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THE INFLUENCE OF SEPARATION OF ABOVEGROUND PART ON THE ROOT SYSTEM OF PHYTOMELIORANTS

M.T.Yulchieva
Department of Pharmacognosy Tashkent Pharmaceutical Institute, Tashkent, Uzbekistan
,**F.M.Dustmuratova**,
Tashkent Botanical Garden named after Acad. F.N. Rusanova at the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan, Tashkent, Uzbekistan.
S.X.Abdinazarov,
Tashkent Botanical Garden named after Acad. F.N. Rusanova at the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan, Tashkent, Uzbekistan.
FakhriddinovaD.K..
**Tashkent Botanical Garden named after Acad. F.N. Rusanova at the Institute of Botany of the Academy of Sciences of the Republic of Uzbekistan, Tashkent, Uzbekistan.

Annotation: *The article reveals the scientific data on the influence of the crop on the root system of some phytomeliorants. Izen, keyreuk, chogon, teresken were selected and planted from phytomeliorants. The influence of the cultivated phytomeliorants on the subsoil was observed at different stages of development of the aboveground parts.Scientific research has shown that plants have a stronger root system than those that are harvested twice above-ground once.In the upper part of the plants, 15-17 cm (variant I) and 5-7 cm (variant II) were harvested once and 15-17cm (variant III) and 5-7 cm (variant IV) were harvested twice.*
The studies showed that the root system of plants was strongly developed in variants III-IV.
When the above-ground part of the phytomeliorants was cut 2 times, leaving 15-17 cm, their above-ground part grew well and accordingly the root system of the plants also developed strongly.

Key words: phytomeliorants, izen,keyreuk, teresken, chogon, mowing, separation of the aboveground mass, root system, pastures.

Introduction. Providing the population of the country with livestock products, and industry with raw materials can be carried out by transferring it from an extensive to an intensive path of development. In the paper, special attention is paid to the multi-mowing use of forage grasses, which increases the productivity of pastures by 20-25%.

The above fully applies to sheep breeding in Uzbekistan, based on low-productive (0.5-3,0 c/ha) pastures of desert and semi-desert zones. Degraded areas are improved here by sowing izen (Kochia prostrata), keyreuk (Salsolaorientalis), chogon (Holothamussubaphillus), teresken (Ceratoideseversmanniana) and other types of forage plants. However, the exploitation of their crops without taking into account the biological characteristics of plants leads to a shortage of crops, a decrease in the quality of feed and other undesirable results. Meanwhile, how not only the yield and quality of forage, but also the productive longevity of artificial forage lands, depend on rational use. This made it necessary to conduct appropriate experimental research aimed at developing the scientific foundations for the rational use of the crops of these plants.

The purpose and objectives of the research. The purpose of our work is to influence the heights and the multiplicity of separation on the formation of the root system of the izen and our other objects.

The tasks of the research included: - Description of the formation of the root system in the case of double separation.

The objects of study were izen (Kochia prostrata (L.) Schrad.), keyreuk (SalsolaoriantalisSGGmel.)), chogon (Halothamnussubaphyllus (C.A.Mey.)Botseh.)andteresken (Ceratoideseversmanniana (Stschegl. ex Losinsk) Botseh et Ikonn are the main phytomeliorants used to improve degraded desert and semi-desert pastures.

These plants are very resistant to the harsh conditions of the arid zone. They are distinguished by good survival rate, as well as the accumulation of sufficiently high forage mass and seeds.

Izen is a semi-shrub, in nature 10-75 cm in height, ascending pubescent, usually with erasable short curly hairs, sometimes with an admixture of long woolly hairs. Leaves are linear or filiform, flat, with adpressed hairy pubescence. The inflorescence is intermittent, spike-shaped or paniculate. Flowers are 3-4 in glomeruli in leaf axils. The perianth is pubescent, with fruits its lobes on the back have appendages either in the form of rounded flat tubercles, or in the form of oblong membranous with darker veins, narrowed at the base, along the edges of the rounded-toothed wings. Seeds are about 2 mm wide, round or round-oval, depressed in the middle on both sides, brown, glabrous, smooth. It blooms and bears fruit in July-September. In culture, in favorable years and depending on the growing conditions, its height reaches 2 meters [5].

It grows on stony and clay slopes, on sands and salt licks. In Uzbekistan, it is found in the Tashkent, Namangan, Andijan, Fergana and Samarkand regions, the Republic of Karakalpakstan.

General distribution.Central Asia, Caucasus, Siberia, Central and Southern Europe, Asia Minor, Iran, Afghanistan, Himalayas, Mongolia, China.

Keyreuk is a highly pubescent xerophilous dwarf shrub, from 15 to 40, sometimes up to 80 cm in height, with gray-green annual shoots covered with dense hairs. The bushes are rather loose and spreading. Leaves are rolling, alternate, sessile, pubescent, juicy, spring, larger than summer ones. The inflorescence is paniculate. Flowers are five-membered, bisexual [12,13].

Fruits are single-seeded, lysicarpous, non-opening, perianth with wings, in color from light yellow to dark brown. Its leaves are not fused.

Keyreuk has a wide adaptability to soils: it is found on gray soils (mostly clay and gravel, solonetzic, less often sandy), takyrs, thin and fixed sands, on salt marshes.

The area of the keyreuk is quite extensive: it covers Dzungaria, Iran, Afghanistan, China. In Central Asia - in the Balkhash region, Karakum, Kyzylkum, in mountainous Turkmenistan, in the basin of the Amu Darya and Syrdarya rivers [13].

