

Barry Callebaut Core Trial – Ivory Coast

Alexandre Kaminski

Introduction

The core trial of Barry Callebaut is based at the Agronomy Center of Tiassalé (Department of Agnéby –Tiassa). It is located in a 30 hectares land plot previously cultivated with rubber for over 30 years. The cluster of agronomic trials also includes an agroforestry trial (Intensive intercropping of perennials with cocoa) and a trial managed in coordination with Wageningen University on modelization of shade and pruning treatment response for Cocoa.



Picture 1: Aerial view of trial site

Paradigm change?

Considering the low amount of forest soils in WAF & large issue of soil degradation after perennials crop cycles, the question that should be asked is whether cocoa farming over depleted soils is the way forward.





Picture 2: Previous crop cultivation and soil pit from selected site

The improvement of fertilizer practices has great

Graph 1: Ombrothermic graph of Agronomy Center

Field site characteristics

potential to improve cocoa yield considering the challenging environmental condition (poor soil and climate change).

The selected plot is degraded agricultural land with previous history of cultivation over cycles of industrial farming. The soil texture is balanced (clay-loam) and the balance between cations is close to ideal. The pH and organic matter (2,8%) are on the low side but conditions remain suitable due to a base saturation of CEC at 78%. The low value of cations, low N content make the soil conditions marginal for growing cocoa. However, good clay and loam content (60% of total soil) will contribute to the fixation of nutrients brought in by fertilization practices.



C/N Ca/Mg/K pH C. Org % Total Avail Κ Ca Mg N % Ρ Meq/100g (ppm) 5.33 1.62 4.95 Tiassale 0.15 0.54 11,5 1.23 73/19/8 11 Reference 5.1/7 1.7/2.4 0.2/0 6/15 4/18 0.9/4 0.2/1.2 9/8 68/24/8 (Snoeck .4 2016) Table 1: Soil characteristics of selected planting site

Picture 3: Intercropping trial planted in same location

References

Snoeck, Koko, Joffre, Bastide, Jagoret. Cacao Nutrition and Fertilization. Sustainable Agriculture Reviews, Vol.19 (2016)

www.cocoasoils.org