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Phytochemical Screening of *Achyranthes aspera* Linn

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1. Introduction

Botanical Description

Plants are small, much branched, monoecious perennial subshrub up to 0.8–1×0.8 m. Rootstock stout, woody. Stems somewhat succulent at first, ribbed, becoming basally woody with age, denselycovered in velutinous, appressed hairs. Leaves op-posite, densely clustered toward branch tips 40–50×25–30 mm, spreading to decurved, mostly broadlyovate, ovate-orbicular or elliptic; apex blunt to abruptly sub acute, sometimes very shortly apiculate; base attenuate; lamina somewhat fleshy, purple-grey, veins often purple, abaxial and adaxial surfaces silkycanescent, margins crenulate to crenate. Petioles 5–10mm long, pink, fleshy, velutinous, basal abscis-sion zone present. Inflorescence a terminal erectspike, 150–200mm long; peduncle 15mm long, fleshy, white-villous; spike rachis fleshy, white-vil-lous to purple-villous; flowers bisexual, retrorse, sessile, 180–200 per spike, these spaced initially at 10-mm intervals along rachis, diminishing rapidly to <1-mm intervals toward inflorescence apex. Bract persistent on rachis, ovate to lanceolate 3–3.5×0.5–1mm, strongly retrorse, chartaceous, weakly keelednear apex only, pale white, margins entire, apex acute, sometimes with a small, 0.1–0.2-mm-long pale yellow mucro. Bracteoles 2; abscissing with senescent flowers; broadly ovate, 0.2–1mm long, chartaceous hyaline, lustrous, pale caramel; margins entire; strongly keeled, keel lustrous, caramel brown, extending well beyond bract as a hardened, chan-nelled, strongly recurved, falcate spine 4–5mm long. Perianth segments (sepals) 5, lanceolate, centralportion pale caramel-brown but distinctly pink-tinged, margins pale yellow or off-white opaque, hyaline; segments sub equal, 4.5–6mm, channelled. Stamens 4, connate at base, the filaments 0.5–1mm, alternating with 4 narrowly spathulate, 0.4×0.6 mm, white-hyaline, petaloid, fimbriate-argined pseudo staminodes; anthers 0.4–0.6mm, yellow, bilocular, dehiscing via longitudinal slits; pollen yellow. Style 0.6–1mm, pink to pale orange, aris-ing from a fleshy papillate style base 0.8mm diam.; stigma brown, truncate. Utricle 2–2.5mm long, dark brown, turbinate, chartaceous, surmounted by the dry, somewhat woody, style base. Seed 1.2–1.8×0.9–1.2mm, ovoid to ellipsoid, dark chestnut brown.

Preliminary phytochemical investigations

Preliminary phytochemical investigation of the selected plant materials were done using various phytochemical tests including Dragendroff and Mayer's tests for alkaloids, alkaline reagent test for flavonoids and Kellar-Killiani test, Froth formation test, Salkowski test for cardiac glycosides, glycosides saponins, and steroid-terpenoid, respectively. Alkaloids, flavonoids, saponin glycosides, steroids and terpenoids were found strong positive in *Achyranthus aspera*.

Showing preliminary phytochemical screening of selected plant materials

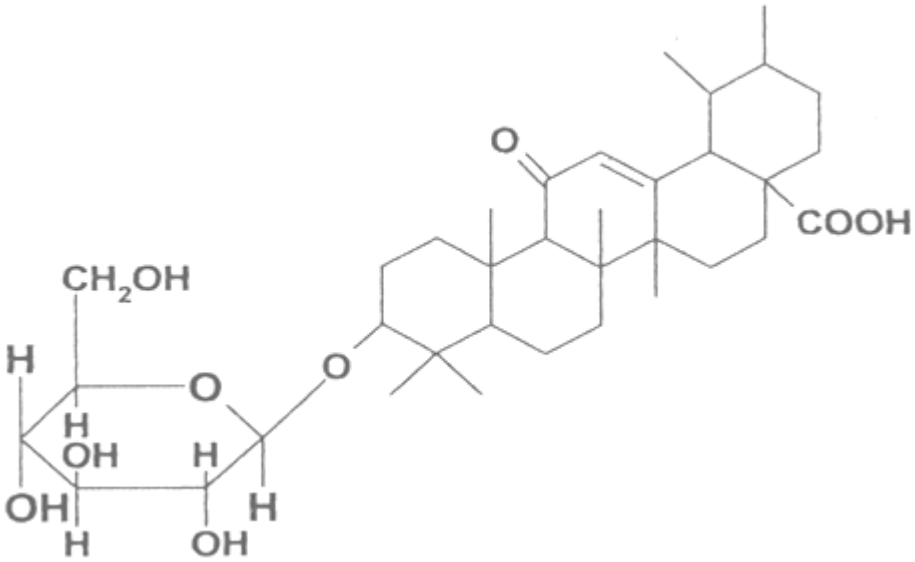
S. No.	Presence of Components		Name of the test performed	*Achyranthus aspera*
1	Alkaloids		Dragendroff's reaction	++
			Mayer's reaction	-
2	Flavonoids		Alkaline reagent test	++
3	Glycosides	Cardiac Glycosides	Keller-Killiani test	-
		Saponin Glycosides	Froth formation test	++
		Steroids and triterpenoids	Salkowski test	++

2. Spectral Analysis

ISOLATION AND STRUCTURAL STUDY OF THE SAPONIN 11 KETO Δ12:13 URSENE -28-OIC-3-O-ß-D-GLUCOPYRANOSIDE FROM ACHYRANTHUS ASPERA ISOLATION OF THE SAPONIN

The air dried, powdered and defatted plant Achyranthus aspera (Natural order-Amaranthceae) was extracted with rectified spirit in round bottomed flask on an electric water bath to which a reflux condenser was attached. The rectified spirit extract was filtered while hot. The extract thus obtained was concentrated under reduced pressure to have a þrown viscous mass.

The brown viscous mass was extracted successively with benzene, chloroform, ethyl acetate and then the residue was dissolved in methanol the excess of solvent ether was added in this methanol extract to precipitate the saponin from which the solvent was removed by decantation. The precipitated saponin was again dissolved in methanol.



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