

GIR COWS AS A2 MILK PRODUCERS :A healthy source of nutrition

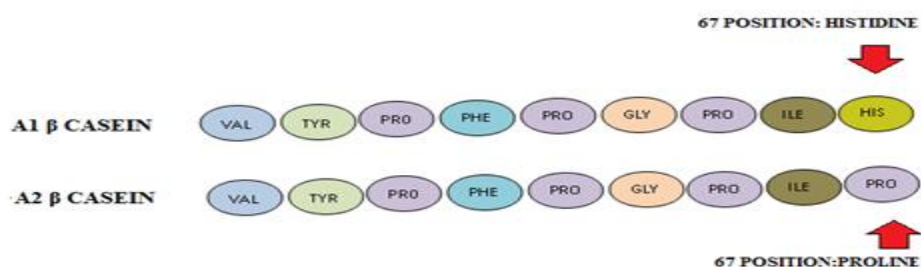
Srikanth.Munuru

Department of Biotechnology, Andhra University, Visakhapatnam.

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Intoduction

In India milk is the important source of nutrition which contains different essential nutrient elements required for the body. As an agricultural product, dairy milk is collected from different farm animals like cows, buffalos, goats, etc. India is the world's largest producer of milk. In producing milk India stood 1st place all over the world by producing 186,143,000 metric tons. 60,600,000 metric tons of cow's milk is produced in India. Generally cow's milk has about 86% water, 2.8% milk protein, 4.6% lactose sugar, 3.7% triglycerides, 0.54% minerals and 3.36% other constituents. Milk protein constitutes 36% α -Casein, 27% β -Casein, 9% κ -casein, 27% peptides and amino acids. It also contains immunoglobulins, hormones, growth factors, cytokines, nucleotides, peptides, polyamines, enzymes and several others bioactive peptides. The most abundant β casein protein exists in A1 and A2 form which is determined by the presence of histidine and proline amino acids respectively.





Breakdown of casein in A1 milk releases a chemical component called BCM-7 which is the reason for morphine-like effects on the Central Nervous system, this morphine causes Neuro disorders like cognitive disorders, which affect learning ability and aggravated symptoms of autism. A1 milk protein has 'Histidine' at 67th position which is released to form Histamine (causing allergic reactions) which may lead to developing allergic dermatitis (allergy on skin), allergic rhinitis (running nose) and allergic cough.

Problems evolved by consuming A1 Milk

The major protein in some cow's milk is A1 β -casein could lead to type 1 diabetes by facilitating some immunological processes. It is also suggested that it may also cause coronary heart disease (CHD) and various problems like Autism, Ulcerative colitis, Multiple sclerosis, Mental disorders and Obesity, Sudden death Syndrome in infants. Cow milk protein allergy (CMPA) is considered a common milk digestive and metabolic disorder or allergic disease. It is an IgE-mediated allergy where the body starts to produce IgE antibodies against certain protein (allergens) such as A1 milk and α_{s1} -casein in bovine milk. Studies have shown that ingestion of β -casein A1 milk can cause ischemic heart disease, type-1 diabetes, arteriosclerosis, sudden infant death syndrome, autism, schizophrenia, etc.

A2 milk as solution

The knowledge of bovine A2 milk and caprine α_{s2} -casein has been utilized to rescue CMPA patients and other potential disease problems. So A2 β -casein is considered a safer choice for human health especially in infant nutrition. The A2 cow milk is reportedly easier to digest and better absorb than A1 or other types of milk. The structure of A2 cow's milk protein is more comparable to human breast milk, as well as milk from goats, sheep and buffalo. In A2 milk producing cows Arvin East, Sahiwal, Brahman, Tharparkar, Gir, Red Sindhi, Kangeyam Indian breeds are major varieties.

Gir Cows

Gir cows are one of the superior categories of cattle breed in India which produces A2 milk and with rich Carotene, Vitamin A and Vitamin E. These gir cows originated in Gujarat state which is at the southwest of India. This breed is also known as Bhodali, Desan, Gujarati,

Kathiawari, Sorthi and Surti in different parts of the breeding tract. The Gir cows are well known for their tolerance to stress conditions and resistance to various tropical diseases. It is the only ultra convex breed in the world with a round, domed forehead with long ears and horns which are curved back. Gir are generally in colour ranging from red through yellow to white and some are even in black. The average weight of the cow is 385 kg with 130 cm in height and bulls weigh upto 545 kg on average with 140 cm and their calves weigh about 20 kgs at the time of the birth. The average milk yield for the Gir is 2 063 litres in a mean lactation period of 326 days. Average milk yield in 300 days was 1930 litres.

Gir Cow Milk Benefits:

- This milk has calcium, phosphorus, rich fats, potassium which helps to maintain blood pressure.
- Conjugated Linoleic Acid (CLA) is an important acid that lowering bad cholesterol thus it improves overall heart health.
- This milk has antioxidant compounds like selenium and zinc, vitamin E amino acid which fights with diseases
- It consists of amino fatty acids, calcium, Potassium, etc helps in body fat oxidation & also decreases secretion of parathyroid hormone and helps in proper heart functioning, nerve transmission & muscles contraction
- Rich with vitamin b2 & b12 vitamin b12 helps to produce red blood cells. This helps to prevent anaemia

