

Abstract

The present study deals with the molecular characterization of mushrooms of Sudhan Gali, District Baagh, AJK, Pakistan. Collected mushrooms were characterized through molecular techniques using universal primers for amplification of Internal transcribed spacer (ITS) region. Eight mushrooms were characterized through molecular analysis of rDNA ITS sequences. These were *Amanita* sp. Hongo, *Boletus reticuloceps*.(M. Zang, M.S. Yuan &M.Q. Gong) Q.B. Wang & Y.J. Yao, *Hygrophorus chrysodon*. (Batsch) Fr, *Inonotus radiatus*. (Sowerby) P. Karst, *Lactarius abieticola*. X.H. Wang, *Lyophyllum leaucophaeatum*. P. Karst, *Russula cf Fragrantissima*, *Russula pseudopectinatoides*.G.J. Li & H.A. Wen. *Amanita* sp. Hongo seems new to science. While, *Boletus reticuloceps*.(M. Zang, M.S. Yuan &M.Q. Gong) Q.B. Wang & Y.J. Yao, *Hygrophorus chrysodon*. (Batsch) Fr, *Inonotus radiatus*. (Sowerby) P. Karst, *Lactarius abieticola*. X.H. Wang, *Lyophyllum leaucophaeatum*. P. Karst, *Russula cf Fragrantissima*, *Russula pseudopectinatoides*.G.J. Li & H.A seem undescribed from Pakistan. Intraspecific variations and phylogenetic relatednes was studied. Maximum intraspecific variations (14.5%) were occured in *Lyophyllum leaucophaeatum*.P. Karst whereas minimum intraspecific variations (9.2%) were recorded in *Lactarius abieticola*. X.H. Wang Now the ways have been opened to further searches which could investigate how climatic factors and genetic variability could influence fungal diversity.