Summary

Experimentation in breeding dairy cattle for the tropics began in Jamaica at Hope Farm in 1910 with local cattle, temperate dairy breeds and the infusion of the Sahiwal (Zebu) breed.

The research results, which also influenced farmers’ operations, indicated the superiority of the grade Jersey for production and fertility, which was considered to be the result of adaptation. Thereafter, breeding inter se, a tropical dairy breed, the Jamaica Hope was established and was declared in 1952. The formation of the Jamaica Hope Cattle Breeders’ Society immediately followed.

The breed has shown a high level of productivity under wide ranging husbandry conditions. The highest yields have been above 8 800 litres of milk in 305 days.

The MOET technique of reproduction will be employed in the expansion of the breed.

Resumen

La experimentación en mejora de bovinos de leche en la zona tropical comenzó en Jamaica en la Hope Farm en 1910 con una raza local, razas de leche de zonastempladas y con la raza Sahiwal (Zebu).

Los resultados de las investigaciones mostraron la superioridad de la raza Grade Jersey para la producción y la fertilidad; que se pensó era el resultado de una buena adaptación. Más adelante, con los cruzamientos inter se, se llegó a una raza lechera de zona tropical, la Jamaica Hope, que fue reconocida y declarada como tal en 1952.

A esto siguió el establecimiento de la Asociación de Ganaderos de la Raza Bovina Jamaica Hope.

La raza ha mostrado un alto nivel de productividad en condiciones intensivas. Los mayores rendimientos han sido de aproximadamente 8 000 litros de leche en 305 días.

La técnica MOET de reproducción será empleada para la expansión de esta raza.

Keywords: Jamaica Hope, Tropical Dairy Breed, Production, Fertility, Adaptation.

Origin

Cattle were introduced to Jamaica from the time of the Spanish occupation in 1494 to produce hides for leather manufacture with beef production being merely of secondary importance. This was followed by introductions by the British after 1655.

The growth of the sugar industry in the eighteenth century increased cattle rearing for the production of animals to work on the sugar estates. At the same time cattle from among the various breeds, both dairy and beef, which were then developed in the United Kingdom, were brought into Jamaica. The animals of Spanish and British origin were inter-bred in an attempt to increase productivity. The continued importations included Zebu or Indian cattle for their proven capacity as draft animals as well as their known resistance to tick borne diseases.

Dairying started on a limited scale and by the beginning of the twentieth century there was demand for supplies of fresh milk. This gave rise to a number of farms with animals from a mixture of breeds.
Experimental work in the breeding of dairy cattle for the tropics began in Jamaica at the Government Hope Farm in 1910 when the need was recognized for a dairy breed capable of coping with the heat, humidity, diseases and low quality forages of the tropics.

A nucleus of local dairy cows purchased from farms and importations made up of dairy cattle from the Jersey, Guernsey, Ayrshire, Holstein, Brown Swiss and Red Poll breeds, as well as of two bulls of the Sahiwal breed from India, formed the basis for experimentation.

The Sahiwal has contributed hardiness, that is an ability to tolerate heat, low quality forage, parasite burdens, as well as strengthening feet and legs. The Jersey emerged the most heat tolerant of the Bos Taurus breeds and has enhanced fertility and udder characteristics, while at the same time ensuring a suitable body size for the tropics.

From the early experimental work Cousins (1933) indicated the possibility of developing a tropical dairy breed.

Jamaica, north of the equator in the Caribbean area, in the region of the 18th parallel, is in the tropics (Figure 1). Mountain ridges are mainly from east to west and grasslands are at different altitudes in hilly areas as well as on flat lands. Temperatures are moderated by the influences of day and night winds.

The average maximum temperature at Hope, the location of the start of dairy cattle research, was 24°C. Bodles, the new Research Station, slightly above sea level, to which the research herd was transferred in 1950–1951 to intensify development, has an average maximum temperature of 31.5°C.

**Developmental Results**

The experimental work, sustained within the Agricultural Station and influencing farmers island-wide, mainly by the provision of sires, resulted in the dominance of the grade Jersey as the most productive. On this observation...
Body size mature animals: 630-730 kg for male and 385-455 kg for female.

Appearance: Angular from fore to hindquarters showing a wedge-shaped form. Good width between forelegs; good barrel carrying through to hindquarters.

Skin: Smooth appearance, not loose or coarse.

Head in male: Masculine appearance, face, wide between eyes and moderately dished; medium-length, broad muzzle and wide nostrils.

