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Effect of Site Conditions on the Production of the Barú Nut (Dypterix alata)

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Abstract

The Barú Nut is a native tree in the Chiquitania region in Bolivia. Barú Nuts are wild-collected by small farmers in rural communities promoting important economic benefit. Due to the high nutritional value, fewer calories and fat and great taste the Barú Nut has caught the international attention. In the study area exist 9 years old plantations without production. In contrast producers trees are those growing naturally, which are very abundant and its natural regeneration is very high although its production is very instable. Main factors affecting the growth and production both in plantations and natural trees are unknown. This study, part of a project implemented by the German Development Cooperation (GIZ), analyses the site conditions to understand the underlying factors affecting the production of Baru Nut in plantations and trees growing naturally.

Eighteen sites distributed in 8 communities were selected to collect the data. They were selected plantations of different ages (3 to 9 years) and trees growing naturally distributed in areas nearby rural communities. In each site soil samples were obtained to analyse the physical and chemical properties. By using semi-structured interviews to producers data on implemented silviculture techniques and site management history were collected. Historical data of precipitation and temperature in three weather stations were analyzed. All these parameters were correlated with historical data of nut production.

Preliminary results show that silvicultural techniques (e.g. pruning, thinning) highly contributed to the uniformed growing in planted trees, especially in natural stands. The soil physical conditions seems to be a strong factor promoting the production of trees growing naturally. Barú Nut trees need direct solar radiation therefore thinning of surrounding trees has proven to be important. The saturation of aluminum and lack of phosphorous seems to be crucial for the quantity of production. The site´s historic management does not show any effect on the plantations. These preliminary observations point out the potential to manage the natural regeneration and improve the production for example by grafting. A diversity genetic study of the planted trees could provide more insights to have robust conclusions on why these trees are not producing.

Keywords: Baru nut, Bolivia, Chiquitanía Region, non timber forest products, site conditions, small farmers

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