Estimation of fruit tree production by quantitative indicators: the case of lychee in Madagascar

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INTRODUCTION

• Madagascar: the first exporter of lychee in the world - 25,000 t/year.
• The quantity of production available for the market is still unknown - few weeks prior to the harvest to organize the campaign.
• Climatic variations.
• Differences in agricultural practices.
• Production distributed between 30,000 smallholders farmers with small areas located throughout the region.

MATERIALS AND METHODS

Lychee chinensis Sonn - Kwai Mee
12 to 60 years
2015: 30 trees 2016: 35 trees
Heterogeneity of size

MADAGASCAR TOAMASINA
18° 33’45”S 49°24’3.33”E

Analysis with R software – Linear regression

RESULTS

IMAGE ANALYSIS

Canopy image analysis

Contribution

• Particularly effective when completed with a fruit load rate estimation
• Subjective estimations of the load rate.
• The fruit production of a lychee tree could be estimated using simple techniques.
• Helpful to forecast the available production for the market for a better organization of the campaign.
• Supplementary information needed: the lychee tree distribution on plots over the production area (not yet been available in Madagascar).

CONCLUSION