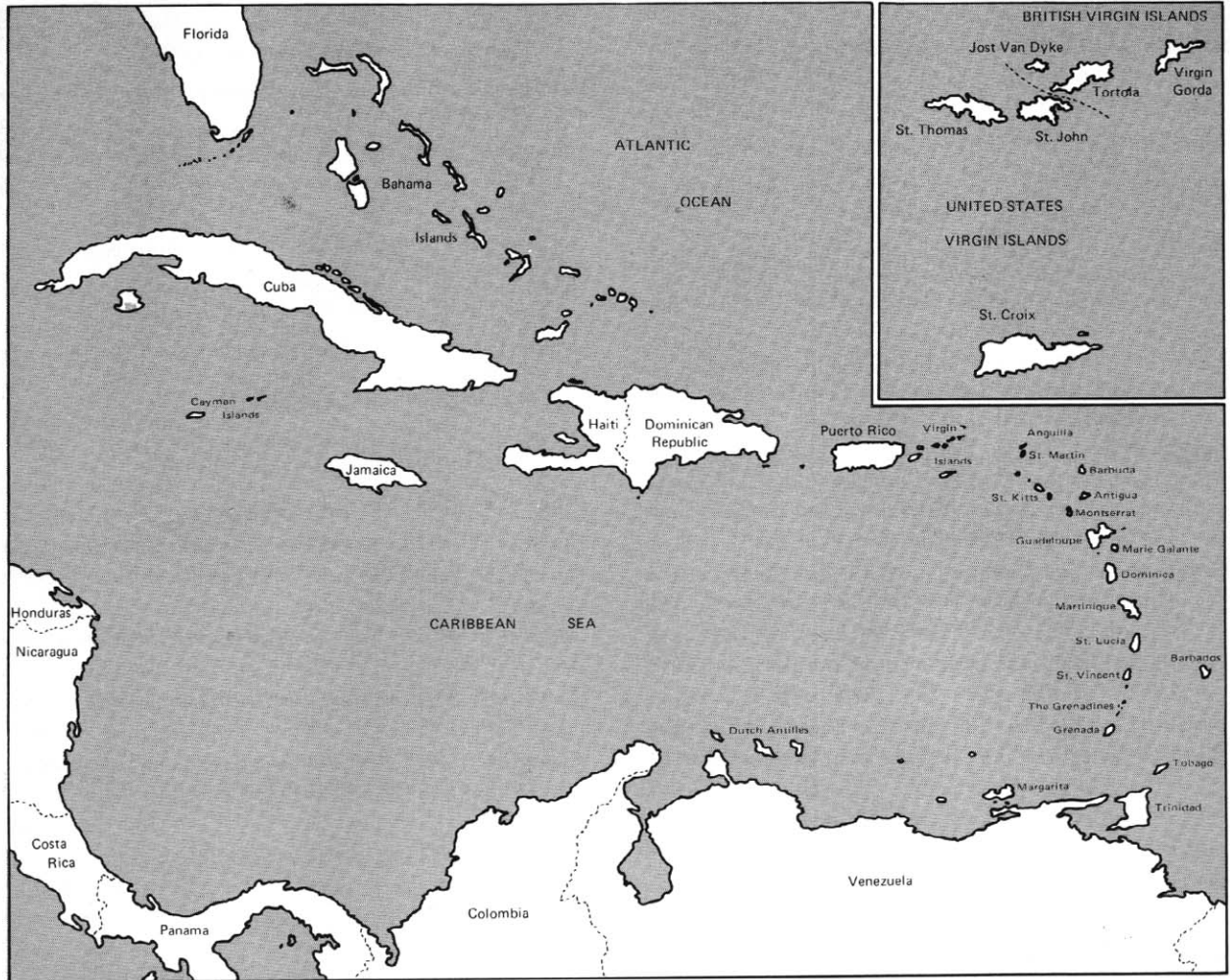


Herding cows and calves in the fall on St. Croix.

Courtesy of Virgin Islands Senepol Association

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U.S. Virgin Islands

The U.S. Virgin Islands are situated in the Lesser Antilles between 17° 30' to 18° 30' north latitude and 65° 15' to 60° 40' west longitude. The three major islands are St. Croix with 22,081 hectares (54,563 acres), St. Thomas with 7,278 hectares (17,984 acres), and St. John with 5,194 hectares (12,835 acres). The Virgin Islands are located approximately 1930 kilometers (1200 miles) southeast of Miami, about 2415 kilometers (1500 miles) south of New York, and about 64 kilometers (40 miles) east of Puerto Rico.

The rainfall an area receives depends primarily on the islands topography and continual easterly trade

winds. The eastern portion of St. Croix receives only 51 to 76 centimeters (20 to 30 inches) of annual rainfall while the western portion of the island receives 127 to 152 centimeters (50 to 60 inches) annually. St. Thomas has 102 to 127 centimeters (40 to 50 inches) of annual rainfall in the central portion of the island while the east and west ends receive about 90 to 102 centimeters (35 to 40 inches) annually. The monthly daytime average varies 3°C (6°F), from a low of 28°C (83°F) in January and February to a high of 32°C (89°F) in July, August, and September. Nights will average 7°C (13°F) cooler than the days.

Other Reports

1. Grain Sorghum and Forage: Production and Utilization Potential in St. Croix, U.S. Virgin Islands
2. Fruits and Vegetables: Production and Consumption Potentials and Marketing Problems in the U.S. Virgin Islands
3. Profitability of Beef Production in St. Croix, U.S. Virgin Islands
4. Profitability of Dairy Farming in St. Croix, U.S. Virgin Islands
5. Profitability of Poultry Production in the U.S. Virgin Islands
6. Profitability of Hog Production in the U.S. Virgin Islands
7. Potential Returns from Goat and Sheep Enterprises in the U.S. Virgin Islands
8. Marketing Potential for Livestock Products in the U.S. Virgin Islands
9. Virgin Islands Forestry Research – A Problem Analysis
10. Prospects for Growing Grapes in the U.S. Virgin Islands
11. Okra: A Beloved Virgin (Farmers Bulletin 1)
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Agriculture Experiment Station
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