ABSTRACT

Present study was carried out to know the reality of different forms of *S. nigrum* L. growing in GCU Botanic Garden, their morphological features and seasonal behaviours were studied. This study revealed that there were five different morphologically varied forms of *S. nigrum* L. in GCU Botanic Garden. Subsequently it was found that these are actually the different species of *S. nigrum* complex or section *Solanum*. *S. nigrum* L. is not a single species but actually a broad and taxonomically complex term including many species. These species constitute a polyploidy series with diploid, tetraploid and hexaploid species. Five species (*S. villosum* Mill., *S. nigrum* L., *S. americanum* Mill., *S. chenopodioides* Lam. and *S. retroflexum* Dun.) were identified only in the area of GCU Botanic Garden with the help of "key to the species of *Solanum* L. section *Solanum*" by Edmonds and Chweya (1997) because information about *S. nigrum* complex was not available in our local floras and keys and they were failed to explain reality of these species. F1 generations of identified species were also established to study their percentage germination and also to check the natural hybridization among them. Results indicated that their germination was dependent on seasonal conditions and there was no natural hybridization or cross pollination among these species. Stomata and trichomes of leaf epidermis were also studied to make the comparison among species under study more obvious and found that each species has different type and degree of pubescence but stomata are of similar type. It was concluded that all five species of complex are similar and therefore confusing. They showed great similarity in gross morphology among members and some variation in their life cycles in different seasons. However, only few morphological characters helped us in separating the species of complex as each species has a high degree of phenotypic plasticity, particularly in their vegetative features which are being affected by environment and genetic race.