Chogon is a semi-shrub, sometimes very woody, 30-120 cm in height, green, glabrous, strongly branched. Leaves are alternate, linear, rolling, pointed, slightly creeping along the stem; bracts broadly ovate, pointed, scariously bordered at the edges, equal to the bracts and shorter than the perianth, in exceptional cases longer than it, sometimes linear and semi-lumpy. Bracts almost semicircular, pointed, broadly membranous-bordered, shorter than the perianth. The tepals are broadly scariously fringed, the outer ones are in the form of an almost equilateral triangle with rounded corners, the inner ones are elongated-ovate or oblong-oval, in fruits at the middle of the backs with wings, over which the perianth is assembled in a gentle cone. The lobes of the subspinal disc are semicircular, more or less equal in width to the bases of the filaments. The stigma is grooved along the length, chopped off at the top [12,13].

Fruits are one-seeded, lysicarpous, with a sclerophiedperegonal cover formed by 5 tepals, with wings. The seed is round, slightly concave. The embryo is spiral, with a yellowish root and two dark green cotyledons [14,15].

The Chogon area includes Central Asia, a significant part of Iran, in Kyzyl Kum, Karakum, in the northern Ustyurt, in the northern foothills of Karatau, on the adyrs of the Fergana Valley, in some regions of Tajikistan, in Badkhyz [10,13].

Under natural conditions, chogon begins to vegetate in March, blooms in May-June and less often in July, it bears fruit in September-October. Leaves and fruits fall in October-early November, dry up in late November-early December. The shoots of the current year will become lignified after the leaves and fruits fall.

Along with its nutritional value, chogon has other useful qualities. Alkaloids, widely used in medicine, are found in the green parts and roots. Extracts of green twigs color the fabrics in brown and dark red colors. The decoction is used to wash and strengthen hair. Ashes can be used to treat anthrax in humans and to heal wounds, as well as for making soap [10].

Teresken is a broadly bushy shrub up to 100-120 cm in height, with erect stems, strongly branched in the upper part. The hairs of eight to ten-ray leaves are short-petiolate, ovate or oblong-ovate, cordate at the base, with a clearly branched midrib, 0,.5-2,5 cm in length, up to 1,5 cm in width, velvety pubescent on both sides. Female flowers during fruiting are 3-4 mm long, about 2 mm wide, with the free part of the bracts usually very short, 5-6 times shorter than the fused part, slightly bent, with 4 protruding bundles of hairs exceeding the apex of the fruit.

Teresken can be found in the foothills and low mountains of the Tien Shan and Pamir-Alai. Outside the CIS, this species grows in Dzungaria, Kashgaria, Western Mongolia [11, 12]. It grows in desert and semi-desert, steppe and mountainous regions. It inhabits sands, solonchak and gypsum-bearing soils, fine-earth-gravelly, stony-gravelly and forest slopes of foothills, on talus and fine-gravelly gravelly substrates of high mountains, along dry beds of plain and mountain rivers [10,5].

Teresken is widespread and forms thickets in Central Asia: in Muyunkum, Taukum, Sary-Ishik-Atrau. In Uzbekistan, it dominates in communities on thin sandy deposits of foothill plains, outlier uplands of the Kyzyl Kum mountains [7, 10].

On adyrs, teresken rarely dominates the vegetation cover, although it is a common plant on stony-gravelly soils of the lower and upper adyrs, where it is part of wormwood communities. On the adyrs of the Fergana Valley, the teresken-wormwood formation is distinguished with a dominant finely dissected wormwood. It is noted that the communities of this formation are most common in the northeastern part of the Turkestan ridge, they are found on the southern spurs of the Kuraminsky ridge, in Mailisai. Together with the Sogdian wormwood, teresken grows in the spurs of the Chatkal ridge [5].

Research conditions and methods. The study was carried out on the piedmont plain of the Nuratau ridge with plants of two to five years of vegetation. The soil is light gray soil, cartilaginous-pebble-loamy with close occurrence of underlying large fragments of parent rocks. The mechanical composition of the upper horizons consists of loam. Gypsum appears from a depth of 60–80 cm. Average annual precipitation is 214 mm, which falls

mainly in the winter-spring period. Over the years of research, the amount of precipitation ranged from 180-335.4 mm.

The root system of plants was investigated according to the method of M.S. Shalyt [16] and by the method of moistened wells by S.G. Golovchenko [6]. During the excavation, the roots were sketched in vertical projection.

The experiment consisted of four options, in options I - II, only one cut was carried out annually during the ripening of fruits (18 - 13 X), in the rest, two cuttings were carried out. The first cuttings in III - IV variants were carried out in the phase of active growth (end of April - 1st decade of May). The aftermath was mowed in the fruiting phase (end of October). The height of the separation of the aboveground mass is 15 - 17 cm from the root collar (I, III) and 5 - 7 cm (II, IV variants).

Under the conditions of culture, the root systems of these plants have been studied by many researchers [4,5,6,7,9]. According to many authors, it has been ascertained that the depth of penetration and the nature of branching of the root system depend not only on the amount of precipitation, but also on the type of soil. In particular, the presence of dense gravelly layers, as well as the shallow bedding of gypsum, prevent the penetration of roots to great depths and cause their development in the horizontal direction [11]. So, for example, in the Dekhibalyand tract (Southern Kyzyl Kum) dense rubble layers prevented the penetration of roots even in 20-year-old plants of more than 1,7 - 2 m. Large lateral roots were located in the 40 cm horizon, extending in a radius of 1,5 – 1,7 m. A similar picture was observed at the South-Gibi station of the Institute of Pastures and Forages of Mongolia [3]. And on the sandy loam soils of the Keleskychul with traces of gypsum at a depth of 120 - 180 cm, the main root of the izen deepened into the soil at the end of the third year of life up to 6 m. The main roots of the keyreuk and chogon, in contrast to izen, penetrate the cartilaginous-crushed layers of crystalline gypsum. The study of the influence of the density of standing and the methods of plant placement in the Karshi steppe, as well as in the Keles pasture massif [1] showed that the development of the root system depends not only on the type of soil, but also on the method of sowing and plant density. Excessive thickening of crops inhibits the development of the root system. The latter negatively affects the growth and development of aboveground organs and their productivity. We observed a similar picture in other plants.

