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Popular Article

Donkey Milk and Its Health Benefits

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Abstract

Donkey milk indeed presents a promising array of nutritional and health benefits. Its similarity to human milk makes it a viable option for infants with cow milk protein allergies, offering an alternative source of essential nutrients like calcium and proteins. The low-fat content and favourable lipid composition also make it suitable for elderly consumers concerned about their lipid intake. Moreover, the presence of bioactive compounds enhances its health-promoting properties, including antibacterial activity, immune system stimulation, potential for preventing inflammatory diseases, and even anti-aging effects. These qualities make donkey milk and its derivatives not only nutritionally beneficial but also potentially supportive of overall health and well-being across different age groups.

Keywords: Donkey milk, Antibacterial activity, Anti-aging effects, bioactive compounds

Introduction

Donkey milk, often referred to as "white gold," has gained significant attention due to its numerous health benefits. Donkey milk is gaining a growing interest in human nutrition due to its distinctive composition and physiological aspects. This unique milk has a composition distinct from that of cow's milk, making it a valuable source of nutrients such as vitamins, minerals, and proteins. Donkey milk is a rich source of essential nutrients such as vitamins (A, B1, B2, B6, C, D, and E), minerals (calcium, magnesium, phosphorus, and zinc), and proteins. It is also low in fat and cholesterol, making it a healthier alternative to cow's milk. Historically, donkey milk has been used



in various cultures for its medicinal properties, believed to boost the immune system, aid digestion, and improve skin health. Donkey milk is easily digestible due to its similar composition to human breast milk, making it suitable for people with lactose intolerance or sensitive stomachs (Deepa *et al.*, 2023). Despite its long history, donkey milk remains relatively under-researched compared to other types of milk. By delving into the scientific research and traditional beliefs surrounding donkey milk, the aim of this article to provide a comprehensive understanding of its potential role in promoting human health and well-being.

Historical Significance of Donkey Milk

The historical significance of donkey milk dates back to ancient civilizations, where it was lauded for its medicinal properties and nutritional benefits. Donkey milk has been renowned for its hypoallergenic properties and similarity to human milk, making it a valuable alternative for individuals with lactose intolerance or sensitive skin. Understanding the historical context of donkey milk production can provide insights into its modern applications in skincare, infant nutrition, and lactose-intolerant populations, as further supported by Sargentini *et al.* (2018). Donkey milk is gaining a growing interest in human nutrition due to its distinctive composition and physiological aspects. The low content of total proteins, particularly rich in whey proteins, high level of lactose, together with the peculiar mineral composition makes it more comparable with human milk than is cow milk, a good substitute for new-borns who cannot be breast-fed, and well tolerated by many persons suffering of cow milk allergy (CMA) or cow milk intolerance (CMI) (Sargentini *et al.*, 2018).

Nutritional Composition of Donkey Milk

The nutritional composition of donkey milk presents a promising alternative for infant nutrition, particularly for neonates with cow milk protein allergies, due to its protein composition resembling that of human milk. Recent studies have highlighted the high digestibility of donkey caseins and major whey proteins, underscoring its potential as a suitable substitute. Furthermore, the physicochemical analysis of Abyssinian donkey milk demonstrated similarities with human breast milk in essential components such as protein, lactose, vitamin C, and minerals, suggesting its potential as a valuable supplement (Tadesse *et al.*, 2014). Notably, the lower microbial load and lack of fermentation in donkey milk compared to cow's milk open avenues for natural food preservation.

Health Benefits of Donkey Milk

Donkey milk, a promising alternative to traditional dairy products, offers a range of health benefits that warrant further investigation. Rich in antibacterial components and protective elements, donkey milk exhibits a composition akin to human milk, boasting low fat content, high lactose levels,



and a favourable casein/whey protein ratio. Studies suggest its potential in treating lung cancer due to anti-proliferative properties found in whey proteins. Moreover, alpha-lactalbumin in donkey milk has been linked to antiviral, anticancer, and anti-stress properties. For individuals with cow milk protein allergies or lactose intolerance, donkey milk serves as a viable option, offering enhanced palatability and allergen prevention. Ongoing research also indicates the potential of donkey milk in osteogenesis, arteriosclerosis therapy, cardiac rehabilitation, and hypocholesterolemic diets (Marletta *et al.*, 2016).

Current Research and Studies on Donkey Milk

Current research and studies on donkey milk play a crucial role in understanding the health benefits associated with this unique dairy product. As highlighted by (Bennett *et al.*, 2020), the increasing demand for donkey hides for ejiao production raises concerns about the sustainability of donkey populations globally. This emphasizes the need for in-depth research on alternative uses of donkeys, such as donkey milk production, to alleviate the pressure on these animals. Additionally, peer-reviewed studies like (Sargentini *et al.*, 2018) contribute to the wealth of scientific knowledge on the nutritional composition and potential therapeutic properties of donkey milk. By examining the current research landscape, we can uncover valuable insights that support the promotion of donkey milk as a functional food with various health benefits. This comprehensive understanding is essential for harnessing the full potential of donkey milk in promoting human health and well-being.

Modern Applications

In recent years, donkey milk has seen a resurgence in popularity, particularly in the cosmetics and skincare industries. Its moisturizing and nourishing properties make it a sought-after ingredient in luxury skincare products. Moreover, donkey milk soap, creams, and lotions are cherished for their purported ability to soften the skin, reduce wrinkles, and improve complexion.

Conclusion

The various nutrients and bioactive compounds found in donkey milk, such as lysozyme, lactoferrin, and omega-3 fatty acids, have been shown to possess potent antibacterial, anti-inflammatory, and antioxidant properties. These components contribute to the immune-boosting and skin-rejuvenating effects of donkey milk, making it a promising functional food with potential therapeutic uses. Furthermore, the low allergenicity and high digestibility of donkey milk make it a suitable alternative for individuals with cow's milk allergies or lactose intolerance.



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