

# Root and shoot dry matter yield of soybean plants subjected to nickel rates and two soil base-cation saturation ratios

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## Introduction

Nickel (Ni) was established as a micronutrient for higher plants for over thirty years. The existence of Ni deficiency is becoming increasingly apparent in crops, especially for those ureide-transporting Fabaceae species, like soybean. Notwithstanding, it is not included in programs of fertilization for Brazilian crops. The aim of this study was to evaluate the effect of Ni rates to soybean plants subjected by two soil base-cation saturation ratios in order to evaluate the root and shoot dry matter yield.

## Methods

The experiment was carried out in greenhouse conditions. It was used two soil base-cation saturation ratios (50 to 70%) with five Ni rates (0, 0.1, 0.5, 1.0 and 10 mg dm<sup>-3</sup>) applied to Hapludox soil. Soybean plants was grown until the early grain filling stage (R5), when it was harvested and fractionated, on shoot and root (without nodules).



Figure 1. A: application of fertilizers, B and C cropping soybean; D a separation roots and shoots.

## Results

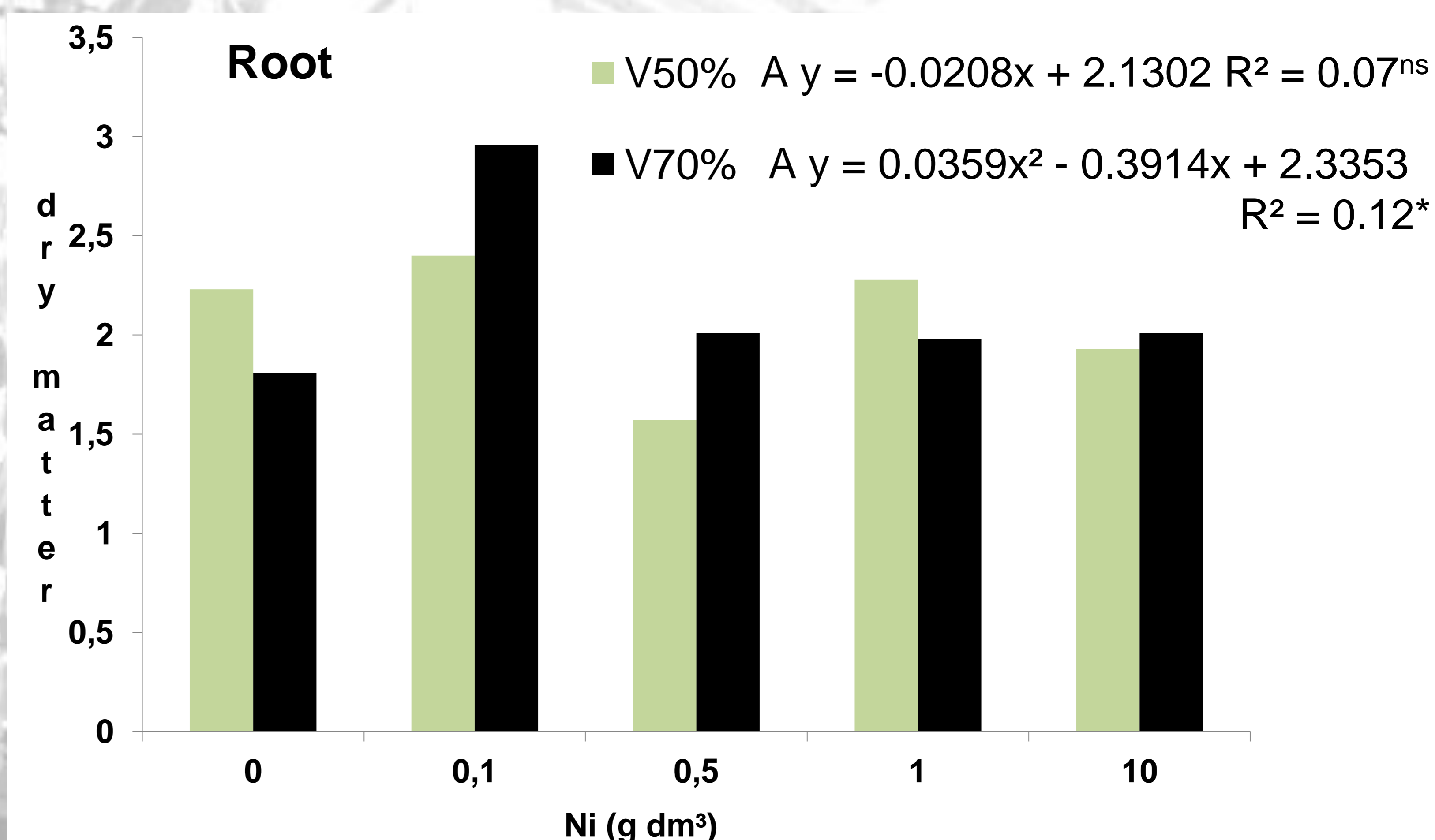


Figure 2: Dry matter of the soybean root subjected to two soil base-cation saturation ratios (Tukey test at 5%) and Ni rates (regression).

