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THE RESULTS OF THE EXPERIMENT ON THE DIVERSIFICATION AND COMPOSTING OF DECIDUOUS CONIFEROUS TREES ON NEIGHBORING HOMOGENEOUS SOILS OF THE PRODUCTION BASE IN THE VILLAGE OF BEYNETKESH TOLEBIYSKY DISTRICT OF TURKESTAN REGION AND THE VILLAGE OF KYZYL TU OTYRAR DISTRICT OF TURKESTAN REGION OF THE REPUBLIC OF KAZAKHSTAN

Abstract: *On steppe automorphic soils, the height of oak and ash in ripe and ripe broadband plantings is determined mainly by the annual precipitation rate (g2 = 60-70%), the thickness of the humus horizon and the granulometric composition of the soil. Thickening of the humus layer from 0.3 to 0.7 m increases it by 20%. The weighting of the composition in the light-medium loam range somewhat reduces the forest suitability of the soil, especially in the most arid areas. F. reacts more strongly to this . ¡Apsvosha. It seems to be less demanding on soil fertility, but more sensitive than oak to a decrease in the efficiency of summer precipitation, a shortage of soil moisture. When studying the state of plantings of "industrial oak forests" created on heavy lightly saline soils of the plains of the south of the Volga Upland, the spurs of the Western Ergeni and the Salo-Manych ridge with a precipitation rate of 350400 mm/year, it was found that small oak massifs also disintegrate after 40-60 (65) years. On elevated ecotopes - with an average height of 7-11 m, a diameter of 14-16 cm and a stock of stem wood of 50-60 m3 /ha, in depressions respectively - 14-20 m, 20-24 cm, 150190 m3 /ha and more. The main reason is the decrease in moisture supply caused by the growing demand of oak, related species and undergrowth for moisture, or - illumination and blackness of the soil. The oak stand dies faster with the strong development of turf grasses (in clean plantings with wide aisles after the cessation of soil care), somewhat slower - undergrowth and related species. When cutting weakened plantings in 30-35 years without subsequent agrotechnical and forestry care, the longevity of the vegetative generation of oak does not exceed 2530 years.*

Key words: *forest, plantings, forest planting, invitro, fertilizers, tourism, forestry, coniferous, deciduous, shrubs, ecology, herbs, flowers, humus, Beynetkesh.*

Language: *English*

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Introduction

Prerequisites for the study of this topic.

The development of scientific and applied fundamentals of steppe afforestation consisted in finding a balance between garden and forest principles of creating plantings, due to the desire to reduce the cost of forest-cultural activities and maintain high rates of work. The departure from the garden principle, which was expensive, but ensured the formation of relatively stable stands [4], consisted in a significant reduction in the methods of basic tillage, the number and duration of agrotechnical care, as a means of cleaning the soil from weeds and accumulating soil moisture, as well as in increasing the density of crops, using a relatively small (1-3-year-old) planting material, the creation of almost exclusively mixed plantings with an increased proportion of related species and a multi-stage system of forestry care. So, if V. E. Graff performed four-fold plowing and kept the soil in black steam for two years, and took care of crops with an average density of about 2000 trees/ha for 11 years, carrying out 34-35 weeding of the soil during this period, then L. G. Bark, a supporter of the idea of using natural forces of forest formation - only single (in May and September) plowing, annual fallowing and 24 weeding of weeds in ordinary crops with a density of 13.1 thousand trees/ha. F. F. Tikhonov, the author of the Don and normal types of crops, limited himself to a single plowing at the end of summer, autumn harrowing and 9-11 weeding, bringing the planting density of 2-3-year-old seedlings to 15.9 thousand /ha and reducing the cost of work by more than 10 times compared to the technology of V.E. Graff. However, along with this, the stability of plantings has also significantly decreased. Neither pre-afforestation. the transfer of areas for field cultivation, nor a decrease in the proportion of related breeds (in the normal type of crops) and differentiated forestry care did not lead to the expected result. In young closed plantings, the main species (oak and ash Fraxinus excelsior L.) were "drowned out" and dropped out, and the elm trees turned out to be extremely short-lived.

Scientific background of the study

The scientific groundwork for the development of this study was started five years ago in 2015, where Shalkharov E.S., Nartai.A.N., Shalkharov Zh.E., Shalkharova S.E., Shalkharova A.E. and Shalkharova T.E. for the first time proposed issues of legal administration in the issues of forcing forest design, where biological, botanical, zoological entomological and agronomic specialties, together with agricultural specialties, would have been clearly designed using legal techniques, for which it was originally started as a legal project. However, due to the versatility of the present, other specialties were involved in the program, including practical specialists. In addition, the idea of research was influenced by natural factors, under which the number of trees in this area began to decrease, as a result of which fresh grass began to be burned by solar activity, which led to the beginning of an arid climate in this area.

