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Original Research Article

Spatial Distribution Study of Specie *Scorodophloeus zenkeri* Harms (Fabaceae) in Yoko Reserve and Biaro Forest (Ubundu, Democratic Republic of Congo)

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Abstract

A study based on spatial distribution of *Scorodophloeus zenkeri was* performed in the device 400ha Biaro forest. Both specie has multiple uses, including industrial exploitation by the quality of wood. An inventory of the forest potential of these specie were made based on values in abscissa (x) and ordonna (y) for all individuals. At the end of this inventory, 9115 feet were counted with 9098 feet at reserve Yoko and 17 individuals at Biaro forest. The spatial distribution of individuals of both specie is aleator type at reserve Yoko and aggregated type at Biaro forest.

Keywords: Spatial distribution, Study, Scorodophloeus zenkeri, Yoko Reserve, Biaro forest.

I. INTRODUCTION

Forest management requires ecological studies on the distribution patterns of plant species that promote the spread of spores to ensure the regeneration of these species in the forest (CONDIT *et al*., 1998). Therefore the study of aggregation of specie and Scorodophloeus zenkeri agrees to provide data on the state instead of this specie in forest concessions and knowledge distribution (Boyemba, 2006).

The study of this specie belonging to the family Fabaceae was conducted in the permanent 400ha of reserve Yoko and Biaro forest (Picard, 2007; Picard *et al*., 2008; PICARD, 2009). Both species are exploited in the country by two companies operating the timber including the Society of Forestry Processing and Bego Congo and local people who consume leafts and ecorces of tree. The aim in this work and see if the specie would present a distribution showing a forest heritage can promote regeneration after logging in all forest concessions. The vegetation of the site where the permanent has been introduced is characterized by semi-deciduous forests to mesic Scorodophloeus zenkeri at Yoko (Lomba, 2007). Whereas at Biaro forest her vegetation is characterized by sempervirens mesophils forest. These two vegetations are a soil with the soil characteristics recognized in the central Congo basin (Germain and Evrard, 1954).

II. MATERIAL AND METHODS

II.1 Material

During our work, we focused on specie, namely *Scorodophloeus zenkeri.*

II.2 Methods

II.2.1 Layout

Layout work helped define the device 400ha using compasses Suunto brand and SYLVA SYSTEM to guide Lyons, a trademark of Garmin GPS (Etrex) to take the coordinates of the device; of penta decameters to measure lengths different layout and machetes to open the layout. 40 layouts side equidistant 50 m have been made to delineate the bands 50m × 2000m arranged for inventory and in which plots of 50m × 200m have been completed and traced 50m × 50m through nylon son (LEJOLY, 1994); (VAN DER MEER *et al.*, 1995); (SONKE, 1998); (YALIBANDA, 1998); (STAHL *et al.*, 2000); (WAMELINK *et al.*, 2005); (WANG and al. 2009).

II.2.2 Inventory

It was based on all individuals ≥ 10cm dph these two species on any area of 400ha (MERVI *et al*., 2006). The inventory-based operating division of each strip into two parts 2000m ×25m was applied by scanning each band consisted of 10 plots divided into 4 sectors each. The positioning of each individual was noted from the values in abscissa and ordinate.

III. RESULTS AND DISCUSSION

III.1, Abundance of specie studied

At the end of the inventory data for both species, we quote; 9115 feet which were enumerated in 9098 for the first device namely reserve Yoko and 17 for the second device, Biaro forest.

III.2 Distribution of feet of trees inventoried

In Figures 1 and 2 below we present the position of Scorodophloeus zenkeri of trees in the permanent reserve Yoko and Biaro forest.

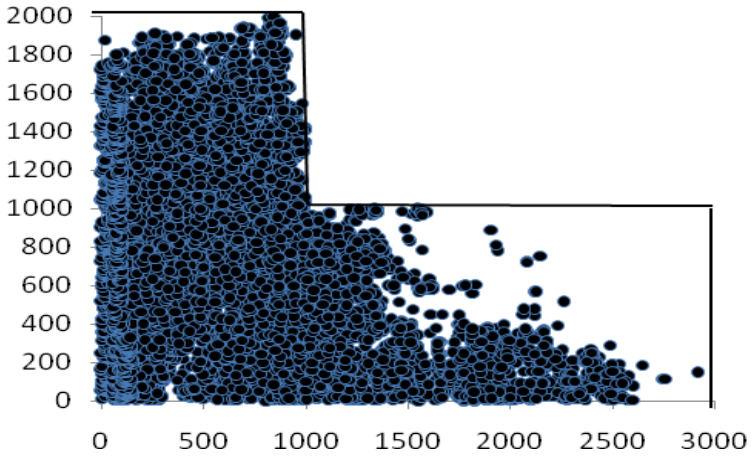

Figure 1: Clouds of points gasoline Scorodophloeus zenkeri in Yoko reserve

By observing these graph, we notice that the feet of this specie have the same spatial arrangement or pattern in a strong representation is served on reproached feet at Yoko at North – West, at South - West and Center into Gilbertiodendron dewevrei forest. The feet of Scorodophloeus zenkeri are small representation at Eastern.

