

**COMPARATIVE EVALUATION AND ANALYSIS OF DIFFERENT PURIFICATION
METHODS OF *Plumbago indica***

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Plumbago indica is a commonly used medicinal plant in Ayurveda and traditional medicine. According to *Agada tantra* (Toxicology), it is considered an irritant poison, requiring proper purification before use. Various purification methods are described in authentic texts. This study aimed to compare the effectiveness of different purification methods for *Plumbago indica* and to identify the most suitable method. Samples were purified separately using cow's milk, lime water, and coconut milk. The purity and quality were evaluated using organoleptic (colour, odour, texture), physicochemical (total ash, water-soluble ash, acid-insoluble ash, moisture content, pH), and phytochemical (alkaloid, saponin, flavonoid contents) analyses. Thin Layer Chromatography (TLC) and High-Performance Thin Layer Chromatography (HPTLC) were performed to confirm the presence of chemical constituents. Results indicated variations in above parameters. The sample purified with lime water showed the lowest total ash (0.3%), water soluble ash (0.15%), Alkaloid content (1.6%) and the highest moisture content (11.3%), pH (6.16). The sample purified with cow's milk showed the highest total ash (1.7%), saponin content (9.44%), flavonoid content (7.06%) and the lowest acid soluble ash (0.25%), Moisture content (7.5%). The sample purified with coconut milk showed the highest water-soluble ash (1.0%), acid insoluble ash (2.65%), alkaloid content (3.8%) and the lowest pH (5.08), saponin content (4.18%), flavonoid content (3.54%). TLC and HPTLC profiles confirmed chemical differences among the samples. In the samples purified with cow's milk, lime water and coconut milk showed respectively 9, 8 and 11 peaks in HPTLC. The study concludes that the purification method significantly influences the chemical composition of *Plumbago indica*. These findings contribute to improving purification practices in traditional medicine and encourage further research in this area.

Key words: Ayurveda, *Plumbago indica*, purification methods, traditional medicine, phytochemical analysis