

6th Global Summit on Plant Science

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Examining vegetation structure, species diversity, richness and vegetation-environmental relationships in the subtropical forests of Kotli District (AJK), Pakistan using a multivariate approach

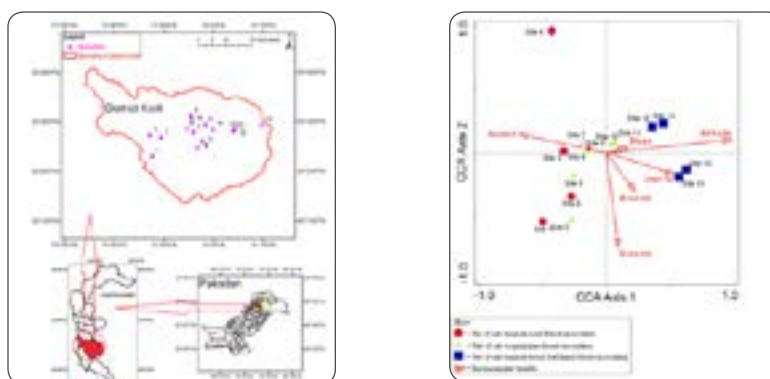
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A phytosociological survey was carried out during 2014-2016 using a stratified random sampling design at 15 different localities in Kotli District, AJK Pakistan. Quantitative data on species composition and environmental variables were collected from 450 quadrats. Based on cluster analysis, three different plant associations were recognized viz., subtropical scrub forest association, subtropical pine forest association and subtropical broad leaf humid association which are clearly separated on a two dimensional detrended correspondence analysis (DCA) diagram. The number of plant species per site varied from 17 to 47; Shannon and Simpson diversity indices were 1.83-3.19 and 0.75-0.95 respectively; Menhinick and Margalef species richness values were between 0.68-1.35 and 2.48-5.95 respectively, Equitability values between 0.65-0.90 and evenness values between 0.37-0.71. DCA and canonical correspondence analysis (CCA) indicated altitude and aspect to be the main determinants of the plant species distribution patterns and classification and grouping of vegetation into different associations. CCA indicated that both species diversity and richness showed strong correlations with altitude as well as aspect and grazing intensity. All the forest stands were immature (33.8-54.7%) with average tree density varying between 280 to 2060 ha⁻¹, and basal area between 1.99-19.18 m²/ha⁻¹. The results clearly reflect the deteriorating forest structure in this region, demanding urgent conservation measures involving effective participation by local communities.



Recent Publications

1. Amjad M S, Arshad M, Saboor A, Page S and Chaudhari S K (2017) Ethnobotanical profiling of the medicinal flora of Kotli, Azad Jammu and Kashmir, Pakistan: Empirical reflections on multinomial logit specifications. *Asian Pacific Journal of Tropical Medicine* 10(5):503-514.
2. Amjad M S, Qaeem M F, Ahmad I, Khan S U, Chaudhari S K, Zahid Malik N, et al. (2017) Descriptive study of plant resources in the context of the ethnomedicinal relevance of indigenous flora: A case study from Toli Peer National Park, Azad Jammu and Kashmir, Pakistan. *PLoS ONE* 12(2):e0171896.
3. Shaheen H, Qaseem M F, Amjad M S and Bruschi P (2017) Exploration of ethno-medicinal knowledge among rural communities of Pearl Valley; Rawalakot, District Poonch Azad Jammu and Kashmir. *PLoS ONE* 12(9):e0183956.
4. Shaheen H, Qureshi R, Qaseem M F, Amjad M S and Bruschi P (2017) The cultural importance of indices: A comparative analysis based on the useful wild plants of Noorpur Thal Punjab, Pakistan. *European Journal of Integrative Medicine* 12:27-34.

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5. Amjad M S, Arshad M, Page S, Qureshi R and Mirza S N (2017) Floristic composition, biological spectrum and phenological pattern of vegetation in the subtropical forest of Kotli District, AJK, Pakistan. *Pure Appl. Biol.* 6(2):426-447.

Biography

Muhammad Shoaib Amjad is currently working as Lecture in Department of Botany, Women University of Azad Jammu & Kashmir Bagh. He was awarded with Gold medal in MSc as well as in MPhil. He published more than 30 research articles on various aspects of phytodiversity, ethnobotany and conservation in various journals of international repute. Currently his research mainly focuses on phytogeographic, systematic and conservation assessment of endemic flora of remote biodiversity rich area of Azad Jammu & Kashmir using advance multivariate statistical techniques.

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