ABSTRACT

The present study is carried out to assess the melissopalynological investigation of 19 honey samples collected from different areas of District Hafizabad, by using Light Electron Microscopy. A total of 77 different pollen types are observed which belongs to 21 different families.

Out of that, 3 honey samples are bi-floral and other 16 are multifloral. 20 families are dicotyledonous and only 1 is monocotyledonous. The pollen characteristics i.e. shape, size, ornamentation, apertures were studied to characterized these plants. Most of the pollen are prolate spheroidal as in *Calendula officinalis*, *Prosopis juliflora*, *Cannabis sativa*, *Ziziphus jujuba* and *Lantana camara*. Oblate spheroidal pollen is also observed as in *Albizia lebbeck*, *Abutilon theophrasti*, *Cicer arietinum* and *Cassia fistula*. Spheroidal pollen is present in *Tamarix parviflora*, *Alstonia scholaris*, *Eucalyptus globulus* and *Solanum surattense*. Sub-Prolate pollen is observed in *Malvastrum coromendelianum*. Sub-oblate pollen is observed in *Brassica rapa*.

The smallest pollen is of *Eucalyptus camaldulensis* whose polar length is 5.67 µm and equatorial diameter is 6.34 µm. The largest pollen is of *Poa alpina* whose polar length is 37.67 µm and equatorial diameter is 38.67 µm. There is a great variation amongst the apertures of the studied plants i.e. porate, colpate, colporate, tricolpate, tricolporate, pantoporate, ulcerate, and hexacolporate apertures etc. Different type of tectum, ranging from reticulate, scabrate to echinate, verrucate, psilate, rugulate and micro echinate are studied. On the basis of aperture and tectum types, the pollen are recognized i.e. porate, colporate and colpate. Most of the collected plants are herbaceous and some are shrubby. All the plants are annual or perennial.