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FLAVONOIDS FROM SOME ASTERACEOUS MEDICINAL PLANTS OF RAJASTHAN DESERT

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Ethanol extract of leaves and flowers of two Asteraceous medicinal plant species of Rajasthan desert showed quercetin and kaempferol as major flavonoids. The maximum total flavonoid content (1.40 mg/g.d.w.) was found in leaves of *Pulicaria crispa* and minimum (0.30 mg/g.d.w.) in flowers of *Xanthium strumarium.*

Keywords : Asteraceous; Antimicrobial activities; Kaempferol; Quercetin.

The flavonoids are generally distributed throughout the plant kingdom, provide colour to flowers and fruits and some are pathologically important to the plants. Arid zone plants have been studied for flavonoid contents and their screening for antimicrobial activities by many workers[1-5].

The leaves and flowers of *Pulicaria crispa* and *Xanthium strumarium* have been analysed for the isolation and identification of flavonoid contents. The samples were collected from Harsholaw Pond area of Bikaner. The dried, powdered leaves and flowers were separately Soxhlet extracted in 80% ethanol for 24 hours. Each of the extracts was concentrated and concentrate re-extracted with Petroleum ether (Fraction-I), ether (Fraction-II) and ethyl acetate (Fracton-III) in succession. Fraction-I was rejected due to its being rich in fatty substance. Fraction-II of each of the test samples was hydrolysed by refluxing with 7% H_2SO_4 for 2 hours. The mixture was filtered and the filtrate extracted with ethyl acetate. Ethyl acetate layer was washed with distilled water to neutrality[6,7].

Concentrated ether and ethyl acetate fractions were applied on TLC plates along with standard reference compounds and the plates developed with the solvent system n-butanol, acetic acid and water (4:1:5 upper layer) when kaempferol and quercetin were detected. The compounds were isolated by preparative TLC and crystallized, mp (quercetin 309^0 and kaempferol 271^0-273^{0}C) mmp (undepressed). IR spectra compared well with their authentic samples. Quantitative estimation of quercetin and kaempferol was carried out colorimetrically[8,9].

Among all the plant samples tested the total flavonoid contents were found to be maximum (1.40 mg/g.d.w.) in leaves of *Pulicaria crispa* while minimum (0.30 mg/g.d.w.) in the flowers of *Xanthium strumarium.*

The maximum quercetin (0.86 mg/g.d.w.) was found in leaves of *Pulicaria crispa* while minimum (0.12 mg/g.d.w.) in the flowers of *Xanthium strumarium.* Maximum amount of kaempferol (0.54 mg/g.d.w.) was found in leaves of *Pulicaria crispa* and minimum (0.18 mg/g.d.w.) in flowers of *Xanthium strumarium.*

Table 1. Flavonoid contents (mg/g.d.w.) from leaves and flowers of *Pulicaria crispa* and *Xanthium strumarium.*

Plants	Plant parts	Quercetin	Kaempferol	Total contents
Pulicaria crispa	Leaves	0.86	0.54	1.40
	Flowers	0.42	0.29	0.71
Xanthium strumarium	Leaves	0.30	0.49	0.79
	Flowers	0.12	0.18	0.30

The present investigation indicates that the asteraceous medicinal plants of Rajasthan desert retain the potentialities to synthesize the flavonoid contents.

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