

SOIL CONDUCTIVITY ELECTRICAL MEASUREMENT SYSTEM SUITED TO AN AGRICULTURAL IMPLEMENT (SUBSOILER)

L.M. Rabello, R.Y. Inamassu, A. Torre Neto

EMBRAPA Agricultural Instrumentation
XV de novembro, 1452, São Carlos-SP-Brasil, 13560-970

A. Luchiari Junior

EMBRAPA Environment
Rodovia SP340-km127,5-Jaguariuna-SP-Brasil,13820-000

J.P. Molin

Universidade de São Paulo – USP-ESALQ
Piracicaba-SP-Brasil

M.S. Simões

Usina São Martinho
Pradópolis-SP-Brasil

ABSTRACT

The precision farming is a technique for systemic managing and optimized of system of production through the field variability of information, using a range of technologies with the geographical position as important point.

One of the common techniques used in precision farming is the electrical conductivity of the soil; this technique is relatively low cost compared to other techniques for the measurement of magnitudes agronomic soil chemical and physical propriety.

Keywords: precision agriculture, electrical conductivity, soil, subsoiler, map

INTRODUCTION

Two models are carrying out measures for the electrical conductivity of soil marketed. One, one of them is the system VERIS 3000 manufacturing of Veris Technologies and, the other is the EM38 manufacturing of GEONICS Limited.

The use of these systems requires equipment and implements suitable for its operation, and it takes do measures before and after planting.

The purpose of this work is the adaptation of an implement, already of work in the agricultural property, for measurement the soil conductivity electrical for assembly of maps, with purpose of studies on productivity or other parameters on precision farmer, reducing the time and costs.

MATERIAL AND METHODS

The adjustment was made in choosing a system subsoiler, owned by Usina São Martinho, partner in this work, due to be one of the processes of management of the preparation of the soil for planting cane.

This process is composed by the passage of subsoiler for preparation of soil, then the planting, mass plant growth and after the harvest. No new planting is done constantly, because after the first cutting and harvesting the sugarcane again grown and so forth repeating the cycle for approximately 5 years., only after this period of time 6 to 7 year, the sugarcane is renewed that and it is done new soil preparation with and planted new seedlings, which is again, used the subsoiler.

RESULTS

As a result of this adjustment has been a map of electrical conductivity, figure 1.

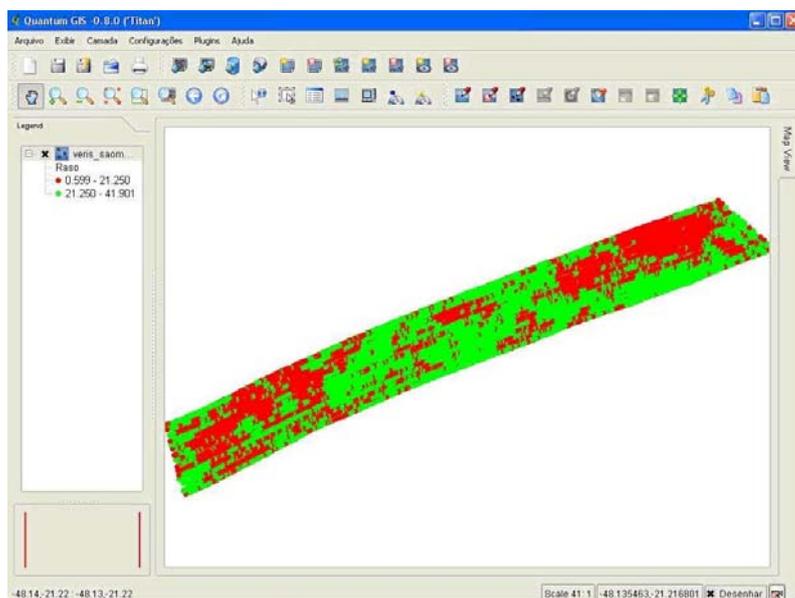


Figure 1: map of electrical conductivity with system adapted.

REFERENCES

CORWIN, D. L.; LESCH, S. M. Application of Soil Eletrical Conductivity to Precison Agriulture: theory, principles, and guidelines. **Agronomy Journal**, Riverside, v. 95, n. 3, maio jun. 2003.

INAMASU, R. Y.; FRANÇA, A.; TORRE-NETO, A.; MANTOVANI, E. C.; CRUVINEL, GOMIDE, R. L.; LUCHIARI JR, A.; RABELLO, L. M.; SOUZA, R. V. de. Condutividade elétrica do solo: primeiros mapas no Brasil. In: BALASTREIRE, L. A. **Avanços na Agricultura de Precisão no período 1999-2001**. Piracicaba, 2002.