

Frieswal - A New Popular Synthetic Breed

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During the 1950s and 1960s, India faced significant challenges in its dairy industry. The country was deficient in milk production, relying on imports, with annual growth rates often negative. In the decade following independence, milk production grew at a compound rate of 1.64%, decreasing to 1.15% in the 1960s. In 1950-51, per capita milk consumption was a mere 124 grams per day, which dropped to 107 grams per day by 1970, well below international nutritional standards. Despite having the world's largest cattle population, India produced less than 21 million tonnes of milk annually (PIB Report, 2022).



Over the past five decades, crossbreeding has gained traction globally due to established benefits such as heterosis, where crossbred animals exhibit enhanced robustness and economic efficiency compared to their parental breeds (Sorensen et al., 2008; Pedersen and Christensen, 1989). Indigenous cattle breeds in India typically exhibit poor growth rates (100-150 g per day), late sexual maturity (first calving at around 60 months), and low milk yields (below 500 kg per lactation). For instance, breeds like Sahiwal, Red Sindhi, Tharparkar, Rathi, and Gir yield approximately 1500 litres per lactation, whereas all other breeds yield less than 1000 litres. Crossbreeding, defined as mating two purebred individuals from different breeds or species, is widely utilized to improve cattle breeds.

Today, India leads global milk production, contributing 23% to the total output. The dairy sector is the largest agricultural contributor to the economy, accounting for 5% of the

national GDP and employing over 8 crore farmers directly. Milk production has grown at a Compound Annual Growth Rate (CAGR) of 5.85% over the past nine years, increasing from 146.31 million tonnes in 2014-15 to 230.58 million tonnes in 2022-23. Globally, milk production grew by 0.51% in 2022 compared to the previous year (Food Outlook, June 2023). Per capita milk availability in India during 2022-23 stood at 459 grams per day, surpassing the global average of 322 grams per day in 2022 (Food Outlook, June 2023).

Several countries, including Denmark, the United States, and New Zealand, have implemented systematic crossbreeding programs (Kargo et al., 2012). In India, crossbreeding local cattle with exotic dairy breeds became a key strategy to meet growing milk demands. The "Frieswal cattle," developed under the All India Coordinated Research Project (AICRP) initiated in 1968 by ICAR-Central Institute for Research on Cattle in collaboration with Military Farm, Ministry of Defence, represents a successful crossbreeding effort. This breed, comprising 5/8 Holstein Friesian and 3/8 Sahiwal inheritance, was designed to combine the high milk yield of Holstein Friesians with the heat tolerance and disease resistance of Sahiwal cattle.



Established in the seventh Five-Year Plan, the Project Directorate on Cattle was inaugurated on 3 November 1987 at the Military Farm School and Central Institute for Research on Cattle in Meerut. Its objectives included genetic improvement studies of Holstein x Sahiwal crossbreeds and other indigenous breeds, as well as large-scale progeny testing of bulls in private herds.

Frieswal breed was developed by the joint efforts of Military Dairy Farm, Meerut and Central Institute for Research on Cattle, Meerut. All India Cattle Coordinated Project was started in the year 1968 by Central Institute for Research on Cattle, Meerut in different climatic regions of the country (Punjab, Kerala, Maharashtra and Uttarakhand) for breed evaluation and

female progeny testing. The results of milk production of this breed are being very encouraging at various centers of the project.

As of December 5, 2023, the Frieswal cattle has been officially registered as India's first synthetic breed by the National Bureau of Animal Genetic Resources (NBAGR) under ICAR, Karnal. There are now more than 20,000 Frieswal animals in 16 states, with significant numbers on military Dairy farms and All India Co-ordinated Research Project on Cattle Frieswal sites in



Punjab, Kerala, Maharashtra and Uttarakhand. Frieswal animal is a calm natured animal. The adult male weighs approximately 445 kg and the adult female weighs approximately 412 kg. Calves weigh up to 27.5 kg (male) and 26.5 kg (female). First lactation period is 36 months, average milk production of first lactation is 4000 kg. A Frieswal cow can produce up to 5000-6000 kg of milk.

Based on the above, we can say that Frieswal breed is an advanced milk producing breed, which shows the success of farmers by doubling their income along with improving the dairy industry of India.