SUITABILITY FAVORABILITY SOIL AND THE CITY OF PERIMETER FAGET, TIMIS COUNTY FOR MAJOR CROPS AGRICULTURAL AND HORTICULTURAL

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Abstract
The Făget city is located in the south-western Romania, in the contact area of the Hills Plain Lugoj the upper Bega River. Plain occupies about half the land area is investigated and the lowest level morphology with hypsometric values between 75 and 200 m. In general, agricultural land is conditional evaluation of knowledge of the complex operation of breeding and fruit-bearing plants and to determine the degree of favorability of these conditions for each use and culture (as can be adversely land for certain crops and agricultural uses and favorable for others), through an index system of evaluation techniques and notes. Economically, soil suitability consider in determining the mark of evaluation, soil properties, landscape attributes, qualities that lead ultimately to the state of soil fertility and is closely correlated with human activity. All these features have led to a rather large diversity in the soil subtype, diversity is reflected in the evaluation marks value, value that has special ecological significance, the interaction between living organisms and the environment if the compared between plants, soil and other edaphic conditions for each crop in the sense of differentiated favorability and the possibility of obtaining agricultural production. The main types and subtypes of soils in the urban area Făget are: Regosoil, Luvisoil stagnated Luvisoil white, Gleiosolil typical, eutric. The nature and intensity degradation, synthesized according to the group land on their suitability for the main crops and horticulture, was analyzed for each limiting factor in part, to the way of expression in different parts of the area studied and the particular requirements and ameliorative measures of points.

KEY WORDS: soil, suitability, evaluation notes, favorability, fertility, pedogenesis processes

Faget city is located in the south-western Romania, in the contact area of the Hills Plain Lugoj Lugoj the upper Bega River. In the Timis County is in the east, a distance of 98 km and 33 km from the city of Timisoara Lugoj, which binds the national road DN 68. Same road to the east provides about Deva city, at a distance of 68 km. To explain the genesis of soils and to determine their time evolution, both natural conditions and the conditions of their use by man, is an analysis of specific and combined all the factors involved in these processes (as Ianos Gh., M. GOIAN., 1995).

The formation of soil cover, in addition to pedogenetic processes involved and some geological processes that interfere with the formation of soil cover and called it pedogeologice processes (N. Florea, 1985). The nature and intensity degradation, synthesized according to the group land on their suitability for the main horticultural crops, was analyzed for each limiting factor in part, to the way of expression in different parts of the area studied and the particular requirements and improvement measures of points question.

MATERIAL AND METHOD

A. Determination of physical properties

Soil texture - Cernikova method (principle underlying pipetting method is different sedimentation speed of particles in a liquid, depending on their size, according to Stokes' law). Setting grading percent by weight fractions was performed using the following formula:
Coarse sand (2 to 0.2 mm in diameter)% $= \frac{m_1 \, x100}{m_0 xF}$

Sand (0.2 to 0.02 mm in diameter)% $= \frac{100 x m_2}{m'}$

Dust (0.02 to 0.002 mm in diameter)% $= \frac{(m_2 - m_3) x V x 100}{(V x m_0) xF}$

Clay (diameter less than 0.002 mm)% $= \frac{m_3 x V x 100}{V x m_0 - dxF}$

where:
m_0 - the amount of land taken in the analysis, in g;
m_1 - the amount of coarse sand in g;

m_2 - the amount of particles extracted from pipetting I - (P + A), g;
m_3 - quantity of particles extracted from pipetting II - (A);
V - volume of suspension sedimentation cylinder cm^3;
v - volume pipette, in cm^3;
d - correction factor which depends on the nature dispersantului, used to treat evidence and that is equivalent to:
1.6 - the use of sodium hydroxide;
10.2 - using sodium hexametafosfatului;
m '- table completely dry and free of soil carbonates (g);
100 - Reporting potential factor.

Soil density (cm3) - by pycnometer, using distilled water;
Soil density is calculated using the following formula: $D = \frac{M_2 - M}{M_1 + M_2 - M - M_3}$ x *d*
where: D - soil density (g/cm3);
M - mass of empty pycnometer (g);
M1 - mass of the pycnometer filled with water (g);
M2 - mass of pycnometer with ground (g);
M3 - soil and water mass of the pycnometer (g);
d - density of the liquid at 20°C (when using distilled water which can be considered 1).

Apparent density (cm3)
Formula by which we calculated bulk density is: $DA = \frac{M_1 - M_2}{V}$
where: Y - bulk density (in g/cm3);
M_1 - mass soil cylinder fitted with metal lid (g);
M_2 - mass of empty cylinder fitted with metal lid (g);
V - volume (cm3).
Total PT porosity (%) was calculated using the following formula: $PT = \left(1 - \frac{DA}{D}\right) x100$
Aeration porosity PA (%). In order to determine it by calculation we used values of hydro and physical indicators: **PA = PT - CC x YES**
CC - field water capacity.

Settling and compaction (GT)
$GT = \frac{PMN - PT}{PMN} x100$
PMN = 45 + 0.163 x A
where: GT - the degree of compaction of soil;
PMN - minimum porosity required;
PT - total porosity;
A - clay content of soil.

