

Traditional technologies in the improvement of breeds of livestock in Tamil Nadu

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Animal husbandry has been practiced in India since time immemorial. Among different species of livestock kept by farmers, cattle and buffaloes are maintained by maximum numbers in varying combinations. Earlier various methods were used for the improvement of the breeds of livestock. Tamil Nadu is endowed with some recognized breeds of cattle (5), buffalo (1), sheep (8) and goat (1), besides many non-descript domestic animal species. There are certain traditional background in the evolution and existence of these breeds. Selection of animals and planned mating were evolved in earlier days itself. Further, efforts are being made by the farmers to change their sire in the herd / flock for improvement even without knowing the underlying principles. Indigenous technical know-how used for the improvement of breeds of cattle, buffaloes, sheep and goats and pigs in Kerala have been discussed.

Key words: Traditional Knowledge, Breed Improvement, Livestock, Animal husbandry.

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The selection of animals for higher productivity was a specialized subject even in the days of *Mataya Purana*, which gives instructions regarding the selection of a bull. Several pastoral communities too keep livestock by tradition as a sole source of livelihood¹. Such a long association with the art of rearing of animals under the widely varying agro-ecological conditions of the country has not only led to the evolution of highly diverse livestock genetic resources, but also many traditional technologies for the improvement of breeds.

India is the vast reservoir of animal genetic resources containing more than 30 recognized breeds of cattle, 10 buffaloes, 42 sheep, 20 goats and 18 poultry breeds. It is relevant to mention the animal genetic resources available in Tamil Nadu in brief (Table-1) before discussing the indigenous technical know-how (ITK) used in developing them.

Traditional Technical Know-how

Breed improvement

Main tools used in breed formation and also for improving the productivity of dairy cattle in the past were "selection" and "mating plan". By following the practice of mating "best with best" or "like with like" rather vigorously, which is now recognized as

assortative mating, by which many useful breeds were evolved. Persistent efforts have been made all along to improve them further.⁵

(a) Cattle

Kangayam

In Tamil Nadu, the *Kangayam* breed of cattle is the finest draught breed. The credit of evolving this breed from non-descript cattle, fixing the type and making it breed 'true', goes to the family of Pattagars of Palayakottai³. The breed was kept pure by using sires only from his same herd². Further, young bulls were also emasculated at the age of about two and a half years by the process of crushing or mulling, which was widely practised in India. So the procedure of castration of males was also followed in earlier days.

Mulling is a cruel and painful method when compared to the modern method of castration by Burdizoo. This was usually done by a pair of two rounded sticks (fine rulers polished smoothly) with the thickness of 14.5 cm at the bottom, 12.5 cm at the middle portion and 9.5 cm at the top. Guts at 10 cm from the bottom end 6 joined these two rulers. The animal was cast and all four legs tied. The scrotal bag with testicles was drawn outside and the sticks were applied at the bottom of the scrotum. The operator applied pressure with his hands until hearing a breaking sound indicating the spermatic chord being

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Table 1—Animal Genetic Resources In Tamil Nadu

