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CONTENT OF AVAILABLE CALCIUM AND MAGNESIUM IN THE VERTISOLS OF THE PČINJA DISTRICT

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INTRODUCTION

Vertisol is one of the most widespread soil type in Serbia and covers an area of 780,000 ha.
The main areas of its distribution are:
Sumadija with about 260,000 ha,
eastern Serbia - Negotinska Krajina (120,000 ha), southern Serbia - Aleksinac, Nis and Vranje valleys (120,000 ha),
Kosovo and Metohija (110,000 ha)
Vojvodina, around Vršac and Bela Crkva, this soil type covers an area of about 36,000 ha, while significantly smaller areas (20,000 ha to 30,000 ha) are located in the area of Raška and Stari Vlah.
Field researches of vertisol were performed on the territory of Pčinja District.

AIM

determine the vertisols subtypes of Pčinja District, with a detailed description of the identified soils chemical properties.

MATERIALS AND METHODS

Ten pedological profiles of vertisol soil type were opened
seven profiles of noncarbonate vertisol subtype and
three profiles of carbonate vertisol subtype).
The basic chemical properties of the soil were determined by standard methods: humus content, bichromatic method, Kocman method, total nitrogen according to Kjeldahl, content of available potassium and phosphorus by Al-method according to Egner-Riehm, content of accessible Ca and Mg, by ion chromatography method.

RESULTS AND DISCUSSION

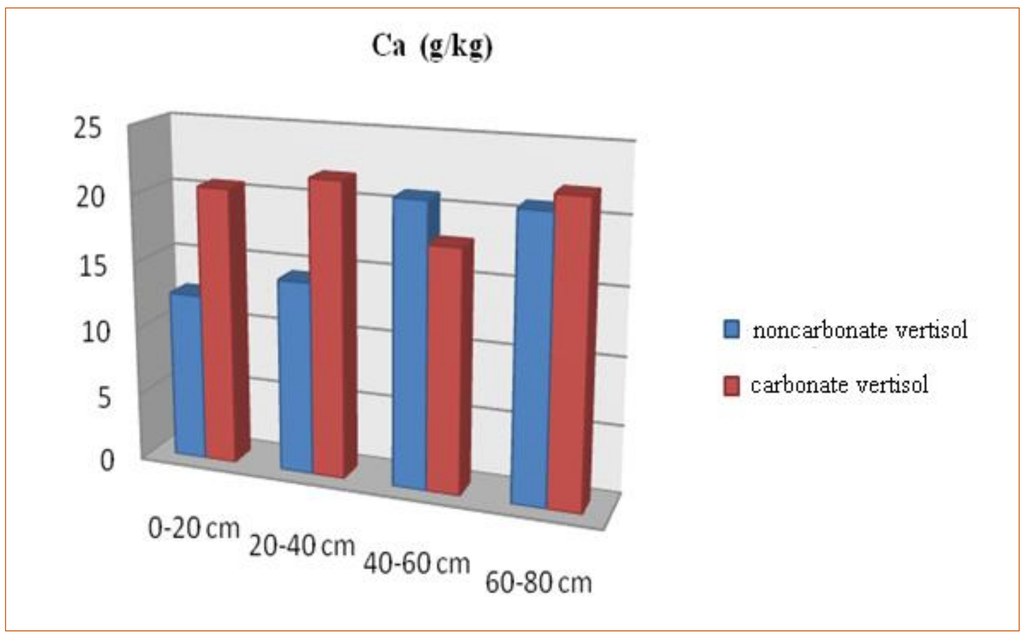

Figure 1. Average values of Ca (g/kg) content in noncarbonate and carbonate vertisol

