



DIET CHARACTERISTICS OF WILD COLUMBIDAE FROM BRAZILIAN ATLANTIC RAINFOREST

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INTRODUCTION

The order Columbiformes has a global occurrence and is represented in Brazil by a single family (Columbidae) with 23 native species in wild environments, popularly called pigeons (Sick, 1997). This group occurs in different phytogeographic domains (Gwyne *et al.*, 2012), especially in Atlantic Rainforest, where one can find in transition with Brazilian Cerrado biome in central-southeastern region in Minas Gerais (Marini and Garcia, 2005). The state involves regions with high priorities for conservation and environmental preservation, in addition to present a great diversity in terms of avifauna (Machado *et al.*, 1998).

The diet of Columbidae is made principally of vegetal species, especially fruits and seeds (Sick, 1997; Galetti, 2001; Calchi, 2007). In researches treatments on the birds' diet is not held to collect or screening of the digestive tract, but from observations in nature (Gonçalves, 2007) and analysis of the defecated material. We show in this study aspects of the diet of four species of Columbidae, being they: *Patagioenas plumbea*, *Leptotila verreauxi*, *Leptotila rufaxilla* and *Geotrygon montana*.

OBJECTIVES

Our purpose was to analyze the diet characteristics, principally in terms of biomass and vegetable items, found in wild species of family Columbidae from state of Minas Gerais, Brazil.

MATERIALS AND METHODS

Were analyzed 17 specimens of different species of Columbidae, being 12 representatives specimens of *P. plumbea*, two *L. rufaxilla*, two *L. verreauxi* and one *G. Montana*, from municipalities of Catas Altas and Santa Bárbara. These specimens, found dead, were deposited in the Museu de Ciências Naturais da Pontifícia Universidade Católica de Minas Gerais. During the preparation of specimens, was stored all the digestive tract. Later, the food items was separated in three principal parts (crop, stomach and gut), in order to analyze the quantity and the degradation of items along the digestion. After this step, weighing and the volumes of material separated was performed and made the screening, in order to obtain vegetable items of food content. With this, it was possible to identify the plant taxa in the lowest taxonomic level, mainly of seeds present in the diet of Columbidae.

RESULTS

In respect at biomass, the volume the food contents of specimens, presented an average value of $6,91 \pm 3,31$ ml. Weight was calculated for each part of digestive tract, being $1,34 \pm 1,07$ g the average value for the crop, $2,78 \pm 0,68$ g for the stomach and $3,60 \pm 3,46$ g for the gut region.

In during the analysis, all specimens were observed sand crystals of the content. In respect of seeds diversity was registered seven families and 22 different morphospecies in the sample. We found two morphospecies of the Myrtaceae occurring in the diet of four Columbidae species, however is less frequency observed ($n=6$) if one morphospecies of the Annonaceae ($n=7$). Thus, following the descending frequency order, was observed the Malvaceae seeds ($n=2$), Bignoniaceae ($n=1$), Myrsinaceae ($n=1$) and Poaceae ($n=1$). The sample held in gut region showed a significant amount of damaged seeds, and 2,3% the total amount of undamaged seeds, belonging to Myrtaceae.

DISCUSSION

This present study analyzes the biomass measures around the proportion of food contents with the body weight of the specimens, in the same way as Montalti *et al.* (2005) contrary to what is observed in others studies, which make explicit the biomass on the prey and regurgitation. The analyzes of the biomass had a mean value of $7,73 \pm 4,02$ g for the weight of the food, representing 3,8% of the body weight of the specimens.

Vegetables characterized as animal-dispersed (Van der Pijl, 1982) was found in most the diet of Columbidae. Despite this, the large number of damaged seeds indicates, in general, a low potential for dispersion by the group, compared to other families (ex. Ramphastidae and Cotingidae) (Snow, 1981). It is believed that the dispersion for 2,3% (Myrtaceae) of these items is efficient, a low amount that corroborates previous studies (Pineschi, 1990; Quitiaquez e Barbosa, 2010). In the case of Columbidae, the plant diversity of the food content presents a great representativeness in respect of forests species. In their diet are found vegetable groups featured in Atlantic Rainforest environments, the example of the Poaceae, Myrtaceae and Melastomataceae, considering the species richness and also, for the last two, high rate of endemic and endangered species (Stehman, 2009).

CONCLUSION

Should be made more systematic ecological studies to extend the knowledge of diet-related characteristics for species of Columbidae. The knowledge about the diet of animal's populations is fundamental in the point of view of conservation and wildlife management.

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