Names of the breeds	Breeding tracts	Characteristics
(a). Cattle		
1. Kangayam	Erode, Dindigul, Karur and Coimbatore districts	The colour is grey with dark grey to black markings in front of fetlocks on all four legs. Horns are stout and curving outward and backward and completing a circle at the point where they approach the tips.
2. Umblachery	Tiruvarur and Nagapatnam districts	Colour is dark gray with white markings on forehead, all the four limbs, tail and switch.
3. Burghur	Burghur hills of Bhavani taluk in Erode	Red and white patches of variable extent on the body, horns, hooves, muzzle and switch of the tail are reddish in colour. Head is long, with slightly prominent forehead with a deep furrow between the roots of horns.
4. Alambadi	Dharmapuri and Erode districts.	Adults are gray / dark gray in colour. They are more massive and of larger built.
5. Pulikulum	Mainly in Cumbum region of Theni district	Similar to Kangayam, but differs in size and the muzzle and eyes. Animals are brown in colour.
All these breeds are of draught type		
(b) Buffalo		
Toda	Plateau of Nilgiri hills in Tamilnadu	Ash grey in colour. Head is large and heavy, surmounted by crescent shaped horns. Chevron markings are found below neck region.
(c) Sheep		
1. Madras Red	Chennai, Kancheepuram and Thiruvallur districts	Body colour is brown, white markings may be present on forehead, inside the thighs and lower abdomen; Rams have strong corrugated and twisted horns.
2. Mecheri	Salem, Namakkal, Erode, Karur and parts of Dharmapuri districts	Medium sized animals, light brown in colour; both sexes are polled.
3. Ramnad White	Ramnad and adjoining areas of Tirunelveli districts	Medium sized animals. Predominantly white. Males have twisted horns and females are polled.
4. Vembur	Tuticorin and Virudunagar districts	Animals tall, white with irregular red and fawn patches all over the body. Males are horned and females are polled.
5. Kilakarsal	Ramnad district, also found in Madurai and Thanjavur districts	Dark tan with black spots on head, belly and legs. Males have thick twisted horns. Most animals have wattle.
6. Coimbatore	Coimbatore and Madurai districts and bordering districts of Kerala and Karnataka	White with black or brown spots. 38 % males are polled. Fleece is white, coarse and hairy.
7. Trichy Black	Perambalur, Trichy and parts of Villupuram and Dharmapuri districts	Animals small, body is completely black. Males are horned and females are polled.
8. Nilgiri	Nilgiri hills	White coloured animals. It is a polled breed with roman nose. It produces fine apparel wool.
(d) Goat		
Kanni Adu	Virudhunagar, Tuticorin and Tirunelveli districts	Animals tall, predominantly black or black with white or black with brown patches. A highly prolific breed.
Kodi Adu, Salem Black and non-descript black goats are also available in Tamilnadu Sources ^{2,3 & 4}		

broken. At the same time, the two ears were trimmed with an ordinary knife to give an alert appearance to the animals. But now this painful method has been replaced by Burdizoo method, a bloodless and painless method of castration.

Selection of *Kangayam* animals based on "Swirls" and "Curls" present on the surface of the body is still followed in the *Kangayam* belt. Swirls or curls are simply twists of hairs (hair marks on the coat of the animal), commonly found near neck, hip joint, hump

and other regions. Some of them were considered lucky and some unlucky marks. If there were bad marks or twists on an animal's body, nobody would purchase it; therefore sellers usually branded the skin over the marks to hide these marks⁷.

Umblachery

The head of the *Umblachery* breed gives the appearance of British Polled cattle as the cattle horns are destructed (dehorned) using heated iron drawn backward and forward until the part is sufficiently burnt. Prior to draw the heated iron, some hairs from the tail are taken, mixed with jaggery or coarse sugar and applied over the tender horns. In some areas, it is even applied on to fresh wound in human. It is customary to cut 5 to 7.5 cm off the ears to improve the appearance of the animal. This destruction is supposed to increase its strength and renders it more docile. This process alters the appearance of cattle and most certainly gives the impression that it is a special breed.

Burghur

The Lambadies and Lingays of that area extensively breed the *Burghur* breed of cattle in and around the Burghur hills of Bhavanai taluk of Erode district. They are penned for a minimum period in a year in the interior forest for meeting better grazing facilities. At the time of harvest, the cattle are brought back to villages for harvest operations and they remain there till the next sowing is over. The female progeny is mostly retained in the herd for building and supplementing the reduction in the herd while the males are taken to the plains and marketed.

Pullikulam

Pullikulam cattle breed, called "*Jellicut*", is ferocious and is used for "Bull-Baiting". Bulls selected for this purpose are fed and well cared by the owners only so as to make them savage towards strangers. They are also trained from earlier days by teasing to have the ferocious character. The way of rearing these animals makes them very alert and quick in sensing the approach of natural enemies. The sense of collective defense and motherly instinct are of high order³. This breed is a quick trotting breed and said to have evolved for the benefit of quick transport work. They have been maintained as nomadic or migrating herds. During July to January, the herds move on to the hills adjoining Cumbum valley. In February, they move down to plains and keep on moving. They are

used for penning the fields during post harvest recess.

