About Information Model of Soil Classification

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***Abstract*— In this work we describe the information model, which will allow making system of soil parameters by means of which it will be possible to connect available *classifications*.**

Keywords*— *diagnostic soil; soil classification; humus

I. INTRODUCTION

Goal of present research is description of soil parameters as diagnostic characters for different types of classification.

There have been made words on soil classification for today. Soil grouping for the most important properties, origin and fertility features are understood by classification. Task of soil classification is integration of soil in taxonomic groups for construction, composition, properties, origin and fertility. In a world, soil classification shall be based not only on properties and features but also on particulars of genesis that is origin. The first such genetic classification was worked out by V. V. Dokuchaev in 1886.

II. MAIN PART

For the principles put in the base all soil classifications are divided into natural historical made according natural features: petrographolitologic (Fallu), chemical (Knopp), physical (Tayer), genetic (Dokuchaev), ecologic (Volobuev), geochemical (Glazovskaya), evolutional (Viyams), and applied (agronomic, forestry, land reclamation, apparaising and estimating, sanitary and etc.) In the countries of former Soviet Union and certain other countries genetic classification is universally recognized as this operates with genetic types and subtypes of soils in the first place where soil origin, material constitution and soil formation terms are taken into account.

Soil classification where construction particulars of diagnostic soil levels are put in base is accepted in the countries of Western Europe along with genetic one.

Along with genetic soil classification for mechanical and granulometric composition is available as well.

If we consider soil classification for mechanical composition the matter at issue is percentage ration of fractions of physical sand and physical clay in this case. Genetic particulars of soils which are reflected in gradation difference of the content of physical sand physical clay while name definition of mechanical compositions of soils different for their genesis are taken into account here.

For mechanical composition rocks and soil may be divided into groups:

- sandy;
- sabulous;
- loam;
- clay.

Soils of different mechanic compositions differ significantly for properties and have unequal fertility .

Soil classification for granulometric composition means subdivision of soils into groups for content of various granulometric fractions. Granulometric composition of soil and pedogenic rocks define soil as a polydisperse system. Kind of soil is one of a significant unit of soil classification in practical respect.

Basis for separation of rock horizons is:

- total power of humus soil horizons,
- content of humus,
- alkalinity degree,
- depth and chemical salinization,
- fusibility degree,
- composition and depth of occurrence of saline horizon and etc.

Soils may be labeled to classification subdivision on the base of diagnostic parameters. The following four groups refer to the main diagnostic parameters:

1. ecological and geographic;
2. morphologic;
3. physical;
4. chemical.

For example, we may discuss one of diagnostic indexes which refers to chemical parameters – humus reserve. Humus is complex of various organic compounds, stock of nutrients formed in soil. Humus quantity in various soils is not the same. Humus is a main source of supply of plants by nitric food. Total reserve of humus in metre stratum depends on structure and degree of soil taming.

Humus reserve (t/ha)	Alluvial-meadow	Meadow and paludal
0-20 sm	76-110	64-125
0-50 sm	132-213	107-244
0-100 sm	196-324	228-315

If depth of humus stratum is 30 sm, humus composition is 2-3% and soil density ranges 1.12 g/sm^3 humus reserve while calculation under the following formula:

$$0{,}3\ m \times 10000\ m^2 \times 0{,}025 \times 1{,}12\ t/m^3 = 84\ t/ha$$

will be 840 *kg* for one hudred square metres.

Similar value of any diagnostic index of two or several soils does not suggest that these soils refer to one type. They may vary for other diagnostic indexes. M.Babayev offers more than 40 diagnostic indexes of soil classification in his book "Contemporary soil classification of Azeraijan".

III. CONCLUSION

Thereby, the abovementioned descriptions allow making of a single system of soil parameters by means of wich it will be possible to connect available classifications.

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