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## In vitro Activity of Hagonoy (*Chromolaena odorata*) and Buyo (*Piper betle*) Leaf Extract in Diabetic Blood Sample

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### Abstract

Chronic wounds, which heal slowly due to disruptions in normal healing phases, are a major concern, especially for diabetic patients experiencing delayed healing from poor circulation and microvascular issues. In a scenario where synthetic approaches face limitations, medicinal plants as natural remedies have become an avenue to address this concern. The study uses a quasi-experimental design to assess and compare the in vitro activity of hagonoy (*Chromolaena odorata*) and buyo (*Piper betle*) leaf extracts, both individually and in combination, on diabetic blood samples. The evaluation specifically focuses on measuring blood clotting time and assessing antibacterial activity. The study found that hagonoy leaf extract was the most effective for blood clotting, with its 5% concentration producing an average clotting time of 10.5 minutes. This result confirms its previously established role in clotting and hemorrhage control. Buyo leaf extract also demonstrated effectiveness, with its 7% concentration achieving an average clotting time of 14.67 minutes. The combined extract, at a 7% concentration, showed its fastest clotting time of 18.83 minutes but was less effective compared to the individual extracts. In terms of antibacterial activity, no significant differences were observed among the extracts. However, buyo exhibited minimum inhibitory concentrations (MIC) of 10% against *S. aureus* and 7% against *E. coli*. In contrast, hagonoy and the combined extracts only demonstrated MIC against *E. coli*. Future researchers are encouraged to use alternative methods for preparing the leaf extracts, and to identify the best concentration for achieving the maximum antibacterial effect. Future researchers may conduct further research that focuses on the wound-healing properties of hagonoy and buyo individually, as well as the combined effects of their extracts. Additionally, investigating the potential effectiveness of hagonoy and buyo leaf extracts, both individually and in combination, against fungal infections could provide valuable insights into their broader therapeutic potential.