

ESTABLISHMENT OF TREES IN SANDS AND THEIR DEVELOPMENT.

Hodjayeva Nodira Odilovna

Andijan Institute of Agriculture and Agro-Technology Associate Doctorate;

Abstract: Distribution of sand and loam soils, water-physical properties and their utilization, measures to increase soil fertility are highlighted.

Key words: Sand, sandy areas, fine particles, alluvial, deluvial sands, water-physical properties, vegetation.

Sands in drought regions 83 min. and mainly corresponds to the territory of Central Asia and Kazakhstan. 72 million of them belong to the Asian region and the rest to the European region. The deserts of Central Asia are located in the north of the deserts of the globe and are divided into sandy, stony, gypsum and sandy deserts. They make up 40% of the territory of the Republics of Central Asia and Kazakhstan. 18% of them belong to sandy deserts. Physico-geographic characteristics of Central Asian sands are as follows:

1. Rivers of Central Asia begin in mountain regions and pass through desert regions without joining new tributaries, losing their characteristics.
2. Daytime air temperature is high, up to +50 C, soil surface temperature up to +80 C. It will be cool at night, the daily variation is 30-40 C in the air, and 60-70 C on the surface of the soil.
3. The amount of annual precipitation is low, they fall mainly in the winter and spring seasons.
4. A permanent layer of snow does not form, the falling snow melts quickly.
5. Evaporation is 10 times more than annual precipitation. The air is dry, relative humidity can decrease to 10-5%.

6. Groundwater is located deep below the layer of roots of sandy plants, has a strong mineral content, and the wind speed is 15-20 m/s or more.

Karakumlar occupies an area of 400,000 sq. km, i.e. 88% of the territory of Turkmenistan. Groundwater, sands are saline. Qizilgumlar - 250,000 sq. km, that is, 70% of the territory of Uzbekistan. The northern part of Kyzylkum is 200,000 sq.km. the field is located in Kazakhstan. The northern border of Kyzylkum is bounded by the Syrdarya River, the southern border by the Amudarya River, the Aral Sea in the west, and the Zarafshan Valley in the east. Fargona Valley Sands. The largest massif of sand in the Fargona valley includes Karakalpok, Kayrakchi-kum and sands located on the left bank of the Syr Darya. Groundwater is at a depth of 5 m.

As the environmental conditions change in the sand, the plant layer in them also changes, and this is called succession. The desert zone is located in the western plains and is geologically young (Quaternary, Paleogene). These places (provinces) are as follows; It is divided into Ustyurt, Amudarya and Kuzilkum regions. Our research was conducted in Kyzylkum region.

A number of measures are being taken to combat the exploitation of sandy soils in agriculture

The act of elimination. In these activities, it is mainly not to feed cattle irregularly in sandy territories, not to prepare firewood in an irregular manner. To take care of meadows and thickets, that is, not to lose them. Such actions are carried out.

Active wrestling events. This action is aimed at strengthening the sands, preventing them from moving further. To achieve this, it is necessary to protect the sand surface from the wind or slow down the wind speed. For this, mechanical fences are made. These include vertical barriers (curbs, walls). They will be at different distances from each other. Mechanical environments create good conditions for the growth of vegetation and seedlings.

The type and design of mechanical enclosures used for dune reinforcement and afforestation depend largely on the local wind regime and sand type. According to SredAzNIILX's inspections conducted in regions with different wind regimes, it is sufficient to use the following types of mechanical enclosures. Chetans that are installed vertically or horizontally and "Uzala" chetans.

Until now, mechanical barriers have been built by hand, which is a laborious task. Efficient and cost-effective methods are often used in consolidation and development of mobile sands.

One of these methods is "blocking" of barkhans, in which black saxow and cherkes are planted in the lowlands between the barkhans.

These trees stop the movement of dunes by blocking the path of shifting sands, as a result of which the top is gradually flattened and burned.

The seeds of saksovu and other sand barrier plants are spread over large areas by car or airplane. The plane (AN-24) sows seeds on 1500-2000 hectares of land per day. With the GAZ-69, GAZ-63 car and the DT-24 tractor, 30-40 ha of seeds (black saxophone and chergus) are sown per day.

Black saxophone is hardy and serunum. Its height is usually 4-5 meters, the diameter of the bottom of the trunk is 0.5 m, the upper root system is well developed, and it also has a thick root that grows vertically up to 8-10 m and reaches the water.

The white saxophone grows to a height of 4-5 m, the diameter of the bottom of the body is up to 20 cm. It can use deep groundwater.

In addition to white and black saxophones, the experience of planting Circassian and sugarcane seeds and transferring seedlings is being carried out, that is, the method of mixed cultivation of plants is also being used.

Planting of chergus and sugarcane in sandy areas with sparse grass growth: mechanical fences are not used here, as grass and shrubs grow naturally there. These plants can easily stop the movement of sand.

In saline sands, deep agates are taken every 10-15 m with a grader. These trap the wind-blown sand and cover the top of the ridge. As a result, there are favorable conditions for transplanting salt-resistant tree seedlings (lox, yulgin, sarsazan, etc.).

In the afforestation of carbonate sands near fresh spring water, it is recommended to plant deciduous and fruit trees: poplar, wild linden, white acacia, peach, plum.

Sands can also be cultivated with irrigated plants. For example, in Kyzylkum, large areas of hay are being made to feed livestock, fruit trees are being planted, and rice crops are being planted. All this is irrigated with artesian water.

Herbs such as celandine, sedge, and sand sedge can also be used to strengthen sand. Currently, ways of strengthening sands by physico-chemical methods (adding binders to sands) are being studied.

Unsystematic firewood preparation and loss of meadows and thickets should not be allowed.

Development of sandy and loamy soils. In the conditions of Central Asia and South Kazakhstan, sandy and loamy soils can be cultivated by planting trees and fruit trees, vines, grains, vegetables and technical crops.

Depending on the conditions, crops and seedlings can be irrigated or not.

Special measures are taken for the development of sandy and loamy soils. One of such actions under irrigation conditions is compaction of the soil.

In order to create a humus layer on the soil, to enrich it with fine-grained soil, it is compacted. For this, muddy water with a lot of fine particles of soil discharge is supplied to the sandy field. During compaction, muddy particles migrate to the upper layer of the soil, and part of the colloidal and muddy particles are absorbed into the sand.

Summary. To increase the productivity, viscosity and moisture capacity of sandy and loamy soils, it is necessary to apply a large amount of soil and organic

fertilizers (up to 30-40 t/ha of manure), as well as to plant siderate plants (grass-fertilizers) there.

When this is done, the roots of plants develop strongly in these layers and become denser by entangling each other. In this layer, rainwater is retained, the moisture capacity of the soil increases, and the plant can fully use it.

Crop rotation is important in the cultivation of sandy soil. Some sandy areas are planted with plants such as sand erman (wormwood), sand stone and used as pasture. If these plants are sufficiently developed, valuable fodder is made from them. In this case, it is necessary to follow a certain regime, i.e., the procedure for using the pasture.

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