ANTISPASMODIC ACTIVITY OF THE CRUDE AND PURIFIED OIL OF MESUA FERREA SEED.

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***ABSTRACT**: The crude native oil and purified seed oil of Mesua ferrea were studied for their effect on isolated rat il eum by taking standard spasmodic and antispasmodic drugs. The crude oil of seed showed significant antispasmodic activity but purified oil was devoid of any antispasmodic activity.*

INTRODUCTION

Mesua ferrea Linn. (Guttiferae) is a medium to lager evergreen tree which flourishes mostly in mountains and plains of Bengal and Assam, in eastern Himalayas as well as in western & western parts of south India, the most popular name is Ironwood, the mesua sees is oval and average size is 2.5 cm in length & 1.2 cm thick. The oil content in seed was reported to be 52.5%[1]. The seed oil contains number of medicinally active compounds belonging to 4-penl coumarin derivatives. The crude native oil showed significant antispasmodic, antibacterial and hypotensive activity[2].

MATERIALS AND METHODS

The mesua seed were collected from the campus of Dibrugarh University, Assam, petroleum ether extracts of seed were filtered under vacuum. The crude oil was degummed, bleached and defined the methods of *Zeitoum et al*[3]. The purity of oil was checked performing tin layer cromatography[4].

Antispasmodic activity of test oil samples (cruds & purified oil) was studied *in vitro on* rat ileum. Before starting the experiment, the rat was kept on fasting for 24 hrs.

To evaluate the antispasmodic activity of oil, a rat was killed by a blow on the head. The abdomen was opened and ileum was exposed a length of 2.5 -3.0inches of ileum was removed and placed in a Petridis containing tyrode's solution with the help of ileum was cleaned several times by passing Tyrode's solution with the help of pipette. This part of ileum was fixed in organ bath and s kept relaxed for ten minutes. After complete relaxation of tissue, different standard spasmodic, antispasmodic and crude as well as purified seed oil was added in organ bat one by one and normal response s recorded on Kymograph. A lapse of ten minutes was given between the addition of two drugs in organ bath and during this ten minutes 3-4 washing of tissue were done with Tyrode's solution maintained at 37^{o}C. Throughout the experimental period tissues were continuously supplied with oxygen through oxygen delivery tube.

RESULT AND DISCUSSION

Result are summarized in table -1 acetylcoline and carbachol which are established spasmodic drugs cause contraction of rat ileum to the extent of 2.61

Pages 74 - 75

& 3.20 cm, respectively. The crude oil at both concentration i.e 1:5 and 1:10 and Atropine did not induce their own response at ileum but partially blacks the normal response of acetylcholine. In presence of crude oil at concentration of 1:5 & 1.10, the normal contraction of acetylcoline was reduced to 70 % &86%, respectively. Normal response of acetylcholine in presence of atropine was reduced to 55%. The results reveal that crude oil of Mesua ferrea seed has antispasmodic activity but purified oil is not having any such type of activity.

Table -1

Antispasmodic activity of crude and purified oil of mesua ferrea seed as compare to standard spasmodic and antispasmodic drug on rat ileum.

S.No	Drug	Conc. of drug	Mean contraction (cm)	% activity
1.	Acetylcholine	10 µg/ml	2.61	100
2.	Carbachol	10 µg/ml	3.12	12.3
3.	Crude oil	1:5,1:10	-	-
4.	Acetylcholine in presence of crude oil	10 µg/ml; 1:5,1:10	1.842.24	7086
5.	Atropine	100 µg/ml	-	-
6.	Acetylcholine in presence of atropine	10 µg/ml 100 µg/ml	1.44	55
7.	Purified oil	1:5,1:10	-	-

* Mean concentration (in cm) is mean value of seven readings.

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