Soil in the Age of Precision Agriculture and Information Technology, 16-17th June 2022, Novi Sad, Serbia

NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI) IN THE FLOWERING PHASE OF SOYBEAN GROWN IN DIFFERENT SOIL CONDITIONS

P. Ranđelović[1], M. Vasiljević[1], V. Đorđević[1], J. Miladinović[1], S. Milić[1], S. Jaćimović[1], V. Đukić[1]

[1] Institute of Field and Vegetable Crops, Novi Sad, Serbia

INTRODUCTION

This study aimed to examine the influence of different soil types on the NDVI value in the flowering phase of diverse soybean germplasm.

MATERIALS AND METHODS

The trial was conducted in 2020 within the experimental plots of the Institute of Field and Vegetable Crops in Rimski Šančevi.

An identical set of over 100 soybean genotypes were grown on two different soil types, sandy and clay.

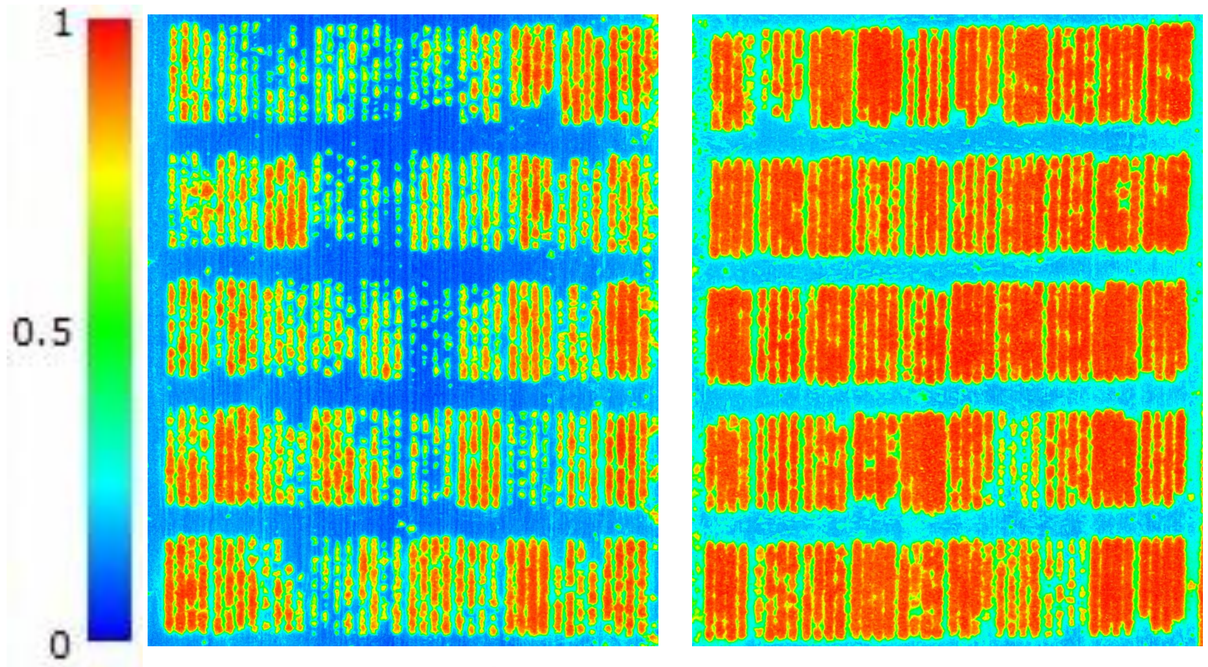
In flowering, soybean genotypes were photographed using an unmanned aerial vehicle-DJI P4M and a multispectral camera with five spectral channels (Red, Green, Blue, Red Edge, Near-Infrared).

DJI P4M and a multispectral camera

Red and Near-Infrared channels were used to calculate the NDVI and assess the effect of different soil types on soybean genotypes in one of the critical development stages such as flowering.

