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## A review on the sustainable production of *Capparis erythrocarpos*: An economically important species for medicine and conservation

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### Abstract

*Capparis erythrocarpos* is an important medicinal plant possessing high efficacy in managing inflammatory conditions, such as pain, arthritis, and blurred vision. In Ghana, the plant grows in the grassy savannah and the thickets of coastal scrub zone. The plant's root bark, stem bark, and leaf extracts have exhibited pharmacological activities from phytochemicals, making them promising resources for anti-inflammatory and pain-relieving medicine. Previous studies have reported that the root bark of *C. erythrocarpos* contained alkaloids, reducing sugar, triterpenes, phytosterols, and saponins. However, the propagation of *C. erythrocarpos* is limited by high seed dormancy, heterozygosity, and slow growth rate of seedlings. Moreover, the widespread use of the plant's roots for inflammation and arthritis medicine results in the uprooting of whole plants, posing a threat to the species' survival. This review provides a comprehensive overview of *C. erythrocarpos*, covering its uses, botanical description, taxonomy, distribution, availability, cultivation, phytochemistry, and economic value. Additionally, the review discusses the existing methods for propagating the plant and the significance of establishing commercial plantations through micropropagation or *in vitro* culture. In Ghana, plant tissue culture has been successfully applied for the micropropagation of planting materials of food crops and medicinal plants, therefore, developing *in vitro* protocols that promote the commercial cultivation of medicinal plants such as *C. erythrocarpos* is crucial to meet the increasing demands for plant medicine in Ghana and the sub-region. In addition, *in vitro* propagation protocols for *C. erythrocarpos* will ensure the conservation of this important medicinal plant. Critical aspects of *C. erythrocarpos*, which require further investigation to ensure its sustainable production and use, are also highlighted. This review underscores the importance of addressing the challenges facing *C. erythrocarpos* concerning its propagation and sustainable use for plant herbal medicine in Ghana and Africa.

**Keywords:** Conservation, medicinal plant, micropropagation