It seemed interesting to us to find out whether the height and the multiplicity of separation of the aboveground part on the formation of the root system of izen and other plants, since this issue was not touched upon by researchers before us.

From the works of P. Krenke [8] it is known that pruning increases vital activity in the remaining parts of the crown and root system; at the same time, full-fledged bushes with branches of different ages are formed, the size (surface) of the bush increases. V.O. Kazaryan [8] noted that pruning (removal of the upper skeletal branches), used in horticulture to enhance the growth and restore the productivity of trees and shrubs, leads to a change in the ratio between the mass of leaves and roots in favor of the latter. At the same time, the lost aerial parts are vigorously restored, and then the growth of the roots themselves is enhanced. Pruning causes the formation of new young metameres, and with the appearance of new metameres, the root system is also renewed, and the life of plants is lengthened. Pruning is also a means of increasing the productivity and vitality of woody plants.

Results and their discussion. The results of 4 - year observations have shown that all these provisions are quite applicable to our objects. First, the intensity of shoot formation varied in the studied species according to variants depending on the height, frequency, and timing of the first cut. The number of shoots on plants increased from year to year. With two mows, the number of both spring and summer shoots turned out to be greater than with one mowing, especially when the first mowing was carried out early (26.IV-10.V).

Shoots were formed from axillary buds of annual shoots and a root collar. With a high mowing (15-17 cm from the root collar), regardless of the frequency and timing of mowing the shoots, it turned out to be noticeably more in all 4 species than when mowing at a height of 5-7 cm.

The height and multiplicity of separation of the aboveground part significantly influenced the development of the root system. Two-fold separation of annual shoots per season, even for 2 years, caused a powerful development of lateral roots and contributed to the thickening of the main root, in comparison with one cut (Fig. 1-4). Similar differences were found between the high and low cut options. In addition, the height of mowing influenced the depth of the lateral roots. Below there is a description of the roots of the studied species.

Izen. In the I variant (I mowing at a height of 15-17 cm) with a root base diameter of 1,8 ± 0,2 cm, 56,2 ± 2,3 roots of the II order are developed. In option II (I cut at a height of 5-7 cm) with a root base diameter of 1,5 ± 0,2 cm, 22,5 ± 1,5 lateral roots were formed (Table 1, Figure-1). In the first case, the bulk of them developed to a depth of 60,1 ± 2,5 cm, in the second, up to 40,3 ± 1,8 cm.

Table 1

Indicators of an increase in the mass of the root system of the double cutting

Cutting height, cm	Variants	Rootbasediameter, cm	Number of roots of the II order, pieces	Root depth, cm.	Development of the bulk of lateral roots, cm
I-cutting during the growing season at a height of 15-17 cm	I	1.8±0.2	56.2±2.3	155.0±2.1	60.1±2.5
II-cutting during the growing season at a height of 5-7 cm	II	1.5±0.2	22.5±1.5	150.1±2.0	40.3±1.8
III-cutting during the growing season at a height of 15-17 cm	III	3.9±0.4	90.4±3.9	152.2±2.2	60.8±2.5
IV-cutting during the growing season at a height of 5-7 cm	IV	2.6±0.3	29.2±1.9	147.5±2.1	50.4±2.2

The depth of root penetration into the soil in varianti is 155.0 ± 2.0 cm, in the II -150.1 ± 2.0 cm.With two cuttings at a height of 15-17 cm, the root base diameter is 3,9 ± 0,4 cm, the penetration depth is 152,2 ± 2,2 cm, at a height of 5-7 cm, the diameter is 2,6 ± 0,3 cm, depth of root penetration is 147,5 ± 2,1 cm.The number of roots II is about 90,4 ± 3,9 (at a depth of up to 60.8 ± 2,5 cm) and 29,2 ± 1,9 (at a depth of 50,4 ± 2,2 cm). Most of them departed from the main root at a depth of 5-25 cm (high cut) and 5-7 (low cut). The roots branched to III order and formed ephemeral roots. The appearance of ephemeral roots coincided with the beginning of shoot formation.

