

Increasing nutritional content of milk using technology

Introduction:

Some of the most important constituents of milk include fat, protein, SNF, lactose and ash. It has been noted in various studies that cattle are not raised in ideal conditions in the country. In a typical cow shed, cows are tied in congested areas, fed factory-made artificial fodder, and injected with steroids and artificial hormones. While these lead to an increase in milk supply, it decreases its nutritional value. Further, most of the branded milk available in the market is pasteurised since not all farmers can afford in-house chilling units. However, the pasteurisation process destroys many vital elements such as vitamin A, B6 and B12, calcium and iodine.

Intervention:

Acknowledging this, Dr. GNS Reddy, a veterinary expert, founded Akshayakalpa Farms and Foods in 2010 in Karnataka's Tiptur district, with the aim of offering nutrient-rich milk to consumers.

An Akshayakalpa farm comprises of 20 – 25 cows, an advanced cowshed, an automated milking system, fodder chopper and chilling unit, bio-gas plant and generator. The entire farm is completely automated. Apart from this, the focus is on the cows' health. All cows are stress-free and have the freedom to graze whenever they like. Their sheds are cleaned regularly – limiting the risk of diseases and each cow is monitored electronically for its health and overall milk production regularly. The cows are fed a mix of organic fodder; monocots (maize, ragi and local jowar) and dicots (cow pea and velvet beans) along with tree fodder (moringa), all of which are grown organically by the farmers themselves. Further, all processes, from milking the cow to chilling it, are done through machines without the touch of a human hand, eliminating the need for pasteurisation completely. As a move towards sustainability, cow dung and urine are diverted to the biogas plant, which effectively produces enough methane gas that can operate the farm for eight hours every day, largely reducing the dependency on the state's power grid, which is often a challenge in the rural areas. As of April 2018, there were 160 farmers registered with Akshayakalpa.

Impact:

- The model has brought entrepreneurial culture to agriculture – Akshayakalpa handholds farmers on sourcing equipment, accessing vaccinations, and cultivating/buying fodder.
- The farmers typically earn between Rs 40,000 – Rs 1,00,000 monthly, depending on the scale of their farms.
- The cows are healthier and stress-free, resulting in better milk production.
- Milking machines ensure hygiene and enable better nutritional content of milk by eliminating pasteurisation.

Source: Akshayakalpa Farms – how IT professionals are turning into farm-based entrepreneurs in Karnataka's Tiptur, YourStory, 16 February 2016, accessed on 29 December 2019; Why The Akshayakalpa Agri-Experiment in Karnataka may well grow into a movement, Swarajya Mag, 28 November 2016, accessed on 29 December 2019