

SUMMARY

POLLEN ANALYSIS OF THE MEMBERS OF FAMILY CUCURBITACEAE

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The analysis of pollen size, shape, exine structure and ornamentations etc when investigated at interspecific level forms a marker to establish taxonomic boundaries with certainty and these features are significant enough to supplement the traditional morphology based description. Pollen analysis is a useful link to demonstrate the status of genera and species confined to families. Considering the importance of pollen morphology in the delimitation and systematics of taxonomic groups, the Cucurbitaceae, a palynological study of the representatives was undertaken, with the aim of finding additional characters that might prove useful in the circumscription of the species so far recognized. The present study envisages the objectives like pollen morphology of the members of Cucurbitaceae, to identify the pollen markers for the intergeneric relationships among the taxa in the Family Cucurbitaceae and to develop a pollen key.

Flowering plant species of the members of Cucurbitaceae were collected from different localities in the states of Kerala and Tamilnadu as per standard collection techniques. Acetolysed pollen were studied and photographed using SEM.

The cucurbits are euripalynous, pollen being colpate, porate, pororate and the exine being psilate, reticulate, granulose, spinate, spinulate, striate, undulate etc. On the basis of pollen morphology the plants under investigation are classified as follows:

I Pollen 3 zonocolpate

Grains spheroidal

(i) Exine granulose and microreticulate

(a) Average size 69.53 μ

Luffa acutangula (L.) Roxb.

(b) Average size 68.06 μ .

Luffa cylindrica (L.) M.Roem.

Grains suboblate

(i) Exine reticulate

(a) Average size 44.86 μ .

Benincasa hispida (Thunb.) Cogn.

Grains prolate

(i) Exine psilate

(a) Average size 12.38 μ .
Cayaponia quinqueloba (Raf.) Shinnars.

(b) Average size 15.56 μ .
Melothria perpusilla (Blume) Cogn.

(ii) Exine reticulate

(a) Average size 11.15 μ .
Coccinia grandis (L.) Voigt.

(b) Average size 22.68 μ .
Momordica dioica Roxb. ex Willd.

(iii) Exine reticulate and spinate

(a) Average size 21.22 μ .
Diplocyclos palmatus (L.) C. Jeffrey.

Grains subprolate

(i) Exine reticulate (microbrochi)

(a) Average size 53.06 μ .
Solena amplexicaulis (Lam.) Gandhi.

(ii) Exine reticulate (heterobrochi)

(a) Average size 44.30 μ .
Momordica charantia L. var. *charentia*
(b) Average size 38.55 μ .
Momordica charantia var. *muricata*

Grains prolate spheroidal

(i) Exine reticulate

(a) Average size 15.92 μ .
Zehneria mysorensis var. *mysorensis* Wight.

(b) Average size 10.29 μ .
Zehnerthwaitesii (Schweinf.) C. Jeffrey.

II. 7-8 zonocolporate

Grains subprolate

(i) Exine undulate

(a) Average size 53.06 μ .
Trichosanthes anaimalaiensis Bedd.

III 3 zonoporate

Grains spheroidal

(i) Exine reticulate

(a) Average size 38.52 μ .
Trichosanthes tricuspidata Lour. *Tomentosa*

IV 3 zonoporate

Grains spheroidal

(i) Exine undulate

(a) Average size 42.51 μ .
Trichosanthes tricuspidata Lour. var. *tricuspidata*

(b) Average size 49.11 μ .
Trichosanthes cucumerina L.

(ii) Exine reticulate and striate

(a) Average size 44.22 μ .

Lagenaria siceraria (Molina) Standl.

Grains oblate

(i) Exine reticulate(micro)

(a) Average size 16.24 μ .

Mukia maderaspatana (L.) M.Roem.

(b) Average size 22.68 μ .

Cucumis melo L.

(c) Average size 21.22 μ .

Cucumis sativus L.

Grains suboblate

(i) Exine reticulate

(a) Average size 24.48 μ .

Cucumis prophetarum L.

(V). 10-12 zonoporate

Grain spheroidal

(i) Exine spinate and granulose

(a) Average size 192.54 μ .

Cucurbita moschata Duchesne

(ii) Exine spinulate and psilate

(a) Average size 171.81 μ .

Cucurbita pepo L.