B. Determination of chemical
Humus content of soil (%) - by titrimetric methods, respectively Tiurin method;
Principle is the oxidation of carbon in humus with chromic anhydride solution or potassium dichromate in the presence of sulfuric acid. A humus content of soil samples was calculated using the following formula:
$$\text{Humus\%} = \frac{(V1\ V2)\,\text{x f x}\,0{,}0005181\text{x}\,100}{\text{m}}\ \text{x K}$$
where: V_1 - volume of consumed 0.1 N Mohr salt solution to the blank titration (ml);
V_2 - volume of 0.1 N Mohr salt solution consumed in excess of chromic acid titration of soil sample analyzed (ml);
f - Mohr salt factor;
0.0005181 - the humus content in 1 ml g oxidant. chromic acid 0.1 n;
100 - Percentage reporting factor;
m - mass of soil sample analyzed (g);
K - coefficient is calculated for reporting results to the soil dry.
Soil pH - by potentiometric method in aqueous extract 1:2,5;
Determination of total nitrogen - was Kjeldahl method (soil mineralization is made by boiling with concentrated sulfuric acid in the presence of catalyst);
Mobile phosphorus - was determined by the Egner-Rhiem-Domingo on UV spectrometry - VIS;
Potassium treated - was extracted in ammonium acetate and lactate was determined by atomic absorption spectrophotometer;
The total capacity cation exchange (T) - was determined by the Bower;
Level base saturation (V%) - was calculated by the formula: $V = \frac{S_B}{S_B + S_H} X100(\%)$

RESULTS AND DISCUSSION

The main soil types and subtypes identified in the city Faget are Regosolul; Luvisol albic; Luvisol typical gley stagnate, eutric.

For hay, Luvisol albic received 64 points are located in the fourth grade of fertility, and stagnate Luvisol typical gley eutric have 58 points each, are classified as class V of fertility.

For arable Luvisol stagnic got 74 points, classified as class III and gley soil fertility and regosolul typical eutric got 60 points each being assigned to class V of fertility.

Apple culture, Luvisol albic received 68 points are classified as class IV and fertility regosolul received 47 points are classified as class VI fertility.

For hair culture, won Luvisol albic 68 points are classified as class IV and fertility regosolul received 46 points are classified as class VI fertility.

Plum culture, Luvisol albic got 75 points are classified as class III and fertility regosolul received 47 points are classified as class VII fertility.

For culture and sour cherry, Luvisol stagnic received 76 points are classified as class III and fertility regosolul received 44 points are classified as class VII fertility.

Apricot culture, Luvisol albic received 70 points are classified as class VI and fertility regosolul received 43 points are classified as class VI fertility.

For peach culture, Luvisol albic got 68 points are classified as class IV and fertility regosolul got 47 points are classified as class VI fertility.

Vineyard for wine culture, Luvisol albic got 67 points are classified as class IV and fertility regosolul received 35 points are classified as class VII fertility.

For vineyard culture for mass Luvisol albic got 65 points are classified as class IV and fertility regosolul received 33 points are classified as class VII fertility.

For wheat, Luvisol albic received 68 points are classified as class IV and fertility regosolul received 45 points are classified as class VI fertility.

For barley, Luvisol albic Sio Luvisol stagnic obtained by 63 points each classified as Class IV of fertility and regosolul received 46 points are classified as class VI fertility.

For corn, Luvisol stagnic albic and got 73 points each being assigned to Class III of fertility and regosolul received 30 points are classified as class VIII of fertility.

For sunflower, Luvisol and Luvisol albic stagnic got 72 points each being assigned to Class III of fertility and regosolul received 30 points are classified as class VIII of fertility.

For potato, Luvisol stagnic albic and got 57 points each being assigned to class V of fertility and regosolul received 35 points are classified as class VII fertility.

For sugar beet, Luvisol stagnic albic and got 63 points each being assigned to class IV of fertility and regosolul received 41 points are classified as class VI fertility.

For soybeans, Luvisol albic's got 72 points are classified as class III and fertility regosolul received 33 points are classified as class VII fertility.

For peas and beans, Luvisol stagnic albic and got 72 points each being assigned to Class III of fertility and regosolul received 30 points are classified as class VIII of fertility.

For seed flax Luvisol albic obtained 63 points being classified as class IV and fertility regosolul received 30 points are classified as class VIII of fertility.

For flax tow, and albic Luvisol stagnic got 65 points each being assigned to class IV of fertility and regosolul got 33 points being classified as class VII fertility.

For hemp, Luvisol albic received 63 points are classified as class IV and fertility regosolul received 30 points are classified as class VIII of fertility.

For Lucera, Luvisol stagnic received 64 points are classified as class IV and fertility regosolul received 32 points are classified as class VII fertility.

For clover, Luvisol albic received 65 points are classified as class V and regosolul fertility has received 32 points are classified as class VII fertility.

For vegetables, Luvisol stagnic albic and got 63 points each being assigned to class IV of fertility and regosolul received 34 points are classified as class VII fertility.

CONCLUSIONS

Productive and achieve full potential yields can be expected in compliance measures necessary pedoameliorative as well as strict compliance with current cultural technologies, noting that in this respect between soil characteristics and economic performance of crop production activity is a direct link.

The main soil types and subtypes identified in the city Faget, Timis county were:
Regosolul, 1.8% of the investigated area;
Albic Luvisol, with 38.5% of the surface;
Luvisol stagnated, with 26.8% of the surface;
Gley typically eutric, with 32.9% of the investigated area.

Depending on the soil group classes of favorability we conclude the following:

I Regosolul is favorable for pastures, meadows and arable and maize, sunflower and pea-bean is favorable II;

Luvisol albic, is very favorable for pastures and for potato I is favorable I;

Luvisol stalled I is favorable for pastures and hay fields for potatoes and II is very favorable;

Gley typically eutric, II is favorable for pastures and for apricot, lively wine, meal and potato vine is favorable I.

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