STUDY CONCERNING THE NITROGEN VARIATION TO CERTAIN REPRESENTATIVE TYPES OF SOIL IN THE SOUTH OF THE DOLJ COUNTY

STUDIU PRIVIND VARIAŢIA CONŢINUTULUI DE AZOT LA UNELE TIPURI DE SOLURI REPREZENTATIVE PENTRU SUDUL JUDEŢULUI DOLJ

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Abstract. *Under the condition of agricultural reinforcement, of the vegetable production growth but the rural development as strong links to socio-economic progress, too we can ask the proper questions:is there the posaibility of realises and mentaining the vegetable production growth without bringing major prejudices to the environment and to the people health and to the other living creatures of the trophic chain. These pryority but extremely difficult task is approached by the means of longlasting agricultural development as it was defined by the World Commision for Environmentand Development. Within this context we have studied the nitrogen content of certain representative soil types to established the need of these element to the long lasting agricultural. In the same time, there was estabilished other agri-chimical indicators which are directly related to the nitrogen, as pH, humus, index of nitrogen, phosphorsl and potassim. This way we obtained the whole image over the degree of fertility of soils in the south of Dolj county.*

Key words: index of nitrogen, degree of fertility, soil.

Rezumat. *În condiţiile intensificării agriculturii, a creşterii producţiei vegetale, dar şi a dezvoltării rurale ca verigi forte ale progresului socio-economic, se poate pune legitima întrebare: poate fi realizată şi menţinută creşterea producţiei vegetale fără a aduce prejudicii majore mediului înconjurător şi respectiv sănătăţii oamenilor şi celorlalte vieţuitoare ale lanţului trofic? Această sarcină prioritară dar şi extrem de dificilă este abordată prin prisma dezvoltării durabile a agriculturii aşa cum a fost definit de către Comisia Mondială pentru Mediu Înconjurător şi Dezvoltare. În acest context am studiat conţinutul în azot la unele tipuri de soluri reprezentative în vederea stabilirii necesarului acestui element pentru o agricultură durabilă. Concomitent au fost determinaţi şi alţi indicatori agrochimici care sunt în relaţie directă cu azotul, cum ar fi pH-ul, humusul, indicele de azot, fosforul şi potasiul. Am obţinut astfel o imagine de ansamblu asupra gradului de fertilitate al solurilor din sudul judeţului Dolj.*

Cuvinte cheie: indice de azot, grad de fertilitate, sol.

INTRODUCTION

The nitrogen from soil solution is presented under the form of ions :NO_3^-, NO_2^-, NH_4^+. A significant importance in the plant nutrition possessed the high concentration of NH_4^+ witch are to be found in early spring, before the intense starting of the nitrification processes. The nitrates concentration in the soil

solution increses in spring , afterwards it decreases in thr periods of maximal vegetable consumption. To support this idea, Borlan determined the values depending of nitrogen supply on nitrogen index of soil NI. The nitrogen index was also calculated in this paper, beside other indicators.

MATERIAL AND METHOD

To accomplish this study there were compared seven types of soils from the Dolj county, that is: eutricambosoil, psamosoil and aluviosoil, gleiosoil, solonet, solonceac, chernozem. For each and every type of soil there were taken medium samples up to 45-50 cm, for the medium stage of development cereal plant roots which are cultivated in this area. There were determined the following analises: total nitrogen, pH in distilated water, humus, phosphorus, potasium and nitrogen index after ICPA Methodology Bucharest.

RESULTS AND DISCUSSIONS

The study was made in 2007-2008 and present the next soils index on each type of soil as follows (fig 1-6).

The greatest quantity of total nitrogen was put in relief at the eutricambosoils type (0,284%) which is to be found in river meadows sand banks. The texture of the soils is muddy-muddy, the majority of soils beeing affected by the gleising processes. Compared to the other soils, like in gleiosoils the supply of soils into this element is big.(Fig. 1).

