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Development of an innovative sport drink by *Withania somnifera* and *Entada rheedii* for athletes

Optimal contraction of the muscles, sweat, and oxidation of fast as well as the strong bones are all essentials for building stamina and endurance performance. Many research studies have proven *Withania somnifera* (ashwagandha) as an herb which has responsibility for increased muscle grip and strength in many athletes. *Entada rheedii*, a novel herb is also added in this formulation as well known for its rich mineral properties; mainly calcium. Inadequate intake of calcium can lead to a loss in bone density as well as generate a greater risk of bone fractures and porosity. The core objective of the research study to provide an excellent substitute for sports and energy drinks to the beverage industry by providing an enhanced version of chocolate milk as many studies have proven chocolate milk as a post-recovery beverage for athletes and sportspersons. Powdered milk obtained from natural herbs proves to be the best substitute for chocolate milk providing high protein, lactose, and calcium content. The best nutritional value of added herbal ingredients phytochemical screening and metal analysis of *Withania somnifera* and *Entada rheedii* were carried out. This drink contains 39ppm (ca⁺), 44.5mg minerals 5gm Fat, 11.5% MSNF, 73.5 lactose and 18gm proteins/100ml. The maximum alkaloid content from phytochemical screening and phosphorus in tested samples analyzed through strip test. The proximate composition of the final developed product (powdered milk) for sportspersons is the best alternate of chocolate milk

for athletes. In the future, it will support the growing need and nutrition of humans. It can be upgraded on a commercial scale and it will have high market demand in the future.

Biography: Seema Ashraf contributions in the field of Food Science and Technology are greatly recognized among the academia, testing authorities and in the student's community. She works as a Sr. Research Officer in Nutraceutical and Food Chemistry Research Lab of the HEJ- International Center for Chemical and Biological Sciences (ICCBS) and more than 23 research papers published in reputed national and international journals. She also worked as Chairperson of the department of Food Science & Technology at the Jinnah University which started functioning in 2014. The department is the first in Sindh and students with the highest percentage of marks take admission here. She has developed strong links with the food processing industries in the country and abroad. She established the quality control laboratory for chemical and microbiological testing of dairy products at the Jinnah University. She has worked hard in introducing and promoting the Nutraceutical Foods i.e. the foods which are not only nutritious but also have the power to alleviate and cure diseases. She always desired that Pakistan should benefit from her knowledge and experiences.

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