

## ***Evaluation of Physicochemical Properties of Extracted Mucilages and Powders from Three Selected Plants in Sri Lanka***

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As natural mucilages are non-toxic, inexpensive and stable, this study evaluated the physicochemical properties of mucilages and powders extracted from fruits of *Dillenia retusa* (DR), leaves of *Aloe vera* (AV) and *Neolitsea cassia* (NC) with the aim of analyzing the gelling property to develop as pharmaceutical excipient. The physicochemical properties such as solubility, pH, colour, texture, loss on drying, swelling index and density were assessed for extracted mucilages, and freeze-dried powders. Both DR extracts dissolved readily in water at room temperature and 45 °C, but less soluble in organic solvents. Mucilage and powder observed pH 4.6 - 4.2 and pH 4.8 - 4.1 over 70 days, with light brown and dark brown colours along with 98.0% and 97.1% of loss on drying respectively with medium swelling index (10.0%). Bulk density, tapped density, and bulkiness of powders were 0.2 g/ml, 0.3 g/ml, and 5.0 ml/g. The solubility of DR and AV were comparable. AV mucilage and powder observed pH 3.7–3.3 and pH 4.1–3.4 over 70 days, with slightly yellow and dark yellow colours respectively with lowest swelling index (4.0%) along with 99.7 % and 99.0% loss on drying for powder and mucilage respectively. Its tapped density (0.09 g/ml) was the lowest, while bulkiness (7.1 ml/g) was the highest. NC mucilage dissolved in organic solvents, while powders displayed similar solubility in water at both temperatures but not in organic solvents. NC mucilage and powder observed pH 5.8 - 5.1 and pH 6.2 - 5.1 over 70 days with dark green and light green colours respectively along with 90.6% and 96.2% loss of drying respectively with highest swelling index (11%). According to results, slight variations in physicochemical properties were observed in mucilages and powders. Both mucilages and powders had suitable solubility, density, swelling index, pH and organoleptic properties to develop as an excipient and these plant materials will be considered for further analysis of gelling property.

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