

## SEED SURFACE PATTERN IN SOME MALVACEAE

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The present study reports supermodern patterns under SEM in three member of Malvaceae

**Keywords :** Malvaceae; Reticulate; SEM; Spermodern.

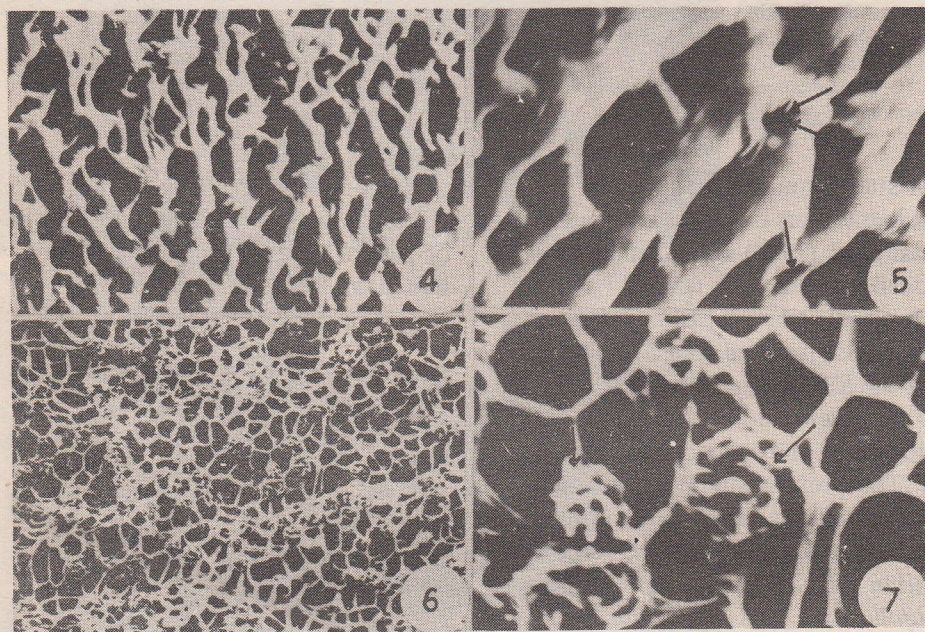
SEM studies on the seed surface patterns in members of Malvaceae are rare. Kumar *et al.* (1987) studied structure of the seed coat in some taxa of Ureneae (Malvaceae) under the SEM. Kumar and Singh (1989) reported seed coat patterns under the SEM in some species of *Malvastrum*. Such studies are helpful for phylogenetic and taxonomic consideration. The present study reports spermodern patterns under SEM in three members of Malvaceae. Seeds of *Abutilon indicum* (Linn.) Sweet, *Sida cordifolia* Linn. and *Sida ovata* forst f. were collected from the semi - arid zones of district Jhunjhunu in Rajasthan. Seeds were scanned in the same region (i.e. region just below the hilum) in all the three taxa using a Philips Model-525 scanning electron microscope at 25 KV.

In *Abutilon indicum* the spermodern shows well-defined ridges demarcating polygonal areas. The adjacent polygonal areas are connected through well marked but thinner ridges (Fig.1). The cell boundaries are quite distinct and the ridges are simple. Thin sinuate ridges occur in the large areas

enclosed within the connecting ridges (Figs.1,2). At the edges a reticulae type of pattern is seen; unicellular, finger - like hairs are also seen at the edge (Fig.3). In *Sida cordifolia* the seed sur-



Figs. 1-3 *Abutilon indicum*  
(SEM Photographs) x300, x900, x480.



Figs. 4-5 *Sida cordifolia*. Arrows in Fig. 5 indicate pits x800, x2500.

Figs. 6-7 *Sida ovata*. Arrow in Fig. 7 indicates smaller areas with thicker walls. x280, x1400.

face shows more or less regularly distributed thick ridges. These are connected with each other by several less thick cross ridges. The ridges surround elongated grooves of unequal length (Figs. 4,5). Thus, the seed coat gives a reticulate appearance. At many sites, rectangular or polygonal pits surrounded by thick boundaries are noticed (Fig.5). The seed surface in *Sida ovata* presents a reticulate pattern (Fig.6.). The areas enclosed by the reticulae differ in size and shape, some rectangular and others

polygonal. Distributed at irregular intervals there are many smaller polygonal areas enclosing a more compact reticulation of highly thickened walls (Fig.7). The seed coat has a thin coating of wax in all the three species.

The seed coat in the three species is similar in having a ridged pattern. But the arrangement of ridges is different and characteristic of each species - the ridges enclose grooves which are longer than broad in *S. cordifolia*; these areas are rectangular to polygonal in *S. ovata*,

and in *Abutilon* they are polygonal. The pits present in *S. cordifolia* as suggested for *Malvastrum limense* (Kumar and Singh, 1989) may be of help in absorption of water during germination. The ridges reported in *Sidalcea marvaeflora* (Kumar *et al.*, 1987) resembles those in *S. cordifolia* except that in the former, they are parallel.

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