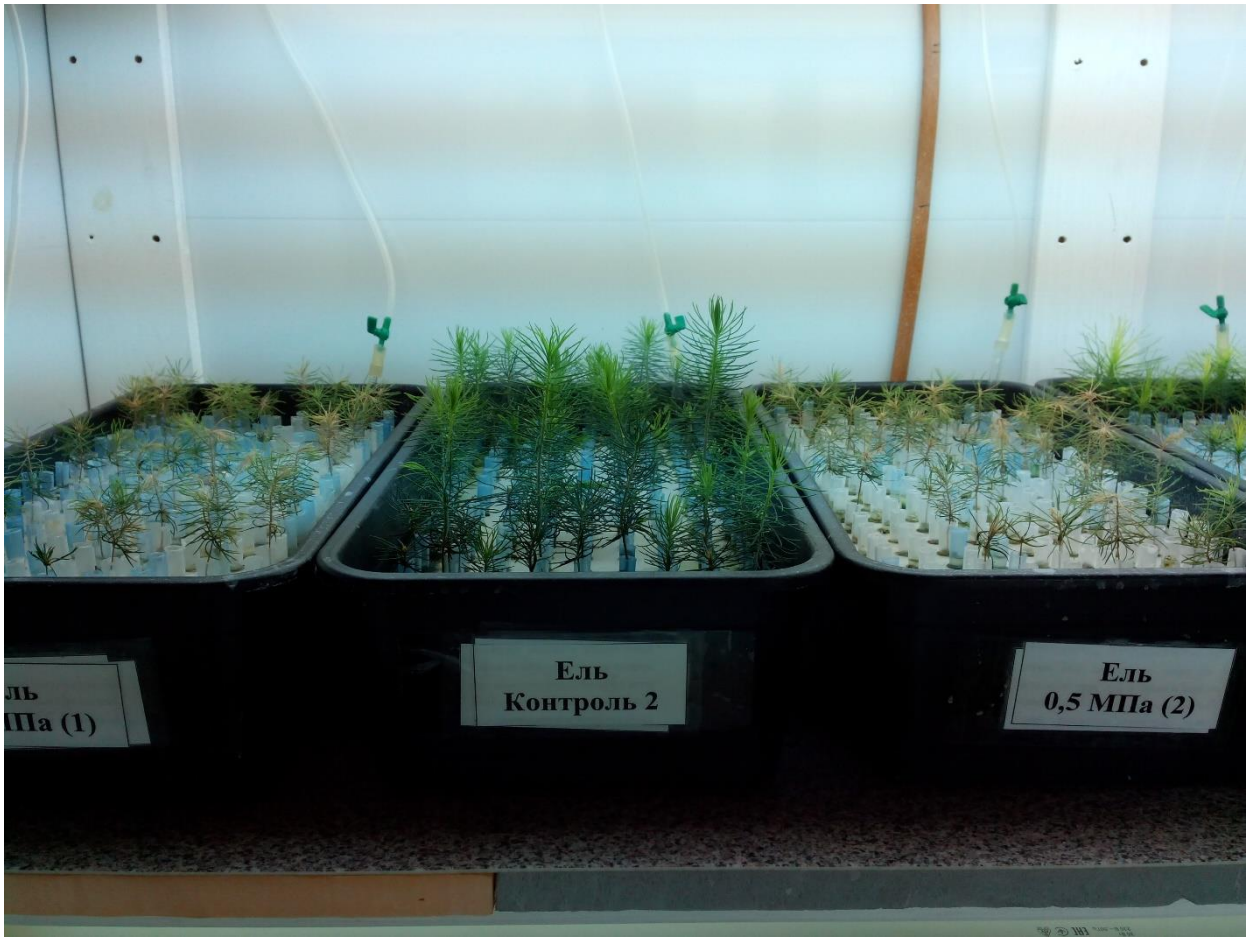
Picture 1. Planing the laboratory.

The novelty of the study.