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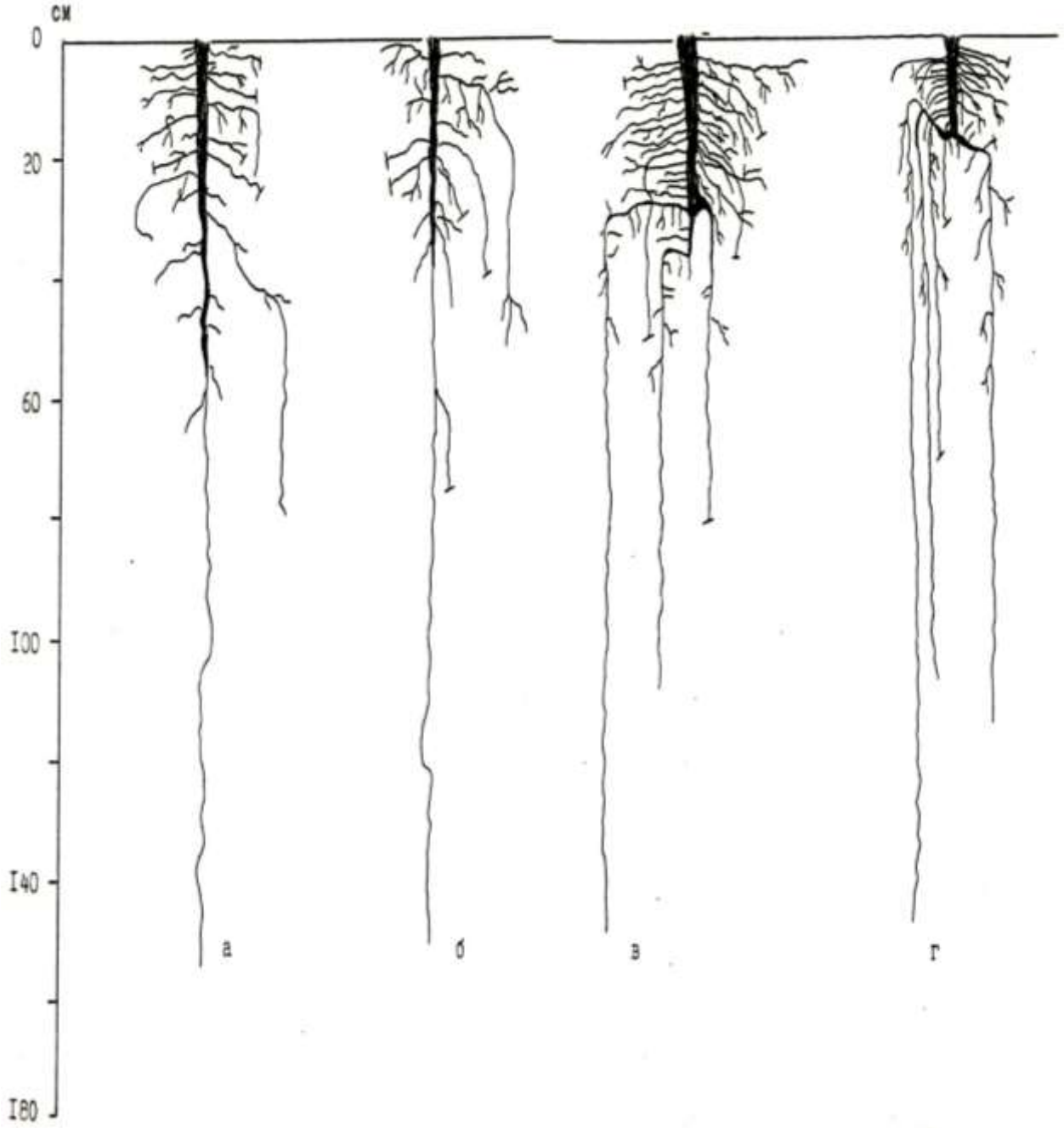

Figure 1.Izen root system for 6 years of vegetation (3 years of experience)
a-one cutting during the growing season at a height of 15-17 cm (I-variant)
b-one cutting during the growing season at a height of 5-7 cm (II-variant)
c-two cuttings per growing season at a height of 15-17 cm (III-variant)
d-twocuttings per growing season at a height of 5-7 cm (IV-variant)

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Keyreuk - root base diameter in variants I-II 2,5 ± 0,3 and 2,1 ± 0.2 cm.The main roots deepened into the soil to 175,1 ± 3,8 and 170,1 ± 3,5 cm, respectively. In variant I, lateral roots developed in the horizon 10,1 ± 0,8-40,2 ± 1,3 cm, in variant II 12,5 ± 1,1-30,4 ± 1,3 cm. In variant I, from the main 6 lateral roots with a diameter of 4 mm, 6 with a diameter of 2-2.6 and 30 -1-1,5 mm (42,3 ± 1,8 in total) departed from the root. The greatest number of them in the horizon is 20-30 cm. A mass of ephemeral roots is concentrated at the same depth. A significant number of roots of the following order departed from all lateral roots.In variant II there are 7 lateral roots with a diameter of 2,5-3 mm and 15 with a diameter of up to I mm (total 22,2 ± 1,8). From the large lateral roots, the roots of the following orders departed. The number of III-order roots and ephemeral roots in this variant is insignificant. In variants III-VI, the diameter of the base of the main roots is 3,3 ± 0.4 and 2,5 ± 0,2 cm, respectively. They reached a depth of 168,7 ± 3,5 and 171,2 ± 3,7 cm. Large branches extend from them at a depth of 40 and 45 cm. In variant III, 3 large lateral roots with a diameter of 4-5 mm, 14-1,5-2 mm and 45 small roots with a diameter of up to 1-1,2 mm (62,8± 2.1) in total departed from the main root (Table 2.).

Table2.

Indicators of an increase in the mass of the root system of keyreuk at double mowing

Cutting height, cm	Variants	Rootbasediameter, cm	Number of roots of the II order, pieces	Root depth, cm	Development of the bulk of lateral roots, cm
I-cutting during the growing season at a height of 15-17 cm	I	2.5±0.3	42.3±1.8	175.1±3.8	40.2±1.3
II-cutting during the growing season at a height of 5-7 cm	II	2.1±0.2	22.2±1.8	170.1±3.5	30.4±1.3
III-cutting during the growing season at a height of 15-17 cm	III	3.3±0.4	62.8±2.1	168.7±3.5	40.5±1.4
IV-cutting during the growing season at a height of 5-7 cm	IV	2.5±0.2	32.6±1.9	171.2±3.7	45.3±1.6

Roots of the following order departed from the large and medium lateral roots. At a depth of 20-30 cm, the mass of ephemeral roots, in contrast to variant IV, in variant III, lateral roots of the next order developed at a depth of up to 60 cm (Figure-2). In the IV variant, only 32,6 ± 1,9 lateral roots extended from the main root: 6 with a diameter of 2-3,5 mm, 7-1,5-1,7 mm and 19 with a diameter of up to 1 mm. The lateral roots of the next order and ephemeral roots in this variant were significantly less than in variant III, but more than in variant I (control).