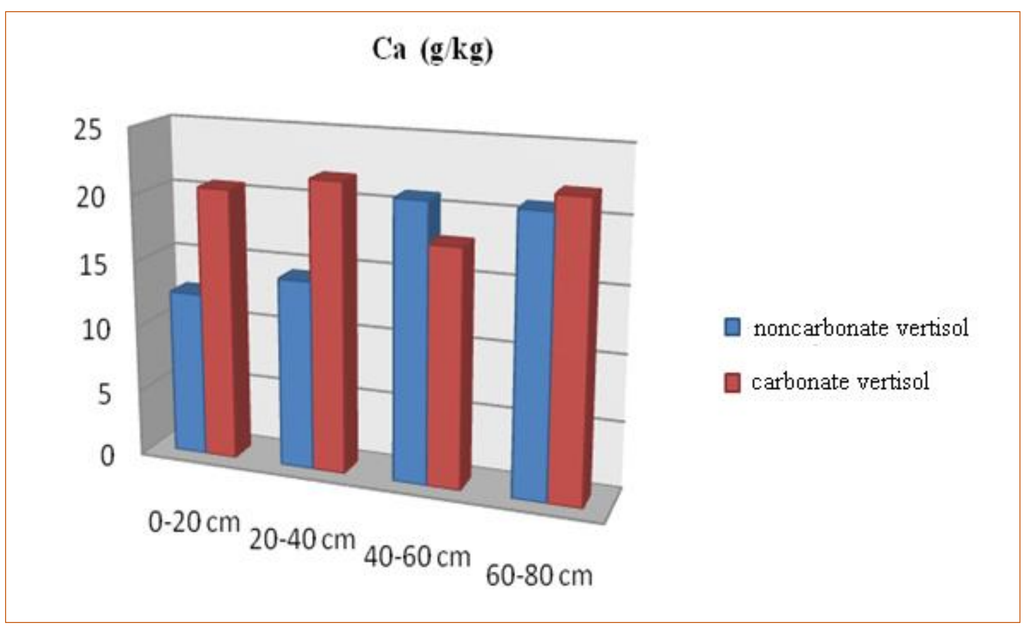

Figure 2. Average values of Mg (g/kg) content in noncarbonate and carbonate vertisol

