

A COMPARATIVE STUDY OF SENNOSIDE CONTENT OF *CASSIA* SPECIES

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(Received July 24, 1985; revised April 28, 1986)

The sennoside content of the leaves and pods of *Cassia angustifolia*, *C. fistula* and *C. holosericea* has been estimated spectro-photometrically following ferric chloride oxidation and hydrolysis in acidic medium. *C. holosericea* has been studied for the first time for its sennoside content.

INTRODUCTION

C. angustifolia Vahl. (syn. *C. lanceolata* Prodr. vern. Sonamakki (N.O.,/Caesalpinodae) is a less hairy perennial with yellow flowers and lanceolate leaflets having pods 2-3 cm long. It is distributed throughout India and Pakistan, Arabia and tropical Africa.

C. fistula L., vern. *amaltas*, is a small tree with large leaflets having yellow flowers pods 30-50 cm long. It is distributed in India, Pakistan, Ceylon, Malaya and China.

C. holosericea Jafri and Ali. vern. *jangli senna* is a perennial, leaflets ovate-oblong with yellow flowers, pods 2-2.5 cm long. It is commonly distributed in Pakistan, Arabia and tropical Africa [1].

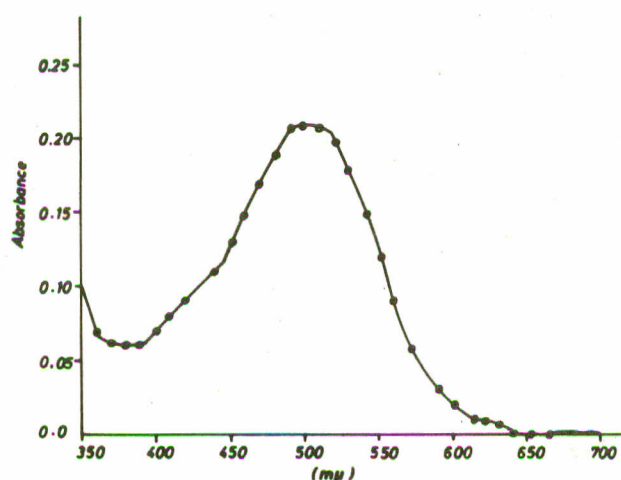


Fig. 1. Absorption vs wavelength curve of free anthroquinone in IN KOH.

Senna species are well known for their medicinal importance and are reputed as being laxative and purgative [2, 3].

C. holosericea has been found to show bacteriostatic action against 14 human pathogenic bacteria [4]. As no chemical work has been reported in literature on this plant, it was considered appropriate to carry out a comparative study of its sennoside content with other senna species found in Karachi region.

The purgative activity of senna species was attributed to the sennoside present [5]. Quantitatively, an assay of sennoside is therefore, a measure of the purgative activity [6].

EXPERIMENTAL

The leaves and pods of the above three senna species were collected from plants growing wildy in the sandy soil near the PCSIR Laboratories Campus. The collected samples were air-dried for 3 days and this material was used for estimation.

The absorbance was measured in spectronic 21, Bausch and Lomb. Fig. 1. The procedure followed was that described by Lemli [7]. The percentage of total sennoside is given in Table 1.

Table 1. Total sennoside content of *Cassia* species.

S.No.	Name of the plant	Part of the plant examined	Total sennoside content (%)
1.	<i>C. angustifolia</i>	leaf	2.95
		pod	5.10
2.	<i>C. fistula</i>	leaf	1.20
		pod	1.14
3.	<i>C. holosericea</i>	leaf	1.39
		pod	0.84