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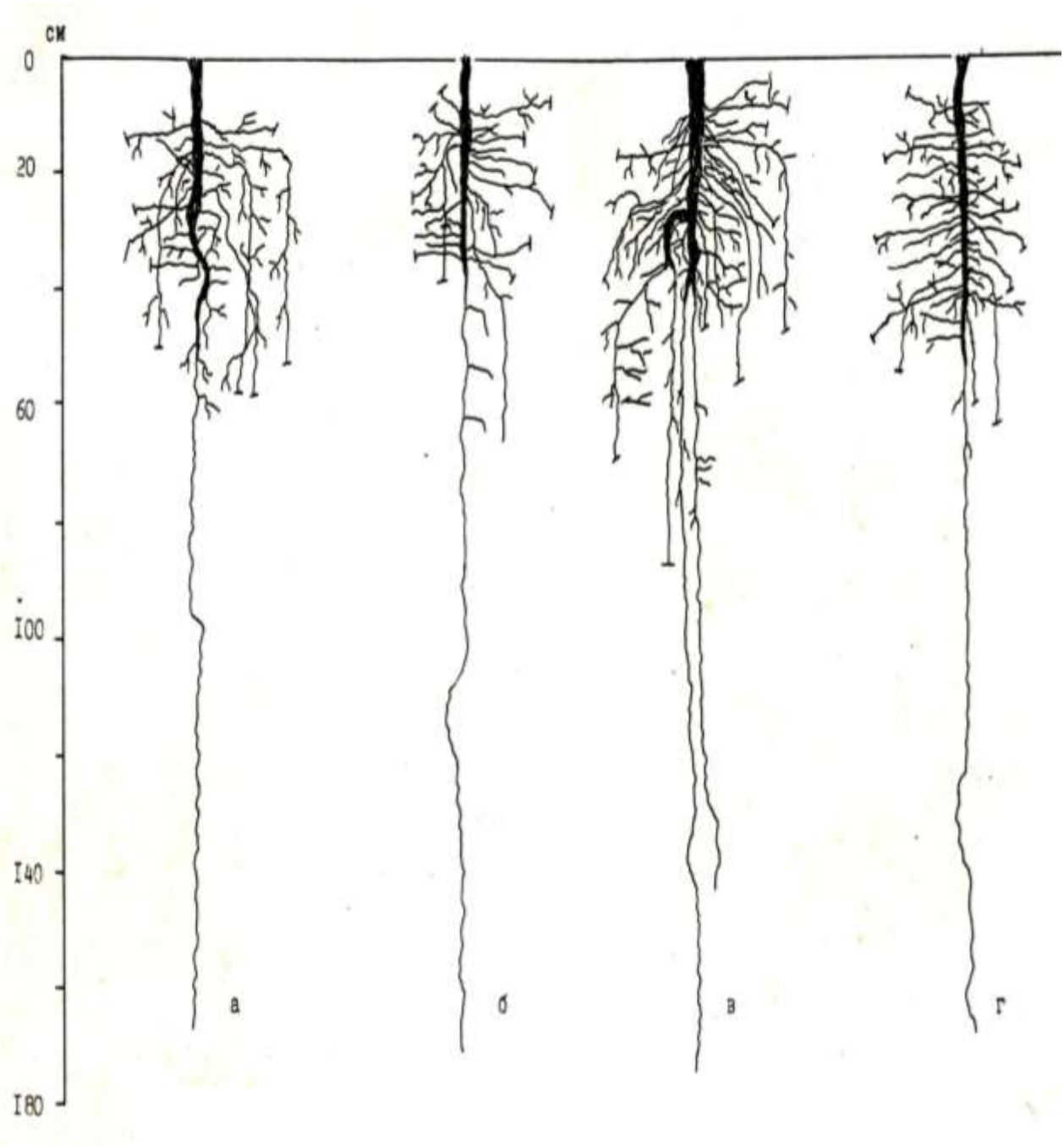

Figure-2.Keyreuk root system for 6 years of vegetation (3 years of experience, April)
a-one cutting during the growing season at a height of 15-17 cm (I-variant)
b-one cutting during the growing season at a height of 5-7 cm (II-variant)
c-twocuttings per growing season at a height of 15-17 cm (III-variant)
d-twocuttings per growing season at a height of 5-7 cm (IV-variant)

Chogon. In variants with two mows during the growing season (III-IV variants), more powerful roots were formed (Figure-3). In the first two variants, (mowed once), the roots were thinner than in variants III-IV, mowed twice. The root base diameter is 2,7 ± 0,6 and 2,2 ± 0,5 cm, the depth of their penetration into the soil is 173,0 ± 2,8 and 175.1 ± 2,5 cm, respectively. In variantI, 12,2 ± 2,0 rather well-developed lateral roots (8 with a thickness of 2-5 mm, 4-with a thickness of 1-1.7 mm) and many small ones, in the variant II 7,3 ± 1,5 (5 with a thickness of 2,5 -3 mm, 2 -1,5-1,7 mm). Small roots in this variant are insignificant. From the lateral, larger roots, small roots of the following order departed. But in variantII there were much fewer of them than in variantI. The same differences are noted for ephemeral roots. In variants III-IV, the diameter of the base of the main roots is 3,0 ± 0.9 and 2,5 ± 0,5 cm.The main root is well expressed to a depth of 20,1 ± 1,6-27,3 ± 1,9 cm. and lateral roots in some places develop

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in a horizontal direction (this was typical for I-II variants). In deeper layers, the main root differs little in thickness from the lateral larger roots.The depth of penetration of the main roots into the soil is 175,0 ± 2,5-177,3 ± 2,7 cm, respectively(Table 3).

