Xanthophyllum amoenum as an Eco-friendly Metal Polish

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The indigenous people of Sarawak have long been using Xanthophyllum amoenum (buah langir) fruit skin as natural shampoo for glossy hair. Conventional jewellery and car metal polishes contribute to destruction of aquatic life and environmental pollution. This project investigates the possibility of harnessing Xanthophyllum amoenum skin's properties as a substitute for synthetic metal polishes. The aqueous extract of Xanthophyllum amoenum skin was tested for the presence of saponin, a natural surfactant and phytochemical. Metallic surfaces were soaked in and polished with the extract to investigate how its concentration, freshness, temperature and the type of surface polished affected the extract's effectiveness. The extract was compared with conventional metal polish from aspects of effectiveness and pH. 10ml of Xanthophyllum amoenum skin aqueous extract formed 300% of froth, indicating presence of saponin. 20% concentration of the extract is as effective at polishing metals as greater concentrations, with up to 73.36% polishing effect. The aqueous extract's shelf life is approximately 1 week, though its dried form can be kept for years. Different temperatures of the extract show no significant difference with each other, with room temperature being the most efficient temperature. The extract is more effective at polishing metallic surfaces, especially silver, with 71.80% polishing effect. At 20% concentration, the extract is 64.42% more effective at polishing surfaces than conventional polish at 20% concentration. The extract's pH is 5.4, which is slightly acidic but close to neutral. I conclude that Xanthophyllum amoenum skin aqueous extract can be used as an efficient, user-friendly and cost-effective metal polish.

Awards Won: