

ABSTRACT

The present study is carried out to access the palynomorphic characterization and taxonomic studies of plant of Tehsil Gojra, Pakistan by using Light and Scanning Electron Microscopy. A total of 72 plant species belonging to 31 different families are collected. Out of that 12 are monocotyledonous and 60 are dicotyledonous.

The pollen characteristics i.e. shape, size, ornamentation, aperture has studied to characterize these plants. Most of the pollen are prolate spheroidal as in Lantana camara, Ranunculus muricatus, Lagurus ovatus, etc. Oblate spheroidal pollen also observed as in Duranta erecta, Albizia lebbeck, Jatropha integerrima, etc. However prolate spheroidal pollen are observed in Brachychiton acerifolius, Ixora finlaysoniana, Petersianthus quadrialatus, Matthiola incana, etc. Circular to spheroidal pollen are also present as in Petunia hybrid, Brunfelsia uniflora, etc. Triangular pollen are present in Solanum virginianum, Tropaeolum majus, Portulaca umbraticola, etc.

The smallest pollen is of Tecoma stans whose polar length is 1.24 μm and equatorial diameter is 1.24 μm . The largest pollen is of Albizia lebbeck whose polar length is 85.55 μm and equatorial diameter is 89.050 μm . The P/E ratio, equatorial diameter and polar length were also determined in μm . The range of polar length varies from 1.24–85.55 μm . Major pollen types have identified on the basis of ornamentation and aperture. There is a large variation amongst the apertures of studied flora i.e., colporate, colpate, tricolporate, tricolpate, inaperturate, pantaporate and poly pantoporate apertures etc. Different types of wall ornamentations are present that are ranging from scabrate to echinate, reticulate, verrucate, spinate, psilate and microreticulate are studied. On the basis of wall ornamentation and aperture types, pollen are recongized i.e. colporate, porate and colpate.

Most of the collected plants are herbaceous, some of them are shrubs and few are trees. All plants are annuals or perennials. Ten out of 72 plant species belongs to Asteraceae family while others belong to Apocynacea, Acanthaceae, Apiacea, Convolvulacea, Euphorbiaceae, Fabacea, etc. Mostly erect, glabrous and hairless stem is observed in studied flora. However, flowers are alternate, small in size, arranged in cluster that is forming bunch at the tips of the branches such as in Calotrophis procera, Nerium oleander, Eranthemum pulchellum, Vachellia farnesiana, etc. Leaves are simple, alternate, sessile, obvate and oblong such as in Andrala ragusina, Chondrilla juncea, Sonchus oleraceus, Lactuca serriola, Pericallis cruenta, Tagetes erecta, calyptocarpus vialis, etc. Most of the species has been growing wild such as Sonchus oleraceus, Cirsium arvensis, Rananculus muricatus, Lantana camara, Chloris barbata, etc. However, some of the ornamental species were also collected such as Jatropha integerrima, Bougainvillea, Portulaca umbraticola, etc.