Table 3.
Indicators of increase in the mass of the root system of chogon at doublecutting

Cutting height, cm	Variants	Rootbasediameter, cm	Number of roots of the II order, pieces	Root depth, cm.	Development of the bulk of lateral roots, cm
I-cutting during the growing season at a height of 15-17 cm	I	2.7±0.6	12.2±2.0	173.0±2.8	20.0±1.5
II-cutting during the growing season at a height of 5-7 cm	II	2.2±0.5	7.3±1.5	175.1±2.5	26.2±1.8
III-cutting during the growing season at a height of 15-17 cm	III	3.0±0.9	15.0±2.1	175.0±2.5	20.1±1.6
IV-cutting during the growing season at a height of 5-7 cm	IV	2.5±0.5	9.3±1.8	177.3±2.7	27.3±1.9

The lateral roots are more developed than in the previous variants. Much more roots of the next order (with a diameter of up to 1,5-2 mm) depart from them, compared with variants I-II. In variantIII of large lateral roots 15,0 ± 2,1 (9 pieces with a diameter of 2-7 mm, 6 to 1,5 mm), in the IV-variant there are only 9,3 ± 1,8 (6 pieces with a diameter 2-5 mm, 3 to 1-1,5 mm). There were more ephemeral roots (as thick as a human hair) in variant II, in the IV onetheyjust started to appear. At a depth of 12-26 cm with a high separation and 10-15 cm with a low separation, the dead ephemeral roots of the previous year (up to 1 mm thick) were preserved (Figure-3).

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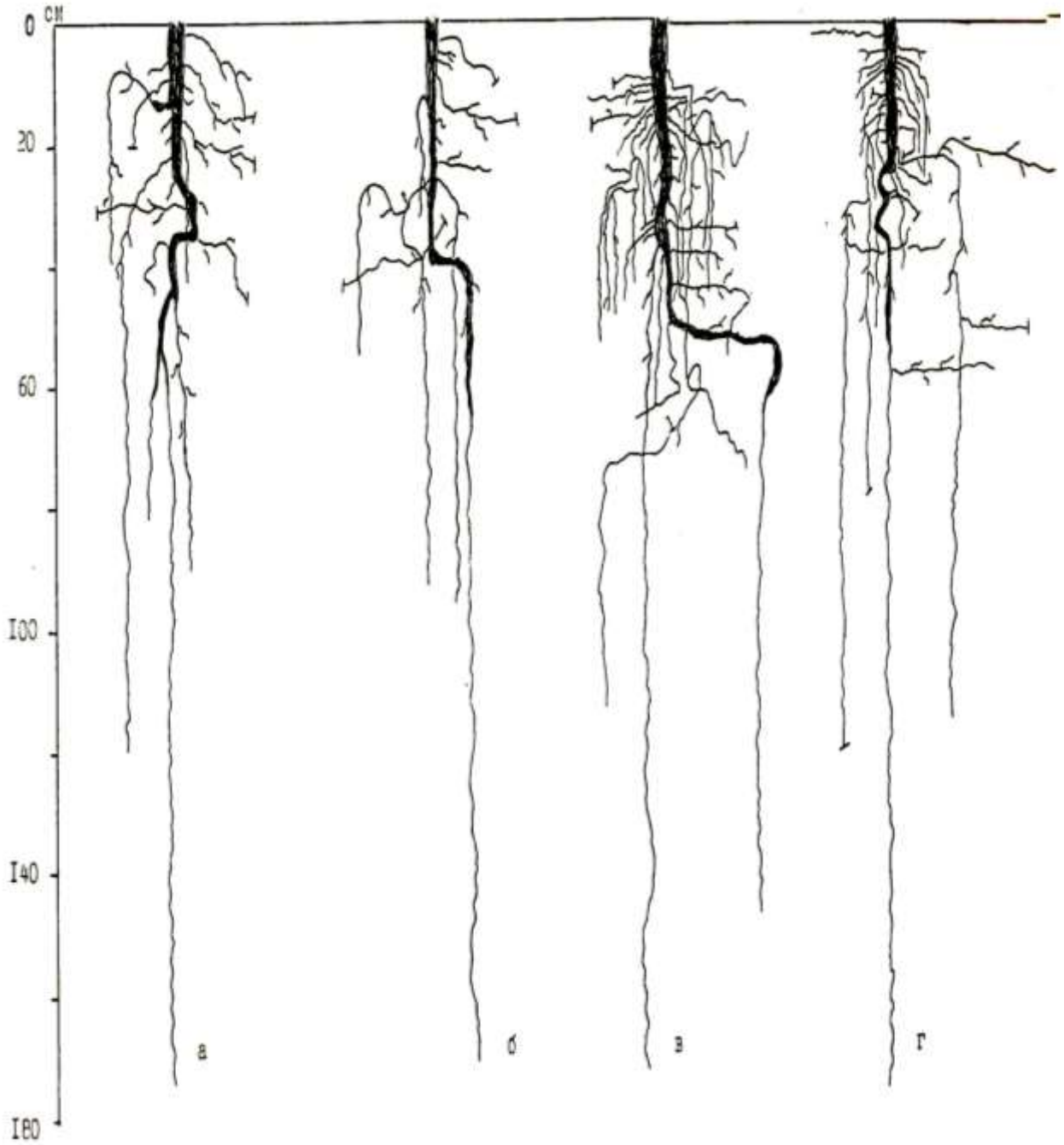

