



ATTRIBUTES OF FRUITS AND STRATEGIES OF DISPERSION IN A COMMUNITY OF “BREJO DE ALTITUDE”

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INTRODUCTION

Diaspores are the dispersal units of plants, which might be fruits, seeds or infructescences (Pijl 1982). The morphology and attributes of the diaspores are related to ecological factors and their influence on processes such as dispersal and strategies of establishment of plants constituting important tools in the study of community ecology. The process of fruit and seed dispersal represents the connection between the last plant reproductive phases with the first phase of recruitment of the population. Without seed dispersal, the offspring is usually doomed to extinction and the regeneration in new locations is not possible. Thus, the study of the ecology of diaspores involves from the relationship of their morphology and possible form of dispersion to how this relationship affects the demographic and genetic structure of populations and becomes able to maintain local populations (Howe 1990). In addition, plants are the primary food source for frugivorous and changes in these interactions may have serious implications for biodiversity conservation.

OBJECTIVES

To analyze morphological and morphometric attributes of fruits in order to determine the dispersal strategies of plant species in the studied community.

MATERIAL AND METHODS

This work is being developed in the Parque Estadual Mata Pau do Ferro, Areia / PB, which is characterized as Open Ombrophylous Forest in a community called Brejo de Altitude. The local vegetation is quite differentiated by presenting species of the Atlantic Forest and “Caatinga”. Monthly records of observation of frugivorous were made and fruits and seeds samples were collected from different individuals located in 30 random and permanent plots (10x10), distributed in the study area. Fruits (n = 10) of each species were analyzed for morphology, classification (Spjut 1994), color (Smithe 1975), consistency, fresh weight and dispersal syndromes (Pijl 1982).

RESULTS

Samples were collected from 58 species in 24 families; the mostly of the species were shrubs (22%) and trees (43.1%). The families Rubiaceae (8.6%), Leguminosae (8.6%), Myrthaceae (8.6%) and Erythroxylaceae (5.1%) had the largest number of species. The zoochoric dispersal strategy had the highest rate for all stratum. It was observed that 87.9% of the species are zoochoric and only 6.8% and 5.3% are anemochoric and autochoric, respectively. The fruits in the colors dark (25.8%), red (25.8%) and brown (20.6%) were predominant, and of these, only the fruits of brown color presented anemochoric (33.3%) and autochoric (25.1%) dispersal, the others showed

zoochoric dispersal strategy. Fruits of medium and small sizes totaled 77.8%, of which 90% are zoochoric. Fruits very light and light totaled 91.4% of the species and fleshy fruits accounted for 77.6%. The types drupe (41.3%) and bacca (27.9%) were the most records. Among the fruits of the capsule type, highlights were those with caruncle in the seeds (3.4%).

DISCUSSION

The community has a high rate of species with fruits that are available as resources for frugivorous, therefore, those whose characteristics suggest dispersal by animals; are fruits with pericarp or part of this, rich in water and nutrients (fleshy) or fruits with a dry pericarp, but have caruncle or aril in outer integument of the seed. Fruits of sizes ranging from small to medium and weight up to 1g are usually dispersed by birds and small mammals. Fruits that have caruncle or aril, when they are not ingested, can be secondarily dispersed by ants. This high rate of species with zoochoric strategy was observed for all strata, suggesting that the availability of resources occurs from the ground level through of the herbaceous species to the canopy through of trees. The species that offer these resources to frugivorous are extremely important for local fauna, as it keeps the community of various animals in the different strata. The genetics and demographic structures of the populations of zoochoric plant are closely related with the seed dispersal on the other hand, frugivorous animals depend on the availability of these resources to their maintenance in the community (Wright *et al.* 1999, Griz e Machado 2001). The predominance of the zoochoric strategy in rainforests is expected since the floristic composition of the tropical and subtropical forests shows a higher proportion of species with diaspores adapted to zoochoric dispersion (Foster *et al.* 1986 Morellato 1995, Spina *et al.* 2001), however, the recorded data exceeds the average of the rate recorded for other communities of rainforest, which can be explained by the privileged location of the areas of Brejo de Altitude that favor a differentiated richness of species.

CONCLUSION

The predominance of fleshy fruits, small and medium up to 1g of fresh weight in the dark and red colors was responsible for the high rate of species with zoochoric strategy for the community. Thus, the supply of these resources in all strata suggests that the plant community is able to maintain resources for frugivorous, and thus ensure the maintenance of the dispersal processes and potentiating the successful in the establishment of plant species.

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