Ethnobotanical knowledge of home garden plant species and its effect on home garden plant diversity in Thies region of Senegal

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Abstract

Home gardens are the first source of immediate contact between people and plants since the gardens are within homesteads. Most home garden studies in Senegal concentrate on food security and economic benefits; no research has been carried out on the social and ecological contexts of home gardening in Senegal. It is therefore necessary to evaluate the way people interact with the home garden plants and how such an interface influences plant diversity. The objective of this study is to evaluate the ethnobotanical knowledge associated to home garden plants and its effect on plant diversity conservation in home gardens. A sample of 30 home gardens was selected from the three main departments of the region and was used to collect plant species data. Data were collected from informants who were selected basing on recommendations from village leaders. Techniques used were plant inventory, participatory observations and individual interviews. Species nomenclature was based on Senegal analytical flora and the world plant list; comparison of effect between different variables was analyzed in analytical software R using simple linear regression analysis. A total of 96 plant species were identified; all species were found to be useful plants divided into eight functional groups. Fifty-four percent (54%) were food species, 40% medicinal, 32% ornamental, 14% commercial, 7% fodder, 4% sacred, 4% ceremonial and 3% cosmetic. *Citrus limon* was the most frequent (80%) and preferred species in the home gardens. Food plant species are the most diversified, abundant and rich use category. There is a relationship between uses of species and species diversity (*P* value < 0.001). Species diversity in the home gardens increases as the spectrum of use increases; thus, species with more than one use were highly diversified; people prefer multipurpose species for multiple benefits. This study expresses home gardens as diversified agroecosystems for sustainable biodiversity conservation of useful plant species.

Keywords: Functional plant groups · Home gardens · Plant species diversity · Sustainable biodiversity conservation

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