

## Physical characteristics of general desert sandy soil of Forish district

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**Abstract:** In the article the research results concerning to study of general physical peculiarities of sandy soils have been revealed which spread in Forish district of Djizzakh province. According to obtained data, general physical peculiarities of sandy soil is characterized with being less hollow and with excess capacity and comparison weight due to originating of soil deflation, depending on processes of soil formation, also micro aggregates of soil have been kept little and composition of various voluminous sand particles. The fluctuation of soil capacity weight along with the profile 1.24-1.53g/sm<sup>3</sup> interval, comparison weight 2.52-2.75g/sm<sup>3</sup>, hollow from 40,6 to 53,0% has been observed.

**Key Words:** desert sandy soil, capacity of soil, comparison weight, hollowness, soil composed maternal substances, pasture, soil fertility, degradation.

### 1. INTRODUCTION:

In Uzbekistan the pastures occupies 20,8 mln. ha (it is equal half of the total area of the country), 17,4 mln. ha is considered as desert area. During the past 15-20 years a number of wrong ways of usage of this land like moveable herd, not using it in the norm, excessively rearing herd in the pasture and under the other anthropogenic impacts resulted in losing nutrition amount –degression came out. 16,4 mln. hectare of pasture from 20,8mln faced to degression, from it 20-30% of fodder nutrition in 9,3mln.ha; 5 mln area that is 30-40%; nearly 21 mln. or 40% of fodder nutrient became degression. Degression state was observed mainly in Djizzakh, Samarkand, Navoi, Bukhara regions and Karakaplakstan republic. More than 70% of area, including one - third of it faced highly degression [1]

The main reasons of decreasing of pastures fertility: firstly, climatic changing; secondly, no regulation the pasture usage process, especially at a time of loading the number of cattle for the discretion of the population; thirdly, not developing of the stock running system in modern condition; fourthly, instead of replacing insignificant plant species for economy as reduction feed plant types; the fifth might be sufficiently neglected to performing of irrigation and meliorative works and application of mineral fertilizers as well as establishing seed breeding. All abovementioned are the degression causative factors and it is admitted reasonably to prevent seriously for the rapid development of the field.

To keep the pasture and enhance the efficacy are the prior issues of today's and accounting the vital place in providing sustain of the rural life, for these purposes to apply all factors altogether serve to ameliorate the living standard of people and the country's economic strength. Effectively utilization of pasture resource and improvement of melioration state also for liquidation of ecological problems usage of advance and efficacy methods are one of the prior issues that need to be solved.

To create an environmentally friendly pasture agrophytocenosis technologies was studied on increasing fertility of the desert pastures and to establish barrage, the creating nature conservator pasture [2] in order to ameliorate and preserve the facility for originated degression lands and in purpose of keeping meliorative state, it is corroborated to enrich the plant life of pastures by the practical and theoretical point of view [3]

In Uzbekistan physical- mechanic, water –physical and agrophysical peculiarities of the desert and irrigated soil were studied [4,5,6,7,8,9]. However, the information relating to prevent degression and features of the sandy soil which spread in the desert is not sufficiently. For this reason, to get high and quality yield, at the same time preserve the fertility of the soil and restore, and conservation it, improvement of ecological entourage are importantly specified.

### 2. MATERIALS AND METHODS:

The investigations were held during the 2012-2014 years in state water reservoir 200ha lands that belong to “Main Special Constructor Bureau- Agromash” Open joint stock company in Djizzakh region, Forish district.

Investigations mainly identified by the methods of routes – expeditionary, stationary – key grounds, cameral – laboratories, with the help of soil capacity analysis – cylinder, comparison weight –pycnometer, by calculating general hollowness.

### 3. RESULTS AND DISCUSSIONS:

General physical peculiarities of the soil with expressing the point of occurrence process in the soil and their effectiveness or calculating the degression degree are the most important criteria. It is known that studying physical characteristics of the soil plays crucial role to develop scientific basis of highly effective and rational farming, because general physical characteristics of soil impact greatly on the biological and degression appearing processes

The soil capacity weight is essential to indicate its productivity especially in developing cultivated plants in the same norm and increase their fertility. The soil capacity weight is very changeable compare to the comparison weight of ground phase, mainly, amount of aggregates depends on the density and water persistence level.