Failures in the use of the normal type and other methods of steppe afforestation prompted the testing, mainly of different types of mixing of breeds and schemes of seating. The ideas of creating tree-shrub crops (G. N. Vysotsky) and tree-shade type (N. Ya. Dakhnov), placing rocks in groups (Yu. G. Lehman), cultivating oak in strips with subsequent planting of its satellites (F. K. Arnold), the purpose of which was to prevent the "drowning" of oak by "podgon", found application [1, 5, 6]. Noting the propensity of pure oak crops to rapid clarification, the attack of harmful insects, the possibility of their use as a form of low-trunk farming was also discussed on soils of questionable forest suitability [3]. Unfortunately, the successful pure oak cultures that took place during this period did not find proper explanation and distribution. Summing up the approximately 65-year period of work, during which 10.6 thousand hectares of forest plantations were created only in the southern steppes of Russia, in 1908 the congress of figures of steppe afforestation was able to draw only some preliminary and very cautious conclusions. It was assumed that the age of natural ripeness in steppe plantations occurs in 20-30 years, in the best conditions - 40 years. In this regard, without touching on the economic foundations of future forest management, a system of economy with a low turnover of logging, focused on obtaining a full-fledged growth generation, was recommended. Caregiving in plantings was proposed to be conducted in this way, so that by the age of the renewable felling, a moderately dense stand with a predominance of the main breed remains, and in the future, create complex plantings of tree-shrub and tree-shade types of mixing of moderate density with a felling turnover of 15-30

years. The Congress spoke in favor of continuing to study the conditions for the growth of plantations and natural forests in the steppe, without knowledge of which it considered it impractical to continue planting forests on a large scale.

Picture 2. The first graves in ultra.



Compliance with the state national program.

However, the decline and consolidation of agricultural production in the post-revolutionary period caused the need for a sharp expansion of forest reclamation works and scientific research in the field of protective afforestation. Particular attention was paid to the study of forest suitability, methods of agricultural tillage, biology of tree species, types of mixing and placement schemes of oak satellites, as well as the water regime of plantings and moisture availability of the main breed. The necessity was finally substantiated and the differentiation of forest suitability (agroforestry zoning) of the territory of the forest-steppe and steppe zones of the country was carried out, as well as the expediency of developing agrotechnical and forest-cultural techniques adapted to the specifics of soil and climatic conditions of the area, careful selection of breeds in order to reduce the tension of competitive relations in mixed plantings. The opinion has been established in science and has been implemented in wide practice that multi-row protective forest strips of mixed species composition with shrubs should be created, since stable plantings in the steppe should have "forest properties, i.e. the ability to form and preserve the forest environment. The post-war period is characterized by a significant expansion of the geography, spectrum and volume of forest reclamation works, caused by the need for rapid rethe formation and acceleration of the development of agriculture in the country, the next severe droughts and provided for by a number of state regulations. Once again, there was increased attention to the use of oak in the creation of both massive and strip plantings on zonal soil complexes. Extensive studies have been carried out on the methods of their processing and sowing acorns on the forest area, the possibility of growing oak crops with thickened biogroups without admixture of accompanying rocks has been established. On the contrary, interest has decreased and opposite opinions have appeared about the expediency of introducing shrubs into planting, creating protective plantings as forest ecosystems. Low-order forest strips with increased permeability of the windbreak profile have received scientific

justification and spread, which, as expected, turned out to be less durable than highly closed plantings.

The impact of research on the development of technology.

A valuable contribution to the development of knowledge was made by the study of plantings on chestnut soils of dry steppe and semi-desert. It was found that when afforesting the lands of arid regions, two ways should be followed: to choose the most forest-suitable areas (various kinds of depressions provided with additional moisture) or to change the properties of surface sediments by agrotechnical techniques. A positive effect on the safety (durability) of the main breed is provided by moisture-accumulating tillage, moisture stores, expansion of row spacing, timely removal of rows of shrubs and other measures to increase the moisture supply of the stand.

Picture 3. Graves in gumus recombinant without ultra.

Expected social, economic and environmental impact.

In different conditions and at many sites, it has been proved that an important feature of oak growth is the slow development of horizontal roots in the first years of its life and the development of the upper horizons of the soil, in which the bulk of the moisture of precipitation accumulates. This explains the rapid "silencing" of oak by satellites, including shrubs, and limits their use to slightly aggressive species (Malus sylvestris (L.) Mill., Pyrus communis L., Lonicera tatarica L., Ribes aureum Pursh, etc.). Even in the protective forest strips on the southern chernozem, a very short period of rapid oak growth (from 45 to 7-8 years) was noted, a sharp slowdown in the differentiation of the stand and it was considered advisable to "store" moisture in deep layers during basic tillage, leaving wide (4-5 m) row spacing. On the dark chestnut soils of the Salsk steppe (Lower Prindestrovie), an advantage in stability, growth and productivity of pure oak crops over mixed with other tree and shrub species was revealed. Plakory is proposed to be covered by the hollow-potyazhin method: 30-40% of the area - the dry land links of the hydrographic network - should be allocated to the forest, the rest should be left under meadow-steppe vegetation. And also apply 1-2-year-old fallowing of the soil; build dams with a height of 1.0-1.5 m on the runoff path and create pure oak crops with a density of 8-10 thousand /ha; in mixed wood-shrub type crops, occupy 6-8 thousand/ha of seats with oak.