Figure-3.Chogon root system for 6 years of vegetation (3 years of experience, April)
a-one cutting during the growing season at a height of 15-17 cm (I-variant)
b-one cutting during the growing season at a height of 5-7 cm (II-variant)
c-two cuttings per growing season at a height of 15-17 cm (III-variant)
d-twocuttings per growing season at a height of 5-7 cm (IV-variant)

Teresken. The diameter of the root base with one cutting at a height of 15-17 cm (I variant) – 2,0 ± 0,9 cm, at a height of 5-7 cm (II variant) -1.2 ± 0,6 cm (Figure4). The depth of root penetration into the soil is 175,0 ± 3,0-185,1 ± 3,1 cm, respectively; in the I-variant, 26,2 ± 2,0 roots of the second order extended from the main root (their diameter is 1,5-4 mm), in the second version 17,3 ± 1.5, (diameter 1-2 mm). Roots of the III-IV orders departed from large roots of the II order. The bulk of lateral roots developed in variant I to a depth of 50,0 ± 2,5 cm, in variant II - up to 40,2 ± 1,9 cm (Table 4).With two mows at a height of 15-17 cm, the root base diameter is 2,5 ± 0,8 cm, at a height of 5-7 cm diameter 1,8 ± 0,8 cm.The depth of root penetration is 175,0 ± 2,9-185,3 ± 3,3 cm (Figure-4.).The number of roots II is about 32,0 ± 2,1 (up to a depth of 65,1 ± 2.6 cm) and 23,3 ± 1,8 (at a depth of up to 55,3 ± 2,2 cm).

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From the roots of the II order departedroots of subsequent orders and ephemeral roots. The appearance of ephemeral roots, as in the previous species, coincided with the beginning of shoot formation

Table 4
Indicators of the increase in the mass of the teresken root system at doublecutting

Cutting height, cm	Variants	Rootbasediameter, cm	Number of roots of the II order, pieces	Root depth, cm.	Development of the bulk of lateral roots, cm
I-cutting during the growing season at a height of 15-17 cm	I	2.0±0.9	26.2±2.0	175.0±3.0	50.0±2.5
II-cutting during the growing season at a height of 5-7 cm	II	1.2±0.6	17.3±1.5	185.1±3.1	40.2±1.9
III-cutting during the growing season at a height of 15-17 cm	III	2.5±0.8	32.0±2.1	175.0±2.9	65.1±2.6
IV-cutting during the growing season at a height of 5-7 cm	IV	1.8±0.8	23.3±1.8	185.3±3.3	55.3±2.2

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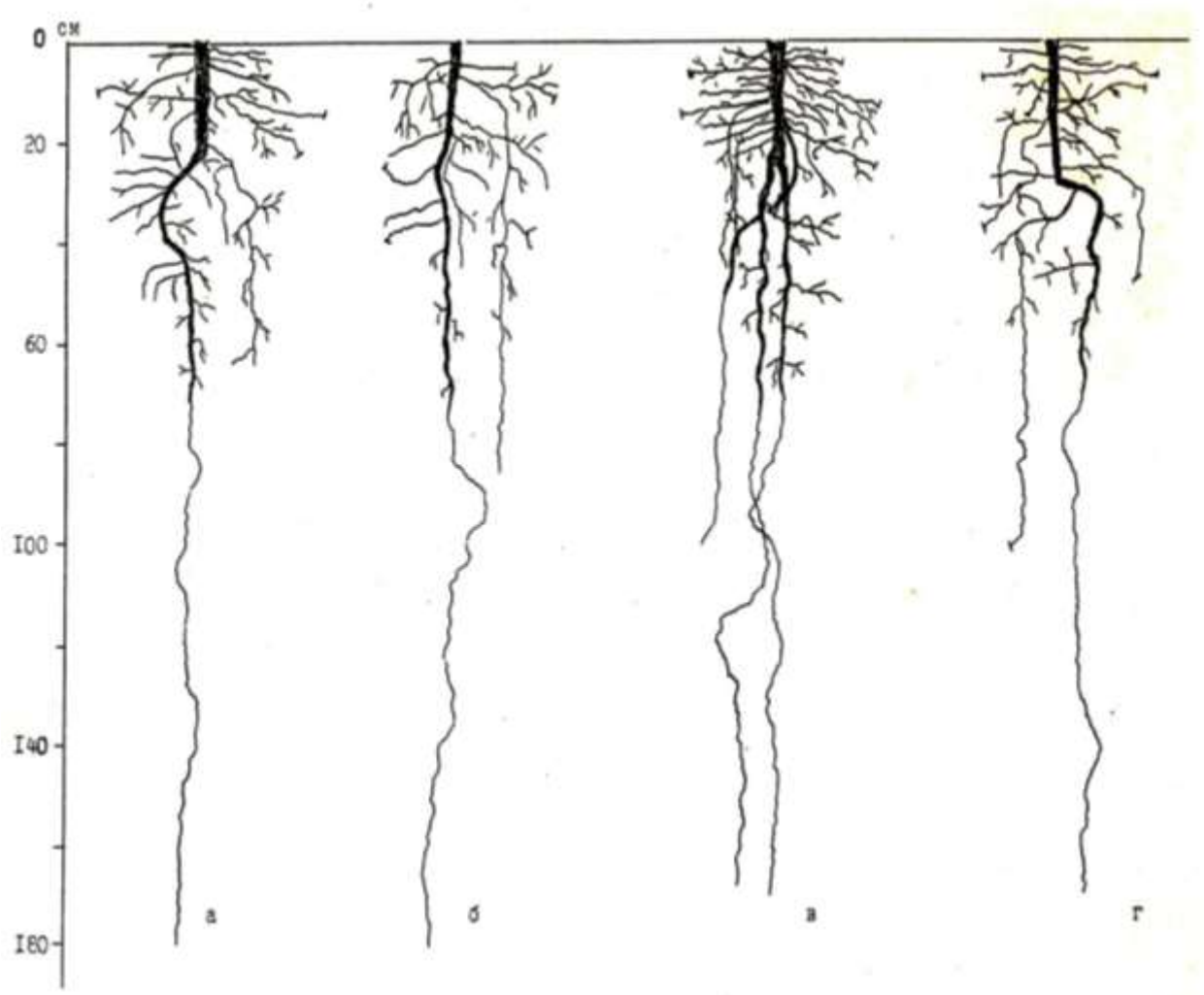

