

Aeropalynological Survey of Meerut: Airborne Pollen Diversity and Seasonal Distribution

Reena Rastogi

Department of Botany

Ramabai Ambedkar Government Degree College, Gajraula, Amroha,

Abstract: *Aerobiological studies provide valuable information on the diversity, composition, and seasonal distribution of airborne biological particles, particularly pollen grains and fungal spores. The present study investigated the occurrence and diversity of airborne pollen and associated biological particles in the atmosphere of Meerut, Uttar Pradesh, India, during two consecutive years, 2000 and 2001. Atmospheric samples were collected using an aeroscope installed on the terrace of a house at a height of 6 m above ground level. Microscope slides coated with safranin-stained glycerin jelly were exposed to the atmosphere and replaced at 24-hour intervals. Reference pollen slides prepared from locally growing plants were used to assist pollen identification. The study recorded 39 pollen types, comprising 37 angiosperm types and two gymnosperm types. Members of the families Asteraceae and Poaceae were the dominant pollen contributors during both years. In 2001, Asteraceae accounted for 35.48% of the recorded pollen, followed by Poaceae at 23.74%. The monthly distribution showed marked seasonal variation, with the highest monthly pollen count recorded in October (13.40%) and the lowest in December (2.05%) during 2001. Differences in the occurrence and abundance of pollen types were also observed across the study period. Other biological materials, including fungal spores, fungal hyphae, trichomes, algal filaments, and insect fragments, were also reported in the atmospheric samples. These historical observations provide a record of airborne pollen diversity and seasonal occurrence in Meerut during 2000–2001 and may serve as baseline information for comparison with future aerobiological investigations.*

Keywords: Aerobiology, Aeropalynology, Airborne pollen, Pollen diversity, Seasonal distribution, Air-spora, Meerut, Historical data