The fundamental difference of the idea from the existing analogues.

The complex expedition of the Moscow State University, studying the causes of the collapse of 12-17-year-old plantations of the Kamyshin-Volgograd state protective forest strip, also recognized the unfavorable properties of climate and soil for forest growth in the southern steppe. However, she noted that they appear only in particularly dry years and can be significantly weakened or eliminated by agrotechnical techniques. With the exception of highly saline differences and saline soils, the quality of zonal chestnut soil types does not hinder the development of plantings. The differences in their growth and condition under the same conditions are caused by the difference in the agrotechnics of the main processing and the soil content in the crops. Biocenotic features of plantings play a subordinate role. The main reason for their early death is a lack of moisture. Entomovrediteli attack the weakened tree stand and accelerate its death. .

Picture 4. Union graves with ultra and recombinants

The final result of the study.

In the post-war period, practical work and scientific research on afforestation of the sands of the steppe zone were also greatly developed. Numerous classifications of forest suitability, methods, techniques and means of mechanization of their processing, creation of pine crops, increasing the durability of stands have been developed. A water balance concept of afforestation is proposed. The water-salt regimes of semi-desert and desert arenas, their dynamics under the influence of forest plantations have been studied. The possibility of large-scale afforestation of low-moisture sands of the arid zone is substantiated.

Hypotheses: primary hypothesis, secondary hypothesis and tertiary hypothesis.

To verify the results of these studies, the authors have proposed some hypotheses.

The primary hypothesis.

In accordance with the primary hypothesis, it can be indicated that the planting of coniferous-deciduous forest on the territory of the Beynetkesh settlement of the Pervomaisky district of the Tolebiysky district of the Turkestan region of the Republic of Kazakhstan with its further transformation into a national natural park will positively affect the ecological situation in the region

Secondary hypothesis.

In accordance with the secondary hypothesis, it can be indicated that the planting of coniferous-

deciduous forest on the territory of the Beynetkesh settlement of the Pervomaisky district of the Tolebiysky district of the Turkestan region of the Republic of Kazakhstan with its further transformation into a national natural park will positively affect the economic situation in the region.

The tertiary hypothesis.

In accordance with the tertiary hypothesis, it can be indicated that the planting of coniferous-deciduous forest on the territory of the Beynetkesh settlement of the Pervomaisky district of the Tolebiysky district of the Turkestan region of the Republic of Kazakhstan with its further transformation into a national natural park will positively affect the social situation in the region.

The degree of interconnectedness of hypotheses with research design.

The design of research is supposed to be qualitative with elements of cohort techniques. The present involves a sample of about 5,000 respondents to indicate the will of citizens regarding which of the selected three components is the most acceptable.

