Abstract

To adapt technological tools based on global positioning systems to agricultural practices is crucial to improve the efficiency of production per area, increasing the productivity levels. The objective of this project was to develop a methodology, using phenological indicators and precision agriculture, to estimate the production in the banana plantation at EARTH University. Was to generate Maps of the productivity behavior and population density were generated in Block 1. The methodology consisted of several stages: first, the maximum distance of the sampling was determined with a semivariogram, calculated at 125 m; to gather more accurate information, sampling was performed at a distance of 80 m by 50 m; geo-referenced data collection of the population was made in a circular area of 8 m radius, as number of hands per bunch. Finally, the data was interpolated to obtain maps of areas and their production rates. A larger area was found within the optimal range of the number of production units per hectare. In terms of production, 4% (5.28 ha) of the farm area was below the breakeven point - and 94% was above the equilibrium point. Some areas lower their productivity when they exceed the 1800 plants ha-1. It was possible to develop a methodology to collect data from phenological index of number of hands per bunch and precision agriculture. The tool identified the critical production points but they were not associated with any soil or climatic variable Therefore, it is recommended to perform further analysis of the areas, incorporating other variables in an integrated way.