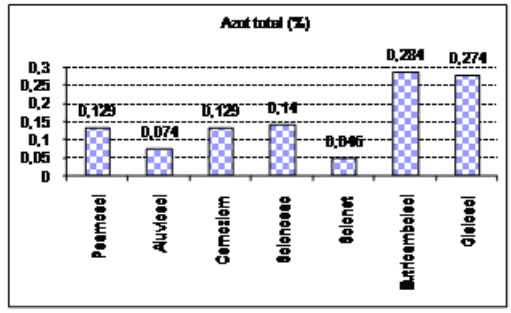

Fig .1. The content in total nitrogen in soils of the south of the Dolj county

In our agriculture system, the current situation of soil supply is make by nitrogen index. From this point of wiew, soils supply is weak and medium at psamosoils, alluvisoils, chernozems, solonceac, solonet, good enought at eutricambosoils and very good at gleiosoils (Fig. 2.).

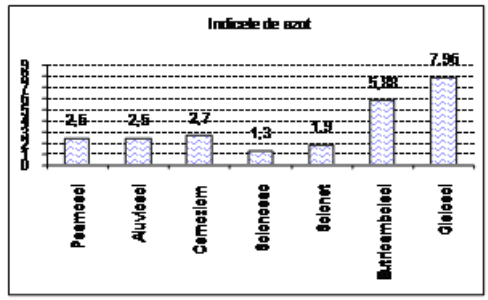

Fig. 2. The nitrogen index in soils of the south of the Dolj county

There is phosphorus in small quantities in soils, compared to the others macroelements. The analised soils are weak supply with phosphorus, eloquent values recording only in cernozeum soil case (Fig. 3).

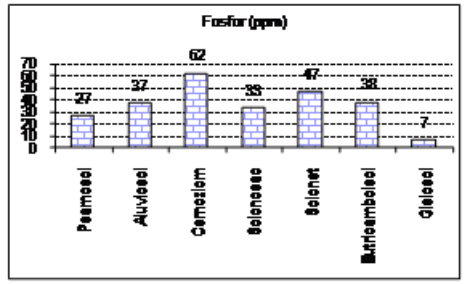

Fig 3. The content in phosphorus in soils of the south of the Dolj county

Depending on soil extraction degree, potassium has many form and values.Therefore, in fig. 4 the majority of analised soils are medium and well supply with potasium.

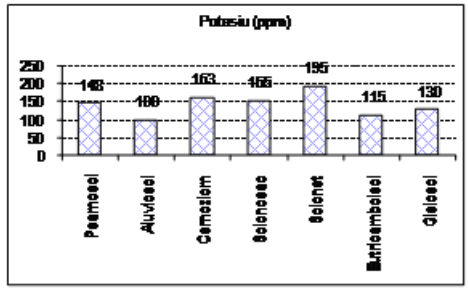

Fig.4. The content in potasium in soils of the south of the Dolj county

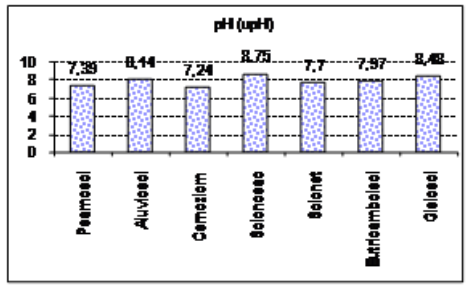

Fig. 5. Soil's pH values in south of the Dolj county

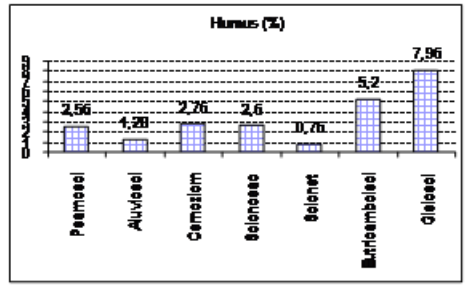

Fig 6. Humus content in soil of the south of the Dolj county

The analised soils are weak alkaline and strong alkaline in solonceac and gleiosoils case (Fig. 5). By quantity humus value is different in solonet soil and gleiosoil. These values are 0,76% in solonet soil and 7,96% in gleiosoil case.

CONCLUSIONS

From this paper result the direct relationship between the content of total nitrogen ,nitrogen index and humus content to the eutricambosoils and gleiosoils. There are phosphorus and potasium in small quantities in eutricambosoils and gleiosoils and in big quantities in chernozeum soils.

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