LITERATURE REVIEW

Along with solving specific tasks of scientific support of afforestation, for about a century and a half, the search for an answer to the question of the main cause of the treelessness of the "steppe plains". as the theoretical basis of steppe afforestation continued. The climate hypothesis formulated by G. N. Vysotsky has received the greatest recognition. Studies in European countries, where the problems of afforestation and artificial reforestation are also quite acute, have led to similar conclusions on a number of fundamental positions. Thus, W. Maciaszek [39], studying the causes of the drying of oak forests in southeastern Poland, found that under the drying oak stands the soil is significantly smaller (on average by 27 cm), more polluted, or contains significantly more clay, and physiologically drier. M. RoNtas, having examined the oak stands of various ages on a large area (Osijek district in Croatia), I came to the conclusion that the planting of 1-2-year-old seedlings is more effective than sowing. And when you rise. On the contrary, the advantage is recognized for nesting oak crops in the renewal of wind areas in the forests of Stuttgart. Based on the data of complex studies (dry mass of shoots, leaf surface, relative increase in diameter, nitrogen concentration in leaves, etc.) M. Löf convincingly proved the harmful effect of herbaceous vegetation on the growth of young oaks. J. Ceitel, J. Szmyt believe that in the conditions of Poland, the area of the initial planting place in oak cultures should not exceed 1.5 m2, which is consistent with the opinion of researchers from Croatia S. Matic, M. Orsanic, I. Anic. According to their data, for the formation of stands of the best quality, the optimal sowing density should be from 10 to 20 thousand plants per 1 ha, but already at the age of 22, the best growth rates were noted in pure oak crops with a density of about 9 thousand/ha (1.4 x 0.8 m) compared with thicker ones (14-24 thousand/haha). R. Mosandl in pure oak crops in different habitats (Germany), up to the age of 20, recommends cleaning by the grassroots method (cutting down mostly dying trees). And later, every 10 years, select target trees and cut down 1-2 of the strongest competitors around them. Thus, acquired and, to a large extent, accumulated in forest-cultural principles ("accumulation, conservation and economical use of moisture"; "the tougher, the simpler") knowledge can significantly increase the durability of artificial plantings in the arid zone. These principles, however, have not been implemented in strictly justified technological regimes for the creation and cultivation of both massive and strip plantings and have not received a complete scientific formalization. In recent decades, due to the almost complete cessation of forestry this knowledge is gradually being lost - washed out of the specialized literature, the consciousness of scientists and specialists. In particular, we have not received an exhaustive quantitative justification of the concept of "treeless steppe plains", an assessment of the forest suitability of land. The reason for the onset of the "critical age" - the mass death of full-fledged plantings in 15-40 years - has not been definitively explained; no consensus has been found in assessing the value of differentiation, admixture of shrubs and pure crops to increase the drought resistance of the stand. The formula of optimal mixing of breeds in oak cultures has not been revealed, etc. Views on the density of planting, the effectiveness of logging care in pine saplings, the creation of mixed crops, etc. remain in a state of discussion, that is, neither theoretical nor practical justification of the optimal ratio between gardening and forestry techniques for afforestation of arid zone lands has not yet been completed. The purpose of the study is to develop scientific foundations and proposals for the technology of creating sustainable broadband and massive forest plantations on complex zonal soils with a high deficit of atmospheric humidification of the territory. Objects, materials and methods. The main object of theoretical and experimental research was the water regime of pine monocultures - based on numerical and physical models of plantings in the conditions of the south of the Eastern European (Russian) plain. In addition, the growth and current state of deciduous plantations of state protective forest strips (GZLP), "industrial oak forests" in the lower reaches of the Volga and Don are considered - on temporary test areas using generally accepted methods using systematic data analysis. Results and discussion. It was established on models of pine stands that the main reason for the treelessness of steppe plains, the fragility of artificial plantings is the excessive

dynamism of atmospheric moisture over the years, a critical decrease in the reserve of soil moisture and moisture availability of the stand in dry years. In the conditions of a continental climate, the dynamism of moistening the root-inhabited layer (CS) by atmospheric precipitation is inversely proportional to their annual rate and the direct moisture capacity of this layer, and the instability of the moisture supply of plantings is directly proportional to their need for soil moisture and the dynamism of atmospheric moistening. Thus, the ratio of the minimum to maximum value (stability) of the annual atmospheric moisture flow into the rhizosphere of pine crops decreases from 75-70% on the sands of the northern forest-steppe to 31-25% on medium sandy loams - loams of the dry steppe. It is practically a function of the zone, only 4-15% is determined by the granulometric composition of the CS and does not depend on the vegetation cover. From 25-30% to 48-59% in the same direction, moisture reserves increase for the accumulation of excess weight of needles in young trees that are not provided in droughts. The stability of the moisture supply of young plants (the ratio of the possible supply of soil moisture to the actual need of a closed plantation) in the given range of conditions is reduced by 5-6 times. It is 26.6% due to the zone, 27.5% due to the nature of the soil and 44.5% due to the stock of leaves (needles). It must be assumed that for this reason, with the increasing aridity of the territory, forest ecosystems are shifting to less moisture-intensive and poor soils, increasing the density of stands and reducing their habitus, and, finally, changing plant formations. The forest suitability of land should be understood as the ability of the soil to in the specific conditions of humidification and evaporation, to satisfy the need of the stand for water and mineral nutrition during its rapid growth in the closed state of the canopy, that is, during the maximum of its moisture demand at the maximum of unproductive evaporation. During this period, the death of young plantings of fast-growing rocks occurs or is most likely in dry years when the buffer reserve of soil moisture is exhausted.