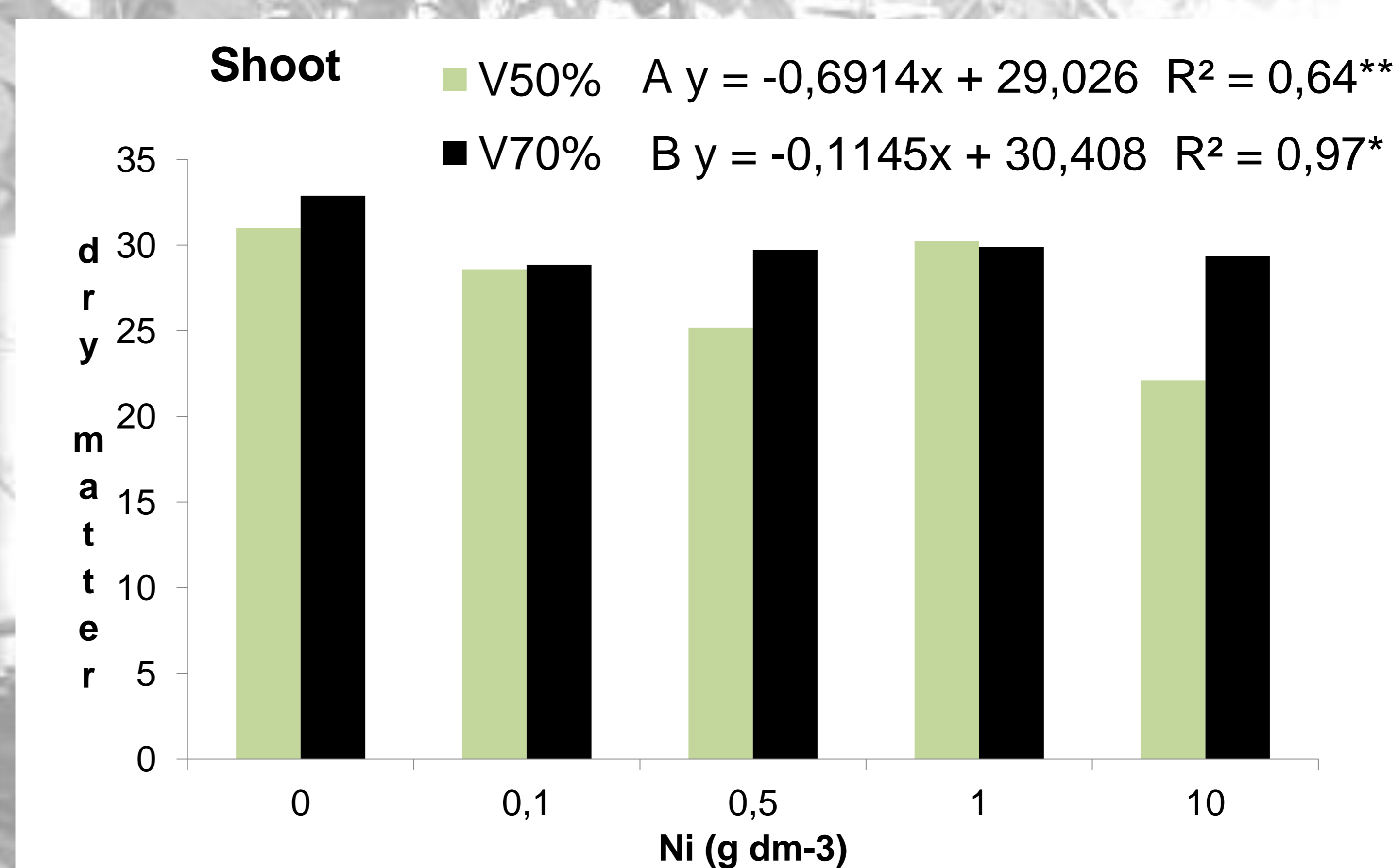


Figure 3: Dry matter of the soybean shoot subjected to two soil base-cation saturation ratios (Tukey test at 5%) and Ni rates (regression).

## Conclusions

These Ni rates interferes negatively on shoot dry matter yield of soybeans while its effects to soil are depending of base-cation saturation ratio.