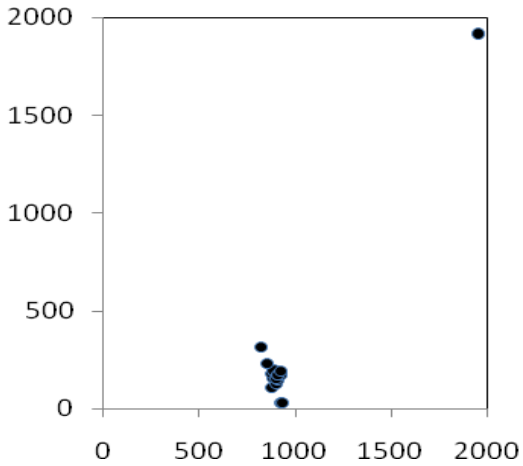

Figure 2: Clouds of points gasoline Canarium schweinfurthii in Biaro forest

By observing these graphs, we notice that the feet of this specie have the same spatial arrangement or pattern in a reproached on right side specific at South - Eastern of Biaro forest.

The feet of this specie were menaced by forest of Maratancees (Marantocloa sp) becamed after plenty agricultural activities secular.

The software developed by Picard (2009) on the spatial distribution of tree species which values on abscissas and ordinates are known, we observed the following graphics this specie at Yoko and Biaro.

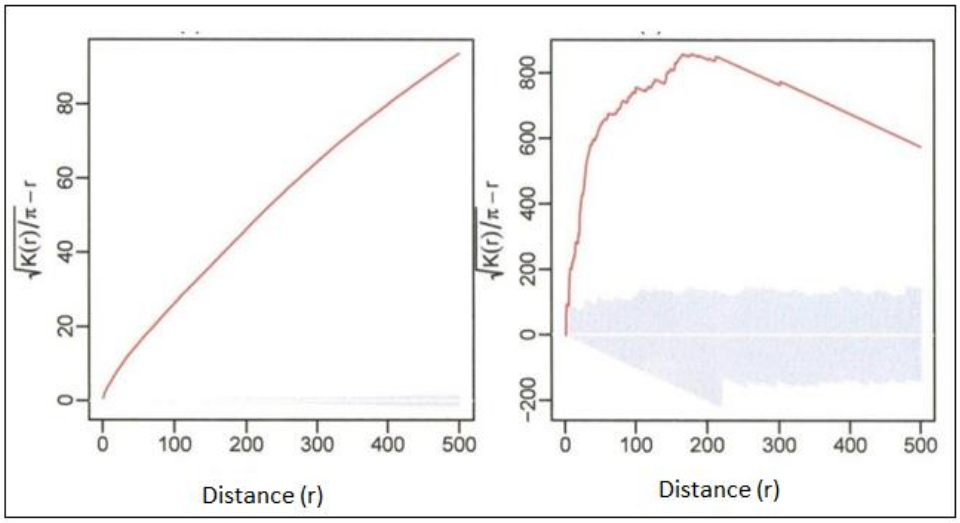

Figure 3: The tendency of aggregate spatial repartition in reserve Yoko (left graphic) and in Biaro forest (right graphic)

Figure 3 shows that the curve is above the gray area represent the confidence interval. It means that the gasoline distribution system aggregate at reserve Yoko and Biaro forest.

By analyzing the Figure 3, the specie *Scorodophloeus zenkeri* has the same distribution called aggregate in Yoko reserve and Biaro forest. This is explained by the fact that diasporas of this specie which are pods generally fall in the near vicinity of seed trees at Yoko and Biaro (Kumba, 2007). That explained also the specie *Scorodophloeus zenkeri* is sciaphila strict temperament and his diasporas are exposed at no light in forest covered. Which favored the germination of diasporas. This encourages a rapprochement between the feet of this specie (Nshimba, 2008). This system of aggregation observed could also be justified by the adjustments that would present this specie vis-à-vis the quality of the substrate is sandy clay with 80 to 90% clay.

IV. CONCLUSIONS

After this work on analysis systems of aggregating specie Scorodophloeus zenkeri in the permanent forest reserve Yoko and Biaro forest, we note the following:

- 9098 feet with dbh ≥ 10cm were counted in forest reserve Yoko;
- 17 feet with dbh ≥10cm were inventoried in forest Biaro
- The specie have an aggregated distribution favored by the pods that are scattered at close at forest reserve Yoko and Biaro forest by sciaphila strict temperament with a canopy covered no light for permit the diasporas at a rapprochement near feet.

Thanks

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