RESEARCH METHODOLOGY

As a formulation of the clarity of the scientific research question, it is possible to identify the question according to which the interdisciplinary norms of rational monitoring of green technologies through applied forest design will positively affect the environmental, economic and social situation in the region. This formulation clearly reflects the purpose, question, assumptions and hypotheses of the research plan, justifying their degree of scientific character systematically and systematically. To answer this question, an attempt was made to substantiate the present with the help of three hypotheses, the realism of which is associated with the purpose and expected results of the research plan. The primary hypothesis suggests that interdisciplinary norms of rational monitoring of green technologies through applied forest design positively affect the ecological situation in the region, since a large number of deciduous trees emit a sufficiently large amount of oxygen, a large number of coniferous trees, a large number of phytantsites, and mountain air is an excellent aerodynamic tunnel for correct propagation. The secondary hypothesis suggests that interdisciplinary norms of rational monitoring of green technologies through applied forest design positively affect the economic situation in the region, since in the future nearby villages will be able to collect and sell berries such as blackberries, raspberries, blueberries, lingonberries, blueberries, sea buckthorn, as well as nuts, mulberries and pine nuts, not counting the organization of tourist centers and shops where tourists can shop. The tertiary hypothesis suggests that interdisciplinary norms of rational monitoring of green technologies through applied forest design have a positive impact on the social situation in the region, since the present will immediately provide a large number of jobs, organize the infrastructure of service personnel and other favorable changes for the region. To prove the hypotheses, an attempt was made to substantiate them with the help of research strategies and approaches that suggest using descriptive, correlation, and experimental studies in the program, depending on the periodicity of tasks, the sequence of which varies depending on a particular stage of the program implementation. The study has a clear systematic achievement of the set goal through concrete actions for a systematic transition from one task to another. In addition to a certain periodicity, the present also illustrates the compliance of resources, deadlines and the content of the work performed with the goals, objectives, methodology and expected results of the study. As a research strategy, such can be designated by virtue of the use of one methodological tool in one task, the use of other techniques in the second and the use of other techniques in the third task. The research approaches in the study are experimental in nature, where participants try various kinds of methodological tools in accordance with the results obtained. A number of approaches have been developed, indicated in this section, to which sequences will be determined. These approaches in the framework of the research plan include experiments that are completely new and have not been used in such studies before. Due to the urgency of the need for such an experiment, it can be considered quite modern. All experiments are planned with a certain frequency and systematics encoded in a certain algorithm, which justifies the correctness of the planning of experiments for its subsequent statistical data processing.

2) It is also possible to briefly describe the most important experiments that will be carried out around certain deciduous and coniferous trees, shrubs,

flowers and grasses, the adaptation of which will be carried out with their division into specialized groups that will be treated with different types of fertilizers and concentrates. In addition, purchased animals and birds are also subject to experiments, which will adapt to the region gradually. So, the present provides for the work of a specialized specialist who will be engaged in the adaptation of these species to the region. Protection issues will also be assigned to the breed of Carpathian wolves (Czech Vlchak), which is a relative of the modern wolf, but easily tamed by humans and which, on a full stomach, will not only give the appearance of the inhabitants of the local forest, but also protect the local fauna from stray dogs, other wolves, cats and jackals. The experiment will be aimed at as much as possible. Thus, the experiments cover both flora and fauna objects, observations of biometric indicators of which are compared in time progression. These experiments as scientific methods and approaches, like all others, directly correspond to the goals, objectives, hypotheses and expected results of the program. At the same time, the data of visual and internal characteristics will be recorded weekly both in centimeters, oxygen and other indicators of plants, and in the nature of animals, which in a certain progression will show the reliability of the collection of initial data and their sources. This collection method is consistent and associated with the research question and proves the validity of the methods used in the study.

3) Methodologically, this study assumes an abundance of methodology of several sciences, ranging from legal and ending with forestry and biological, depending on the stages, specifics and nature of the work. This is exactly what is an indicator of the possibility to achieve breakthrough scientific and scientific and technical results due to the uniqueness of the interdisciplinary system, which involves creating the foundations for solving environmental problems, improving the environmental situation, based on environmentally friendly safe technologies. Since the project assumes a symbiosis of administration and execution of such, to begin with, the use of three types of methodological tools appears: externally descriptive, internally detailed and statistically correlative. All three methodological tools are innovations and solve methodologically problematic areas.

1. An externally descriptive tool involves the use of four types of design of research results. The justification of this scientific method is the need to use a descriptive tool of the information array in the project. It is interrelated with the first task related to the processing of literary data. It includes cluster systematization, two-dimensional design of the reflection of tasks and the catalyzation of literary data by a legal element.

1.1. Cluster systematization of the information array. This methodological tool involves grouping semantic blocks in the text by the order of transition from a larger variable to a smaller one. It is necessary in the study, as it helps to fix the transition from the general meaning to the result under study. Deduction, induction, and abstraction can also be included in this group.

1.2. Two-dimensional design of task reflection. Assumes a visual analysis of the results of the answered tasks. Each section responds to one specific task. In accordance with this analysis, it is possible to observe the total addition of the results of tasks to achieve a common goal, and it is possible to notice the gradual achievement of the goal from one task to another.