Head in female: Moderately dished, medium-length.

Body in male: Neck, strong, with crest blending into shoulders, long body, with rump, slightly sloping, of good width and good length from hip to pins.

Testicles: Evenly sized well-balanced and hanging at medium-length.

Body in female: Neck, blending smoothly with withers, body firm and deep with well sprung ribs showing good barrel.

Udder: Level floor, quarters evenly balanced and defined: teats well apart squarely placed; rear attachment high and with good width; fore attachment carried forward and well attached.

Colour: Fawn, varying from light to dark fawn, solid colour predominates.

Pigment: Dark (black).

Other characteristics:
- 12-months calving interval
- Low maintenance requirements
- High milk production
- Tolerance to external parasites
- Good milk let-down without calf
- Easy calving
- At foot
- Strong feet and legs
- High butter fat production
- Calm dairy temperament
- Good foraging ability

**Table 1. Main characteristics of the Jamaica Hope.**

<table>
<thead>
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<th>Characteristic</th>
<th>Description</th>
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Lecky (1949) indicated and ceased further use of Jersey bulls on the grade Jersey as further use of the Jersey would lower adaptation. A critical evaluation in 1950-51 of the data collected from the sustained research with the Hope herd revealed that to develop a new breed the greatest possibility was with the selection within the grade Jersey (Lecky, 1951).
The Jamaica Hope cattle breed

The Jamaica Hope was declared a breed in 1952 with the Government’s grade Jersey herd given pure-bred status. The genetic make-up is estimated to be 80 percent Jersey, 15 percent Sahiwal and five percent Holstein. The Jamaica Hope Cattle Breeders’ Society was also founded in that year and involved farmers with grade Jersey Herds.

Breed Characteristics

Main characteristics of the breed are summarised in table 1.

Breed development

Breed development is controlled by the Jamaica Hope Cattle Breeders’ Society. The Society operates an open Herd Book Policy whereby approved females are up-graded through three generations by the use of registered Jamaica Hope bulls.

Visual appraisals to ensure conformity with breed standards are carried out with females after calving and with bulls up to four years old. Strong emphasis is placed on udder characteristic, feet and legs.

Selection is against beef conformation and heavy fat deposition.

The Ministry of Agriculture continues research with the nucleus herd at Bodles Research Station, Old Harbour and operates the National Recording Programme enabling testing. Development programmes such as the Multiple Ovulation Embryo Transfer (MOET) are envisaged for the future.

The breed is productive, fertile, heat tolerant and has excellent dairy characteristics. This tropically adapted breed, resistant to tick borne diseases, Anaplasmosis and Piroplasmosis is fully established on several private- and Government-owned farms operating in the tropics.

Farmers’ herds integrate the development of the breed thus enabling the use of bulls from their herds. The second lactation pure-bred Jamaica Hope cow at Bodles, is sired by a bull introduced into the Bodles herd (Figure 2).

Figure 2. Second lactation purebred jamaica Hope at Bodies Agricultural Research Station, Jamaica. First lactation production 3 700 litres in 305 days.
Management of herds is through progressive husbandry from calf rearing onwards. Calf rearing is by different methods. The Jamaica Hope development through the sire genealogy path across all sire lines, since declaration of the breed, ranges from seven to ten generations. Figure 3 is the Jamaica Hope bull, named Bodles Brucome, age four (4) years, which is on national use through the Bodles Artificial Insemination Centre.

Breed performance

Jamaica Hope cattle are used successfully over a wide spectrum of conditions ranging from subsistence farming to large commercial enterprises.

On low-input farming systems the Jamaica Hope is successful. Cows are milked once per day. Forage is often cut and carried with little supplementary feeding.

On the large dairy enterprises, cows are milked in the herds of several hundreds at stocking rates of five cows per hectare, to produce over 17 000 litres of milk per hectare with supplementary feed at 0.4 kg per litre of milk. Several herds have averages of over 4 800 litres per lactation while individual cows have produced over 8 800 litres of milk in 305 days, milking twice a day.

Longevity and reproductive performance are good even under intensive commercial systems. The average number of lactation is over five with calving intervals of less than 13 months.

Health status

Jamaica is free of rabies and foot-and-mouth disease. All herds are tested regularly for tuberculosis (TB) and brucellosis. The island’s strict quarantine regulations ensure this status is maintained.
Population

The number of animals in the national herd is estimated at 20,000.

References