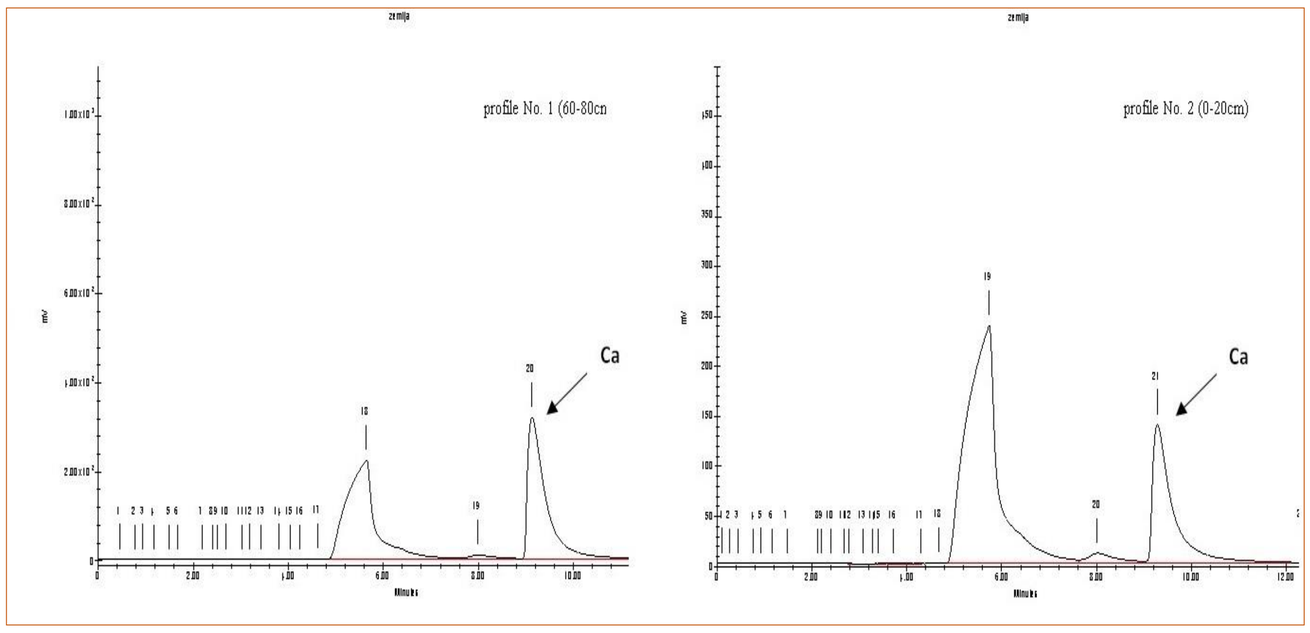

Figure 3. Ca chromatograph in noncarbonate profiles

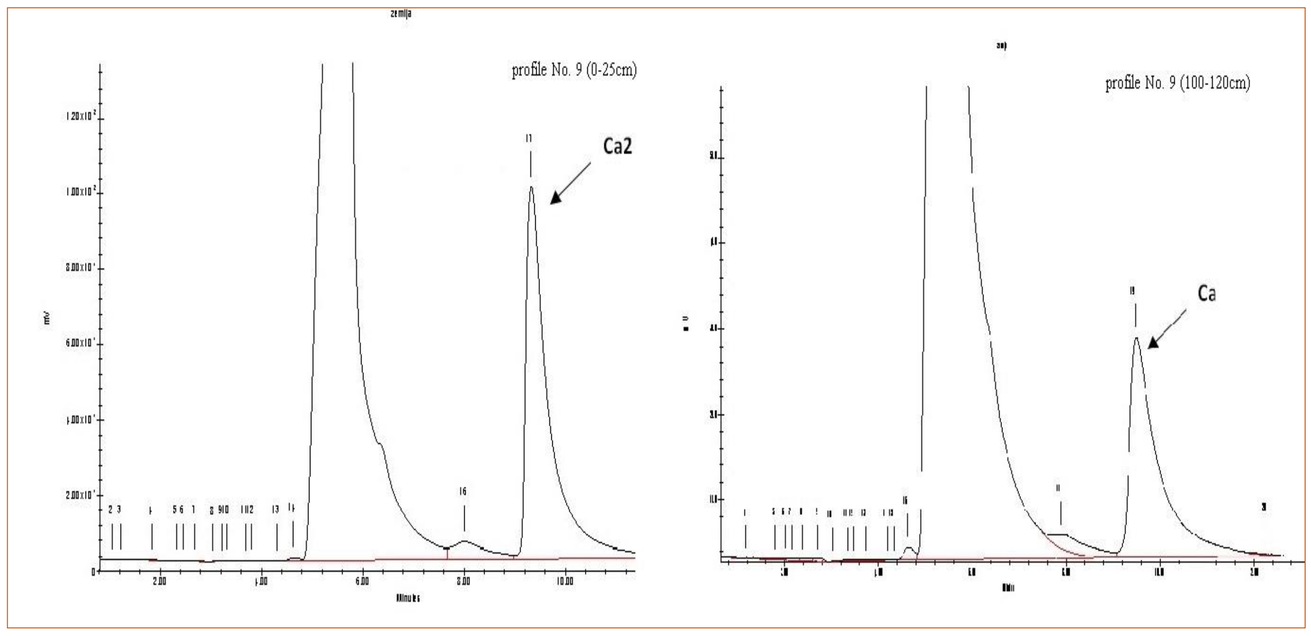

Figure 4. Ca chromatograph in carbonate profiles

CONCLUSION

The obtained results of the analysis show that the calcium content in the examined vertisols of Pčinja District is conditioned by the process of a certain microrelief humidity in the examined area and that its presence affects the potential fertility of the examined soil.
The results of the research show a higher content of magnesium in the nocarbonate vertisol in relation to the examined carbonate vertisol of the Pčinja District.
The content of magnesium in the largest number of tested profiles, both in noncarbonate and carbonate vertisol, increases with profile depth.