Generally, in earlier days, promiscuous breeding had taken place when all cattle including cows and young bulls grazed together in the forest area or common wasteland. In villages, cows were mated to the useless and much neglected *Brahmini* bulls. This type of breeding led to the deterioration of stock. But, later, heavy built bulls in the villages, which had been reared for temple purposes, were left free to roam around the villages and were allowed for siring the cows for better production. Similarly, castration of young bulls was carried out when the bull was 3 -4 yrs old by a painful operation called mulling. With these activities, the performances of the cows were slowly and steadily improved.

(b)Buffaloes

Toda

The *Toda* buffalo in the Nilgiris is named after an aboriginal tribe, the *Toda* of South India. Though the *Toda* buffaloes are thoroughly under the control of the tribe, they are semi wild in nature. Their life on the Nilgiri hills produced much finer animals than those on the plains. Only natural mating is practised. No concentrate is fed; they thrive only on pasture and yield considerable amount of milk. Buffaloes migrate from one place to other in search of fresh pasturage. This buffalo is associated with the socio-economic aspect of the tribe. The folkloric account on rituals of milking, dairy practices, care of buffaloes and migration is described by Emeneau (1971) in the form of song units⁸. Perhaps, this is the only breed of buffalo reared still in primitive level of management. Application of butter to the teat for ease of milking and pacifying the buffalo by its own milk while milking are followed⁹. When a buffalo cow die or dried off, its calf is allowed to suck milk from foster mothers. Similarly, when a calf dies, its mother is not allowed to dry off. Instead, another calf or calf of dried up buffalo cows or orphaned calf is allowed as a surrogate to keep such buffalo cow on milking. Dried up cows also have the tendency to remain in the forest. Still *Toda* tribe uses the vessels made of bamboo sticks for all the dairy operations.

Still the tradition in rearing of *Toda* buffaloes is preserved in the main land of *Toda*. This includes giving of salt twice a year, exchange of buffaloes during marriage ceremony and slaughtering of buffaloes for ceremonial purposes to propitiate the dead relative of the clan.

(c) Sheep and goats

Sheep and goats have adapted themselves to the natural conditions prevailing in all regions of the country. In certain areas, milch types of goats have been developed, but the majority of the herds are raised mainly for the meat markets. The Nilgiri breed of sheep evolved during 19th century originated from a crossbred base and contains an unknown level of inheritance of Coimbatore, the local hairy breed, Tasmanian Merino, Cheviot and South Down⁴.

In villages, a few rams or bucks are reared exclusively for breeding purposes. They become massive and serve the female animals from different flocks and after 1 to 2 years these animals are sacrificed. In some villages in southern Tamil Nadu, an improvised castrator made of wooden sticks is used for castration of young sheep and goats.

(d) Pigs

The indigenous pigs are of non-descript type, but are resistant to many diseases. Nomads and economically weaker sections of the society rear them. Though these pigs are highly neglected for some taboos and sentiments, the existence of this unique germplasm is because of these traditional communities, who own them for many decades. The stud boars are often changed in the village piggery units to improve their production and thereby avoiding inbreeding. Similar approach is also practised for sheep and goats.

Conclusion

The traditional practices have led to the evolution of new much finer breeds such as *Kangayam* cattle,

Toda buffaloes and Nilgiri sheep in Tamil Nadu. Subsequent selection procedures have brought improvement of these breeds over the years. However, a few crude techniques such as mulling could be replaced by Burdizoo Castrator. Still, modern livestock rearing method could not penetrate the tradition-bound *Toda* tribe. The basic practices followed in animal husbandry today also have some traditional backup. Hence, preserving the traditional practices would reflect our unique culture and definitely help to achieve sustainable production in animal husbandry sector.

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