Safety and Glycemic Response of a Mixed *Gymnema inodorum* Beverage in Type 2 Diabetes: A Randomized Pilot Study

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Abstract

Gymnema inodorum is widely used for glycemic control, yet limited evidence exists regarding the safety of ready-to-drink multi-herb formulations when used alongside standard pharmacotherapy. This study aimed to evaluate the short-term safety and dose-dependent metabolic signals of a *G. inodorum*-Mulberry-Chamomile beverage in patients with Type 2 Diabetes Mellitus (T2DM). A 12-week open-label, randomized pilot trial was conducted involving 32 T2DM adults on stable metformin monotherapy. Participants were randomized to consume either 150 mL/day (Group A) or 300 mL/day (Group B) of the herbal beverage. Clinical outcomes included hematological profiles, liver and kidney function, and Fasting Blood Glucose (FBG) levels. Results indicated the beverage was well tolerated with complete compliance and no significant alterations in liver enzymes or serum creatinine. However, a significant dose-dependent divergence occurred. Group A displayed a non-significant reduction in FBG (-6.21 mg/dL) and stable Blood Urea Nitrogen (BUN), whereas Group B exhibited a significant increase in FBG (+22.25 mg/dL; p=0.014) and elevated BUN levels (p=0.007). In conclusion, while demonstrating a favorable safety profile, the lower dose (150 mL) appears superior for maintaining glycemic stability, providing crucial data for future placebo-controlled efficacy trials.

Keywords**:** *Gymnema inodorum, type 2 diabetes, herbal beverage, dose-response, safety profile*