Sandha- A herboprobiotic veterinary elixir

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Sandha is a unique blend of traditional herbs and fermentation technology. Rural and tribal people of Gonda, Balrampur, Bahraich and adjoining districts of Terai region of Uttar Pradesh locally prepare it. This veterinary elixir of natural ingredients and probiotics is a proven adaptogenic, comprehensive tonic, systemic and metabolic corrective, which promotes appetite and growth of cattle.

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Animals have had a very significant role in human civilization and culture. They have been domesticated for flesh, milk, leather, fat, hair, transport, warfare, sports and recreation. In our ancient literature there are many instances to animals even some purans, viz. Ashwapuran, Garurpuran, Hashtypuran and Matsyapuran deal largely with diet, healthcare and use of animals1. During recent times some 200 books have been published on traditional veterinary recipes based on herbs. The present veterinary elixir, Sandha is a traditional formulation of herbal and probiotic ingredients based on fermentation technology. The product is useful in the treatment and prophylaxis of bloat, constipation, diarrhoea, general weakness, liver disorders, loss of appetite, retardation of growth and weakness due to long illness. It also restores the general health conditions after delivery and milk yielding capacity in cattle.

Methodology
All the ingredients (Table 1) are thoroughly mixed in an earthen pot and left for 7-8 days for fermentation. In the mean time, materials are stirred on alternate days. The fermentation is evident by sharp typical aroma of herbs and wine. About one litre-fermented elixir (Sandha) with a little amount of salt is given orally to average cattle everyday early in the morning for 15-20 days.

Results and discussion
In the ingredients of Sandha, there are two important categories of components (herbal and probiotic), which bring about the remedial and prophylactic effects against different cattle disorders.

a. Herbal components
1. Hordeum vulgare L. (Barley) is a source of malt, which after fermentation with yeast gives rise to beer (4% alcohol)2,3.
2. Madhuca indica Gmel. (Mahua or Butter tree) flowers are rich in sugars, which after fermentation with yeast give rise to alcoholic liqueurs and vinegar, also demulcent and tonic2.
3. Melia azedarach L. (Persian Lilac or Bead tree) leaf juice is anthelmintic, diuretic and emmanagogue; bark antinemic and fruit a tonic2, seed larvicidal against mosquito (Anopheles stephensi Liston) larvae4.
4. Saccharum officinarum L. (Sugarcane) Juice product, jaggery is a good source of sugar, which after fermentation with yeast yields alcoholic products and a tonic.

These herbal components like Barley grains, Mahua flowers and jaggery add alcohol to the elixir which acts as preservative and exerts antifatigue and refreshing effects on cattle in mild doses. However, leaf juice of M. azedarach L. is anthelmintic, diuretic and bark is antinemic, which clears the intestinal tract from helminth and nematode parasites and ensures better nutrient supply. Simultaneously its diuretic nature activates flow of urine and elimination of nitrogenous wastes.
Lactobacilli

Probiotics are live microorganisms which when administered in adequate amounts confer a health benefit on the host. Thus, probiotics are not biotherapeutic agents. Probably most studied on probiotics belong to the genera Lactobacilli, Bifidobacteria and yeasts. These genera have a considerable safety record within the fermented food and more recently in probiotic foods. Probiotic therapy has been investigated for its effectiveness against a range of gastrointestinal and other disorders. Researches suggest that probiotic bacteria mediate a variety of health effects through numerous mechanisms. For instances, alleviation of lactose intolerance symptoms and anti-diarrhoeal effects are the best-sustained effects. Modulation of the gut microflora and its influence on the mucosal immunity are mechanisms of probiotic function with potential to broadly influence physiology.

Lactic acid bacteria (Lactobacilli) and yeasts (Saccharomyces) improve intestinal mobility; prevent diarrhoea, constipation, inflammatory bowel disorders and tones up liver. Modulation of gut microflora through consumption of probiotics can have effect on the urogenital ecosystem, as urinary and genital infections have been linked to bacteria originating from the colon. Thus, populating the colon with Lactobacilli enables the colon to serve as a source of beneficial and not just harmful bacteria. Fermentation of food with Lactobacilli has shown to increase folic acid content of yogurt and yeasts are rich in vitamin B-complex. In addition to nutrient synthesis, probiotics improve digestibility of proteins and fats. Short chain fatty acids such as lactic acid, propionic acid and butyric acid produced by Lactobacilli may help to maintain an appropriate pH and protect against pathological changes in the colonic mucosa. Evidences from in vitro systems, animal models and humans suggest that probiotics can enhance both specific and nonspecific immune response, possibly by activating macrophages, increasing natural killer cell activity and/or increasing level of immunoglobulins. Consumption of probiotics prevents allergic reactions by improving mucosal barrier functions against antigens. Clinical trials and mechanistic studies suggest that probiotic bacteria and yeasts can counteract mutagenic and genotoxic effects in colon and other organs thus influence the epithelial cells kinetics in the colon and decreasing cancer proliferation. Besides, herbal and probiotic components copper and iron is also added to supply elemental copper and iron through elixir.

Conclusion

The traditional formulation Sandha shares benefits of both herbs and probiotics. Living microorganisms like lactic acid bacteria and yeasts as fermentation agents in the preparation re-establish the disrupted microecosystem of the intestinal tract and urogenital system and ensure bioavailability of nutrients like vitamins, minerals and enzymes in natural form. This triggers preventive as well as curative influence of the body against infections and serious health concerns.

Sandha has been reported as an excellent, cost affective, readily available indigenous, veterinary elixir, which can be effective in the veterinary health care system. Although the product is traditional, time tested and the credibility is based on scientific facts, yet it needs intense biochemical, microbiological and pharmacological scrutiny for further improvement of its efficacy, commercialization and use at large to improve the veterinary health conditions.

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References