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Table I

Sample	R _f of standards	R _f of sample
Identified sennoside	0.1182	0.1182
Identified	0.1447	0.1447
Identified	0.1485	0.1485
Identified	0.1611	0.1611
Identified	0.1647	0.1647
Identified	0.1711	0.1711
Identified	0.1781	0.1781
Identified	0.1817	0.1817
Identified	0.1853	0.1853
Identified	0.1889	0.1889
Identified	0.1925	0.1925
Identified	0.1961	0.1961
Identified	0.2025	0.2025
Identified	0.2090	0.2090
Identified	0.2155	0.2155
Identified	0.2220	0.2220
Identified	0.2285	0.2285
Identified	0.2350	0.2350
Identified	0.2415	0.2415
Identified	0.2480	0.2480
Identified	0.2545	0.2545
Identified	0.2610	0.2610
Identified	0.2675	0.2675
Identified	0.2740	0.2740
Identified	0.2805	0.2805
Identified	0.2870	0.2870
Identified	0.2935	0.2935
Identified	0.3000	0.3000
Identified	0.3065	0.3065
Identified	0.3130	0.3130
Identified	0.3195	0.3195
Identified	0.3260	0.3260
Identified	0.3325	0.3325
Identified	0.3390	0.3390
Identified	0.3455	0.3455
Identified	0.3520	0.3520
Identified	0.3585	0.3585
Identified	0.3650	0.3650
Identified	0.3715	0.3715
Identified	0.3780	0.3780
Identified	0.3845	0.3845
Identified	0.3910	0.3910
Identified	0.3975	0.3975
Identified	0.4040	0.4040
Identified	0.4105	0.4105
Identified	0.4170	0.4170
Identified	0.4235	0.4235
Identified	0.4300	0.4300
Identified	0.4365	0.4365
Identified	0.4430	0.4430
Identified	0.4495	0.4495
Identified	0.4560	0.4560
Identified	0.4625	0.4625
Identified	0.4690	0.4690
Identified	0.4755	0.4755
Identified	0.4820	0.4820
Identified	0.4885	0.4885
Identified	0.4950	0.4950
Identified	0.5015	0.5015
Identified	0.5080	0.5080
Identified	0.5145	0.5145
Identified	0.5210	0.5210
Identified	0.5275	0.5275
Identified	0.5340	0.5340
Identified	0.5405	0.5405
Identified	0.5470	0.5470
Identified	0.5535	0.5535
Identified	0.5600	0.5600
Identified	0.5665	0.5665
Identified	0.5730	0.5730
Identified	0.5795	0.5795
Identified	0.5860	0.5860
Identified	0.5925	0.5925
Identified	0.5990	0.5990
Identified	0.6055	0.6055
Identified	0.6120	0.6120
Identified	0.6185	0.6185
Identified	0.6250	0.6250
Identified	0.6315	0.6315
Identified	0.6380	0.6380
Identified	0.6445	0.6445
Identified	0.6510	0.6510
Identified	0.6575	0.6575
Identified	0.6640	0.6640
Identified	0.6705	0.6705
Identified	0.6770	0.6770
Identified	0.6835	0.6835
Identified	0.6900	0.6900
Identified	0.6965	0.6965
Identified	0.7030	0.7030
Identified	0.7095	0.7095
Identified	0.7160	0.7160
Identified	0.7225	0.7225
Identified	0.7290	0.7290
Identified	0.7355	0.7355
Identified	0.7420	0.7420
Identified	0.7485	0.7485
Identified	0.7550	0.7550
Identified	0.7615	0.7615
Identified	0.7680	0.7680
Identified	0.7745	0.7745
Identified	0.7810	0.7810
Identified	0.7875	0.7875
Identified	0.7940	0.7940
Identified	0.8005	0.8005
Identified	0.8070	0.8070
Identified	0.8135	0.8135
Identified	0.8200	0.8200
Identified	0.8265	0.8265
Identified	0.8330	0.8330
Identified	0.8395	0.8395
Identified	0.8460	0.8460
Identified	0.8525	0.8525
Identified	0.8590	0.8590
Identified	0.8655	0.8655
Identified	0.8720	0.8720
Identified	0.8785	0.8785
Identified	0.8850	0.8850
Identified	0.8915	0.8915
Identified	0.8980	0.8980
Identified	0.9045	0.9045
Identified	0.9110	0.9110
Identified	0.9175	0.9175
Identified	0.9240	0.9240
Identified	0.9305	0.9305
Identified	0.9370	0.9370
Identified	0.9435	0.9435
Identified	0.9500	0.9500
Identified	0.9565	0.9565
Identified	0.9630	0.9630
Identified	0.9695	0.9695
Identified	0.9760	0.9760
Identified	0.9825	0.9825
Identified	0.9890	0.9890
Identified	0.9955	0.9955

Thin layer chromatographic examination of sennosides. The chromatographic technique was carried out on Whatman Paper No. 1 (20x25 cm). The paper was pre-treated with caustic soda and washed with water. The chromatogram after drying in an oven at 100°C for 10 min. A single spot was observed for sennoside. The results are shown in Table I.

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