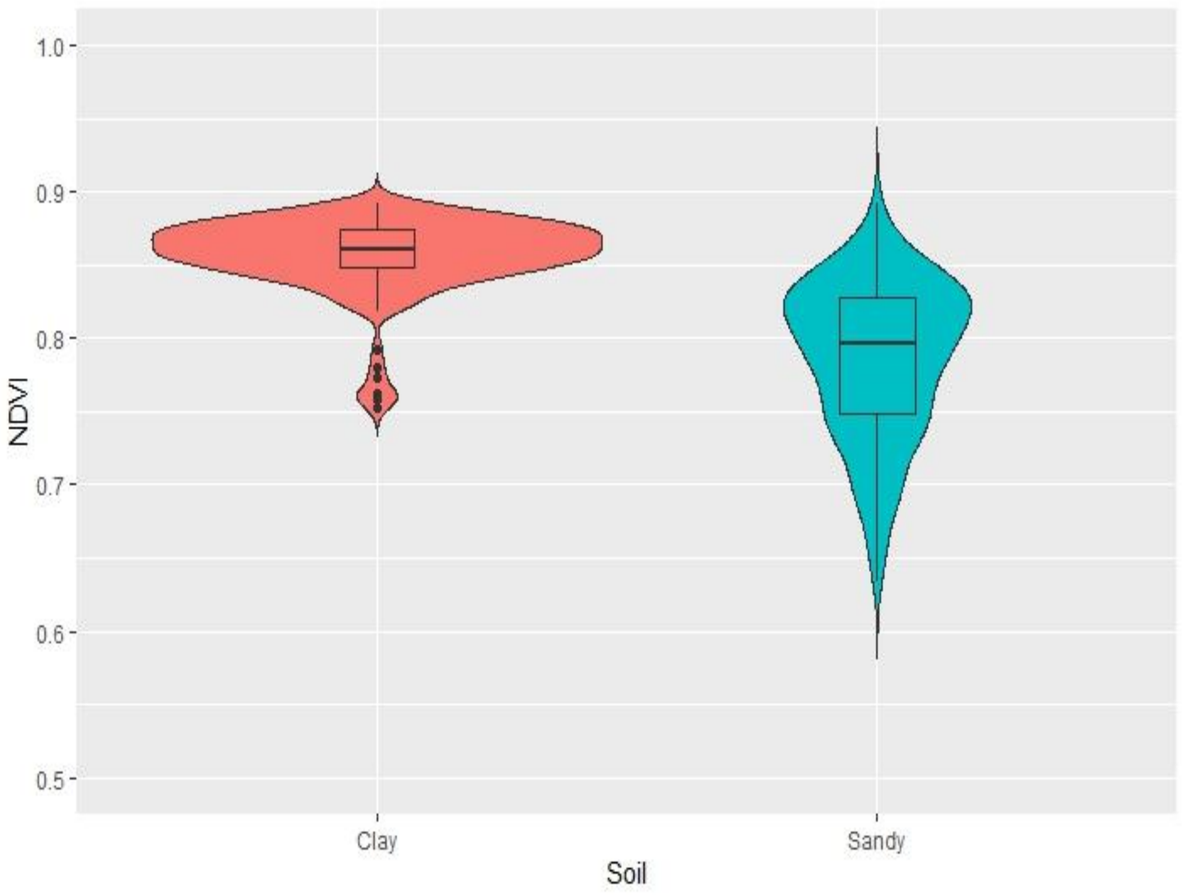
RESULTS and CONCLUSIONS

The results showed different NDVI values between soybean genotypes grown on sandy and clay soil.



NDVI on sandy soil NDVI on clay soil

Genotypes sown on low-quality sandy soil in the flowering phase had on average a lower value of NDVI by over 8% compared to the same set of genotypes grown on clay soil.



Graph 1. NDVI values

Corresponding author:

Predrag Ranđelović

Predrag.randjelovic@ifvcns.ns.ac.rs

Funded by European Union
Horizon 2020
Grant agreement No 771367

ECOBREED project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 771367. The content of this paper reflects only the author's view and the European Union Agency is not responsible for any use that may be made of the information it contains.