With the accordance of data results, highly impacted of sandy soil has been observed in the area where were studied and this index fluctuated between 1,24 g/cm<sup>3</sup> and 1,63 g/cm<sup>3</sup> along the profile excessive amount (Table).

Existence such high density in the soil because of that they have little amount of organic matters, in mechanical component exist much fine soil particles and as placing density particles unstructurally, besides that it is interpreted as formation of various laid outs in profile that is aeolus, proluvium, dellevium laid outs.

The ground phase of soil consists of primary and secondary minerals as well as organic substances so its comparison weight fluctuates depending on the amount and types of minerals in it. Obtained data indicated that there was observed no a certain criteria in comparison weight index along the soil profile. As studied sandy soil was provided with too least rottenness, it has high comparison weight and this point fluctuates along the soil profile between 2,52 - 2,71 g/cm<sup>3</sup> (Table).

Besides, comparison weight is so height of this soil due to existence of hard quartz, irestone and iron hydroxidein its mineralogic component, as well as unstructural soil. Change abilities in the weight of capacity and comparison is expressed in the hollowness and it changes along the soil profile from 40,6 to 53,0% (Table). Mechanical component of sandy soil makes up tiny sand particles and they placed impacted, this causes imperatively dropping of general hollowness.

**Table. GENERAL PHYSICAL CHARACTERISTICS OF SANDY SOILS**

Part number and soil name	Layer depth, cm	Weight capacity, g/cm <sup>3</sup>	Comparison weight, g/cm <sup>3</sup>	Hollowness, %
<b>Part -1. Sandy soil</b>	0-10	1,42	2,65	46,4
	10-25	1,41	2,62	46,1
	25-40	1,42	2,66	46,6
	40-72	1,56	2,68	41,7
	72-96	1,24	2,62	52,6
<b>Part-2. Sandy soil</b>	0-9	1,25	2,66	53,0
	9-25	1,38	2,64	47,7
	25-45	1,41	2,65	46,7
	45-85	1,38	2,62	47,3
	85-120	1,46	2,58	43,4
<b>Part -3. Sandy soil</b>	0-11	1,32	2,66	50,3
	11-35	1,52	2,69	43,4
	35-65	1,42	2,67	46,8
	65-103	1,38	2,65	47,9
	103-154	1,29	2,70	52,2
<b>Part-4. Sandy soil</b>	0-10	1,33	2,73	51,2
	10-30	1,43	2,71	47,2
	30-52	1,39	2,68	48,1
	52-90	1,52	2,56	40,6
	90-125	1,53	2,62	41,6
	125-155	1,41	2,71	47,9
<b>Part - 5. Sandy soil</b>	0-9	1,32	2,54	48,0
	9-22	1,52	2,58	41,0
	22-41	1,50	2,59	42,0
	41-67	1,37	2,68	48,8
<b>Part -6</b>	0-8	1,45	2,53	42,6

<b>Sandy soil</b>	8-21	1,44	2,53	43,0
	21-41	1,40	2,57	45,5
	41-78	1,32	2,58	48,8
	78-120	1,30	2,56	49,2
<b>Part -7. Sandy soil</b>	0-11	1,34	2,58	48,0
	11-32	1,49	2,53	41,1
	32-61	1,47	2,70	45,5
	61-88	1,45	2,66	45,4
	88-130	1,41	2,55	44,7
<b>Part- 8. Sandy soil</b>	0-11	1,30	2,66	51,1
	11-32	1,46	2,61	44,0
	32-55	1,63	2,60	37,3
	55-91	1,46	2,58	43,4
	91-128	1,27	2,52	49,6

#### 4. CONCLUSION:

To summarize the results based on gained, general physical characteristics of sandy soil has been observed differently depending on appearance soil process deflation.

It is characterized with low hollowness and high comparison weight and capacity due to consisting of various great soil particles of the soil and with existence little microaggregates in it. It has been observed the fluctuation along the soil profile between 1,24 - 1,63 g/cm<sup>3</sup>, in comparison weight 2,52 - 2,75 g/cm<sup>3</sup>, hollowness fluctuates from 40,6 to 53,0%.

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