

PHYTOCHEMICAL AND PHARMACOLOGICAL STUDIES ON *FICUS BENGALENSIS*, LINN. (Preliminary Report)

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Ficus bengalensis, Linn. is reputed to possess varied medicinal properties i.e. antiseptic, antidiarrhoeic, antidyentery, antidiabetic etc. (4, 5). Though the claims of its usefulness as an anti diabetic agent have been investigated by many workers (1, 2, 3 & 7), work with respect to its other alleged pharmacological properties is lacking. The present communication gives a preliminary report of the phytochemical and pharmacological properties of this potentially useful and non-toxic (8) plant.

MATERIALS AND METHODS

Phytochemical studies

Authenticated samples of the bark and leaves of *Ficus bengalensis* were obtained. These were air dried and pulverized. Moisture content, total ash, water soluble ash, acid soluble ash and percentage extractibilities with different solvents (ether, 90% ethanol and distilled water) were determined. Qualitative analysis was done for the presence of alkaloids, reducing sugars, glycosides tannins, resins, saponins, volatile oils and steroids.

Pharmacological Studies

Pharmacological investigations were carried out with the hot aqueous extracts of the bark and leaves of *Ficus bengalensis*. The extracts were studied for their effect on dog B.P. and respiration, frog heart, mammalian heart and isolated smooth and skeletal muscles.

RESULTS AND DISCUSSION

Phytochemical Studies

The results are presented in Table I.

Hot and cold aqueous extracts, ethereal extracts, rectified spirit extracts and crude drug powders were used for phytochemical studies.

These revealed the presence of reducing sugars, glycosides, tannins and volatile oils and the absence of alkaloids, resins, saponins and steroids.

Pharmacological Studies

Aqueous extracts of both bark and leaves in doses ranging between 5mg. and 20mg. exhibited negative inotropic and hypotensive (15-25 mm) actions in dogs. The hypotensive effect was more

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TABLE I
Phytochemical studies on *Ficus bengalensis* Linn.

S. No.	Value	Percentage	
		leaf	Bark
1	MOISTURE	6.000	5.370
2	TOTAL ASH	12.290	9.116
3	WATER SOLUBLE ASH	6.422	8.938
4	WATER INSOLUBLE ASH	93.578	91.062
5	ACID SOLUBLE ASH	42.029	39.947
6	ACID INSOLUBLE ASH	57.971	60.053
7	EXTRACTIBILITY WITH DIFFERENT SOLVENTS		
(a)	Solvent ether	2.910	3.000
(b)	Ethanol 90%	20.625	10.500
(c)	Distilled water	4.500	5.000

marked with the bark extract. In most of the experiments, the pattern of hypotensive effect, with this extract was first a slight fall, followed by a slight rise and then a gradual and consistent fall, lasting for about 5 minutes. The cardiac actions were not found to be mediated through cholinergic receptors or vagus. Deshmukh *et al.* (6) reported only 1.59% potassium in the ash of this plant. The cardiovascular actions elicited by the extracts can not, therefore, be attributed to their potassium content.

The extracts did not affect either rate or depth of respiration of dogs at the doses used (5-20 mg.). The leaf and bark extracts in doses of 1.0 to 2.5 mg. induced marked relaxation in the isolated rat ileum and virgin rat uterus preparations. The relaxation was, however, not proportional with the doses.

In doses of 2-5 mg., the extracts caused inhibition of acetylcholine (5-10 μ g) induced contraction of the isolated rat ileum (25-50%), isolated rat uterus (75%), and isolated rectus abdominis muscle of frog (50-100%). Posterior pituitary (one I.U.) induced contractions of the rat uterus were also inhibited (50%).

The perusal of the above results suggests that the extracts of *Ficus bengalensis* exert a direct depressant action on the uterine and cardiac muscles and also a cholinergic blocking action on smooth and skeletal muscles.

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