SAPOGENINS AT DIFFERENT PLOIDY LEVELS OF *ASPARAGUS*

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THE genus *Asparagus* of the family Liliaceae is of medicinal importance[1] due to its steroidal sapogenins which is used as precursors of many pharmacologically active steroids. Several species of the genus have been studied for sapogenin content[2-6], even then there are species which are still unexplored. As different species of *Asparagus* are in a polyploid series[7] with the basic chromosome number $n = 10$, the present investigation was undertaken to identify and compare the distribution of sapogenins in seven different species belonging to three ploidy levels[8].

Plants were grown under identical habitat conditions in the departmental garden, from which roots were collected during active growth period. Dried, powdered roots were hydrolyzed with 30% V/V hydrochloric acid for 4 hr, filtered and neutralized. The hydrolyzed root residue was then dried at 60°C and Soxhlet extracted with chloroform for 30 hr. The chloroform extract was concentrated and analyzed for sapogenin by chromatography.

The extract was applied to thin-layer plates precoated with silica gel G and developed with chloroform-acetone (80:20). Liebermann-Burchard reagent[9] was used as the detection reagent. Standard sapogenin samples were used along with the extracts.

A gas chromatograph (Hewlett Packard model 5730A) containing U-shaped steel column (20″ × 3/16″) with the stationary phase 10% UCW-982, 80–100 WAW-DMCS was used for sapogenin analysis. The column temperature was 240°C and N_2 was the carrier gas at a pressure of 3 kg/cm^2.

On the basis of TLC and GLC, diversity in distribution of sapogenin in different species of *Asparagus* was recorded (table 1). The three diploid species were not identical in their sapogenin distribution showing both sarsasapogenin and diosgenin. But the two tetraploids yielded sarsasapogenin and both the hexaploid species showed diosgenin. The isolation of sarsasapogenin form *A. cooperi* and diosgenin from *A. pyramidalis* and *A. robustus* has not been recorded so far as evidenced from previous literature.

Table 1. *Distribution of sapogenins in different species of Asparagus*

Species	Somatic chromosome number	Sapogenin*
A. racemosus Willd.	20	S
A. plumosus Baker.	20	D
A. pyramidalis.	20	D
A. cooperi Baker.	40	S
A. falcatus Linn.	40	S
A. robustus Hort.	60	D
A. sprengeri Regel.	60	D

*S = Sarsasapogenin; D = Diosgenin

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ON THE OCCURRENCE OF A RARE LICHEN FROM INDIA

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LITHOTHELIUM, a small and rare lichen genus consisting of three species, is known to be solely confined to