1.3. The catalyzation of literary data by a legal element. Allows you to notice the adaptability of the literature used to the studied territorial space or population.

2. An internally detailed methodological tool justifies a number of certain scientific and legal methods, the purpose of which is a detailed analysis of elements with a vector accentuation of key nuances. It is interrelated with the second task related to the analysis of actions, omissions and responsibility. Assumes the presence of certain methods:

2.1. Multidimensional subjective analysis. Allows you to conduct a subjective analysis of each of the variables for strengths.

2.2. The Lawrence and Wilson pyramid for the identification of obligations. Assumes the analysis of variables by means of a simple formula.

2.3. The Mason Awns scale for the analysis of rights and obligations. A scientific tool that identifies parameters along a logical chain.

2.4. The system of distribution of comparations.

3. Statistical correlation research is justified by an assessment of the interrelationships between several factors, called variables, which are not controlled by the researcher, and which, in turn, is aimed at establishing changes in one variable when another changes or influences it. Data processing is assumed using the SPSS program, which will give greater validity to the results of the study, the reliability of which is determined by demonstrating consistency between the research question and data collection methods. The joint systematic application of the above methods makes it possible to achieve the specified research goal in order to achieve the expected results, including with regard to forecasting the consequences of the results of the implementation of scientific, scientific-technical and innovative projects, scientific-technical, socio-economic, environmental consequences of the implementation of which will be issued in the form of a specialized educational publication "symbiotics of diverse methodological mechanisms in one project".

RESULTS & DISCUSSION

The forest suitability of lands is a gradient multi-vector field with increasing indifference of the edaphic (soil) vector of forest formation in the direction of increasing aridity of the climate and with the age of plantings. A reduction in the norm of atmospheric precipitation brings together the forest-growing efficiency of soil differences, causes a shift in forest suitability towards less moisture-intensive deposits. Thus, it was found that the amount of effective moisture saturation of the pine stand with atmospheric precipitation is mainly determined by the zone (precipitation norm). Its influence (tightness of connection) increases from wet years to dry years, and in acute droughts it approaches 100%. The influence of the granulometric composition (moisture capacity) of this layer varies in the opposite direction. In wet years it approaches 50%, in acute droughts it does not exceed 2-3%. In arid areas, forest-suitable and conditionally forest-suitable lands should be allocated. On conditionally forest-suitable lands, sustainable forest formation is possible only with its artificial stimulation (assistance in the formation and preservation of the forest environment). The decrease in the forest suitability of the lands is accompanied by a decrease in the energy of growth, differentiation and drought resistance of the stand.

Picture 5. Ultra graves effecting in two types of conditions.

A damper for reducing drought resistance is an increase in its density and the formation of a large buffer (starting) stock moisture in COP, timely reduction of the weight of needles in pine forests. During the growth of crops in the steppe, their moisture supply changes from sufficient (during the period of agrotechnical care and the presence of unused moisture in the soil) to scarce (after a significant increase in the water content, closing, drying of the lower layers of the humidification zone (soaking) and switching to feeding exclusively with the moisture of precipitation of the current hydrological year. With age, the drought resistance of full-fledged plantings increases due to the development of roots, early culmination and a decrease in growth, but in the dry steppe and semi-desert it remains insufficient even with high planting density. In these conditions, it can be maintained at an acceptable level only by cutting care (thinning), therefore, crops should be created thick enough. The drought resistance of plantings and the efficiency of logging decrease with the increasing aridity of the climate and the heavier composition of the soil.

Their frequency and intensity should be increased with an increase in the deficit of atmospheric humidification of the territory and the content of clay particles in the feed layer . Soil fertility increases the threshold of plant resistance to soil moisture deficiency, but provokes excessive development of assimilation organs and an increase in the intensity of its consumption, reduces the drought resistance of plantings. At the same time, with high moisture capacity of sediments (during the period of soil maintenance in a pure steam and weed-free state