Figure-4.Teresken root system for 6 years of vegetation (3 years of experience, April)

a-one cutting during the growing season at a height of 15-17 cm (I-variant)
b-one cutting during the growing season at a height of 5-7 cm (II-variant)
c-two cuttings per growing season at a height of 15-17 cm (III-variant)
d-twocuttings per growing season at a height of 5-7 cm (IV-variant)

Conclusions. Thus, the formation of the root system of izen, keyreuk, chogon and teresken is influenced not only by the habitat, the way they are placed in the sowing, but also by the method of use (height and frequency of separation of the aboveground part).

The height and frequency of mowing of the aboveground mass affect the number and depth of development of lateral roots, root thickness. At high mowing, due to the formation of a much larger number of shoots, a more powerful root system develops. Mowing twice, causing the formation of additional summer shoots, contributes to the development of a more branched root system.

By adjusting the height of separation, the frequency of mowing, you can control the development of both the aboveground part and the root system of phytomeliorants and purposefully change their productivity.

R e f e r e n c e s :

1. Azimov A.G., Davletshina M.N. // Influence of the density of the plant (Kochia prostrata (L.) Schrad.) on the development of the root system. Uzb, biol.journ. 1991. №2. p-2.
2. Akzhigitova N.I. Features of the structure of the root systems of the main edificators of the Southwestern Kyzyl Kum. Desert development problems. - Ashgabat, Ylm, 1971.- pp.75-82.
3. Alimaev I.I., Tserenpilje S. // Root systems of fodder dwarf shrubs introduced into the culture in the southern part of the Mongolian People's Republic. Probl. expl. deserts. 1984. № 3. P. 27.
4. Arkincheev D.V. Study and evaluation of samples of gray teresken (Eurotia ceratoides L. C.A. Mey.) in order

to create a starting material with increased forage and seed productivity for the semi-desert zone of the Republic of Kalmykia. Diss. …. for the degree of candidate of agricultural sciences. Moscow - Lugovaya 2015.
5. Burygin V.A., Zakirov K.Z., Zaprometova N.S., Pauzner L.Ye. / / Botanical bases of reconstruction of pastures of South Kyzylkum. T.: FAN, 1952 .–p.34.
6. Golovchenko S.G. Study of root systems by the method of moistened wells. -Tashkent. DAN UzSSR. 1959. № 4. - pp. 51-52.
7. Imomov O.N. Bioecological features of forage plants of the Chust - papal adyrs of the Fergana Valley Wschodnioeuropejskie Czasopismo Naukowe (East European Scientific Journal) № 1 (17), 2017.
8. Kazaryan B.O. Aging of higher plants. Moscow: Nauka, 1969. –pp. 30-279.
9. Krenke N.P. // The theory of cyclic aging and rejuvenation of plants and its practical application. Moscow: Selkhozgiz, 1940 .- p165.
10. Larin I.V., Agababyan Sh.N., Rabotnov T.A., Lyubskaya A.F., Larena B.K., Kasimenko M.A. fodder plants of hayfields and pastures in the USSR. Dicotyledonous (chloranta-legumes). M.-L .: state. Publishing house of agricultural literature, 1951. –T.2, – p.948.
11. Momotov I.F., Fayziev K.T. Formation of plant root systems in sand and moisture storage furrows. Artificial ecosystems for pasture purposes in the South-West Kyzyl Kum. Tashkent: Fan, 1978, p.246.
12. Flora of the USSR. M.-L., 1961.T.26. P. 939.
13. Flora of the Uzbek SSR. Tashkent. 1953. T.2. pp.283-284.
14. Shamsutdinov Z.Sh. Shirinskaya V.N. Field germination of seeds of wild-growing forage plants and ways to increase it. Introduction to the culture of forage plants for the improvement of semi-desert and desert pastures. M., 1969.- pp. 117-123.
15. Shamsutdinov Z.Sh. Principles and methods of biological reclamation of degraded lands / In the book: Soil resources of the Caspian region and their rational use in modern socio-economic conditions. Astrakhan, 1994. pp. 32-34.
16. Shalyt M.S. Methods for studying the morphology and ecology of the underground part of individual plants and plant communities. Field geobotany. M.: Publishing house of the Academy of Sciences of the USSR, 1960. – T.2. – pp. 369-473.