in non-closed crops), a large volume of root-accessible moisture accumulates in the aeration zone. This moisture, providing additional nutrition. The same basic patterns of the dynamics of forest suitability of lands, nutrition and development of hardwood stands, but somewhat sharper, can be traced on the watersheds of arid regions with complex zonal soils. The study of the growth and condition of the plantings of the Penza-Kamensk, Kamyshin-Volgograd and Volgograd-Elista-Cherkessk drive-dividing GPLPS (in the form of 3-4 wings 60 m wide, placed 300 m apart) in 2006-2011 led to the following results. On steppe chernozems and dark chestnut soils, the safety of plantings at the end of the twentieth century was about 80% of their design area. Almost entirely they consisted of 50-60-year-old mixed stands of oak (about 70%) and ash (F. lanceolata and F. excelsior L. - 20%) of seed origin. Clean plantings of these rocks occupied 3-4% of the area. They developed in the mode of forest ecosystems, had, in general, a good and satisfactory condition. On complex chestnut, light light chestnut soils, the safety of plantings did not exceed 5-20%, and on heavy ones, only fragments of forest strips remained in the relief depressions. At first, plantings older than 50 years were represented by mixed ash (45-50%), oak (10-20%), pure and mixed stands of Ulmus pumila L. and Ulmus minor Mill. seed-growth origin, satisfactory and unsatisfactory condition.

Picture 6. Similar conditions in swop.

Picture 7.

On the second - ash-elm overgrown plantings at the age of 20-40 years prevailed. With a row spacing of 1.5-3.0 m and a chronic lack of forestry care, the formation and condition of the plantings were mainly influenced by the breed composition, the type of oak culture (sowing, planting) and the type of mixing of breeds. On chernozems, up to 50-55 years fell out of the composition of mixed plantings, and on unsalted differences of chestnut soil types 5-10 years earlier, birch, squat elm, elm, fruit satellites, Tatar maple. In the thinning plantings there was self-seeding of oak, as well as undergrowth of ash, somewhat less - maple, elm. On heavy chestnut and light chestnut soils, the opening of the canopy and the destruction of the forest environment in the mother plantings occurred mainly in 20-40 years. In single-tiered, it was accompanied by blackening of the soil, in multi-tiered - by the violent development of undergrowth, and in depressions and undergrowth. In places of timely logging, short-lived growth generations have formed. On all types of steppe soils, oak has an advantage in growth and durability. But in narrow-row mixed plantings, fast-growing rocks often outgrow and displace it from the composition. In the best seed plantations, the proportion of oak is at least 30%. In broad-row crops, ash trunks lean towards the light, reduce height and marketability. The best quality oak-ash plantings are formed with a row spacing of 1.5-2.0 m, but with the large participation of ash after 40-50 years, the death of oak is noticeably accelerated. In thickened clean rows, the basal part of the oak trunks has a "corkscrew-shaped" shape. With rare standing, the peculiarity of its growth is the formation of numerous "forks" and water shoots. When the distance between the rows is more than 3 m, the "fork" of the trunks begins already from a height of 2-3 m. On steppe soils in ripe mixed stands, ash trees are 1.0-1.5 m inferior to oak in growth and productivity, but have increased safety and closeness of crowns in rows. They suppress the growth of shrubs earlier and more successfully, they resume better in plantings where they predominate in the composition. On light semi-desert soils, on the contrary, F. exseIog B. 0.5-1.0 m above the oak. Under the same conditions, dwarf stands with a height of 2-4 m and a diameter of 2-6 cm with strongly curved trunks are formed from pure oak crops without logging. Alternating rows of oak and shrub does not improve its growth.

Picture 8. Ultra grows. Generation 2

Large shrubs often reach an average height of 7-8 m (as the main species in the best plantings). On light chestnut soils, clean plantings of shrubs (scumpia, Tatar honeysuckle, golden currant, etc.) grow and renew better, have high durability. On chernozems and dark chestnut soils, due to the rapid growth of forest-like rocks from a young age, the admixture of shrubs does not accelerate the formation of plantings, and after closing (from 20-25 years) worsens their sanitary condition, inhibits growth (g = -0.22 ... - 0.47), the renewal of oak and its companions. In plantings where oak was cultivated by sowing, its growth slows down to 20-25 years (g = -0.4.-0.5) with an increase in the density or proportion of oak in the original composition. Obviously, this is caused by the thickening of the nests (rows), the lack of timely cleaning. Subsequently, as the stand is thinned, this influence gradually weakens. The presence of ash in the plantation, on the contrary, is not strong (g = 0.36-0.49), but accelerates the growth of oak, up to about 30 years (possibly due to the suppression of the growth of shrubs and straggling oaks), and in subsequent years it does not affect it.

CONCLUSION & RECOMMENDATIONS

As a conclusion and recommendation, it should be noted that for the Republic of Kazakhstan, namely for the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan, it is quite expedient to approve an application for grant funding regarding the mass planting of coniferous-deciduous forest on the territory of the village of Beynetkesh of the Pervomaisky district of the Tolebiy district of the Turkestan region of the Republic of Kazakhstan with its further transformation into a national natural park. At the same time, it is important to note that the present will have a positive environmental, economic and social effect not only on the Tolebi district, but also on the entire Turkestan region.

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