Current Situation of Forest Cultivation Technology and Management Measures

Fanwu Kong

Taihang Mountains State-Owned Forest Administration of Shanxi Province, Jinzhong, 032700, Shanxi, China

Keywords: Forest cultivation technology, Status analysis, Management measures

Abstract: Among China's natural resources, forest resources are an important component, which can bring certain economic benefits. They can also improve the ecological environment, alleviate soil erosion and other problems, promote balance of nature and achieve sustainable development. Therefore, we should pay attention to the development of forest cultivation technology, which is of great significance to the development of forestry and the improvement of ecological environment in our country. Forest cultivation technology is a very systematic and complex work, which is involved in the whole process of forestry development. This article mainly unifies our country forest cultivation technology development present situation, and has carried on the corresponding discussion to its management measure.

1. Introduction

At present, the environmental problems are more and more serious, which affect the social environment and the sustainable development of the country. The forest resources are very important for the ecological environment regulation, which can not only alleviate the problems of soil erosion, but also improve the ecological environment, the promotion of balance of nature, therefore, forestry development is highly valued. In view of the development in recent years, the competent forestry authorities have also gradually carried out forest protection projects and forest seedling-raising projects, which have greatly increased the reserves of China's forest resources, to promote a marked improvement in the ecological environment.

2. The Significance of the Application of Forest Cultivation Techniques

2.1 To Maintain the Forest Balance of Nature

As an important component of forest resources, biological resources play an indispensable role in the sustainable development of forestry. In the process of forest cultivation, the relevant staff should pay attention to the diversity of biological resources development within the cultivation area, and, if necessary, need to intervene through artificial means, furthermore, the diversity of forest resources can be realized, and the living space of biological resources can be optimized, and the construction of forest trees within forest resources can be made more stable.[1] It can be seen that the two are complementary to each other. At the same time, there is a need to improve forest resources through the use of scientific methods, as well as to provide better living space for biological resources and to enrich plant species within forests by using the same plant cover, through this subtle way to promote the effective improvement of the internal forest ecological environment, enhance our forest ecological benefits, maintain the balance of the internal forest ecological environment.

2.2 Improve the Growing Environment of Forest Vegetation

In the process of cultivating forest resources, staff should be aware that the environment inside the forest will have a more direct impact on the growth of all kinds of vegetation. In order to ensure that trees and vegetation can be kept in a relatively good state of growth, the relevant staff should use a variety of methods to optimize the living space of vegetation, improve the comfort of the internal environment of forest resources. As a whole, the growth of trees has a high demand for

environmental conditions, therefore, we should reasonably control the density of trees within the forest, starting from the root causes, as far as possible to avoid the dense distribution of trees, resulting in insufficient light seedlings and a series of problems, which will affect the healthy growth of trees and vegetation. In the whole process of forestry development, it is necessary to make more rational use of forest cultivation techniques and to regulate forest density by pruning trees with internal problems through regular inspections, to ensure that the necessary conditions of light and ventilation for the growth of trees can be met, effectively improve the relationship between various types of vegetation nutrition competition, and provide a better living environment for the growth of trees, promote the overall effect of forest cultivation has been effectively enhanced.[2]

2.3 Optimize Forest Stand Structure

The overall structure of forest resources is very systematic, composed of different nature factors, including tree planting density, the nature of the tree itself, and so on, the forestry staff concerned should constantly optimize the stand structure, and at the same time, more effective measures should be used to effectively adjust some relatively poor-quality tree species, and then effectively adjust the stand structure. [3]In order to optimize forest stand structure effectively, we should pay attention to the application of forest cultivation technology, which is the basis of ensuring forest resources and the necessary means of organic regulation of ecological environment. In this way, it can provide relatively necessary living conditions for the forest resources, and then ensure that the forest can get more adequate nutrients during the growth period, so as to promote the effective improvement of its internal living environment. Therefore, forest cultivation can effectively optimize the forest structure, realize the optimal allocation of forest resources to ensure the stability of the forest as a whole.

2.4 Optimize the Wood Structure of the Forest

After years of development, it is known that wood is widely used in the process of forestry production as a major product, but also the main way of economic benefits of forestry. In view of the development of forestry in our country, there still exist some obvious problems such as poor timber quality and poor overall structure, etc. at the same time, supervision and management should be strengthened in all aspects, and different types of trees to be planted in different seasons should be specified according to the actual situation, to improve the overall quality of forest resources to the greatest extent. [4]For the application of forest cultivation technology, it is usually under the premise of a certain planning to promote the effective improvement of stand structure and achieve effective optimization of environmental quality; There is also a need to provide higher-quality timber products for all sectors, increase the quantity of timber supply, maximize the economic benefits of forestry, ease the shortage of timber supply on the market, and promote a virtuous cycle of forestry development.

3. The Present Situation of Forest Cultivation Technology Research in Our Country

3.1 Seed Treatment Technique

In the development of forestry engineering, we should pay attention to seed quality, which is a very important link. After the necessary selection work has been completed, effective measures should be taken to deal with them effectively, including the techniques of processing, sowing and germination. [5]Seed germination rate and germination time can be effectively controlled by reasonable application of seed treatment techniques.

3.2 Techniques of Seedling Production from Somatic Embryo

The technology of plantlet production is an important forest culture technology, and the Forestry Department takes it as a key research object, usually selecting high-quality seeds and using systematic technology of plantlet production, in the greenhouse, when the somatic embryo develops to a suitable degree, it needs to be screened artificially until the somatic embryo develops into a

relatively mature somatic embryo in the coating, will be able to obtain the required artificial seeds. [6]All the processes of this technology are in the greenhouse environment, and the research on this technology is relatively late in our country.

3.3 Programmed Seedling-Raising Technology

Among the many different forest breeding techniques, programmed seedling breeding is the most commonly used one. In the early stage of seedling-raising, programmed seedling-raising needs to select appropriate container and other equipment, and also need to use appropriate means to speed up seedling and seeding work. Under normal conditions, programmed seedling cultivation can be divided into seedling stage, growth stage and formation stage. [7]Therefore, strictly according to the corresponding steps, reasonable application of programmed seedling technology, can maximize the overall level of forest cultivation to ensure the overall quality of forest cultivation.

3.4 Fertilization and Irrigation Techniques

Fertilization and irrigation technology is also a key link in the process of forest cultivation, but it is easy to be ignored. At present, some developed countries, such as the United States and Germany, are relatively mature in their research on forest right and wrong, irrigation technology, and so on, the data of fertilization, irrigation and forest cultivation have been fully mastered, so the amount and time of fertilization are also controlled relatively accurately. Our Country Forestry Department related technical personnel also carried on the specialized research to this, the effects of pH, metal ion content and algae content in irrigation water on seedling and the effects of fertilization amount and type on forest cultivation have been achieved.[8]

3.5 Breeding and Cultivation Techniques

In the artificial afforestation, breeding and cultivation technology is the key link, our country already had the relatively mature experience at present. The techniques of breeding and cultivation can be divided into two types: direct seeding and seedling cultivation, in which the factors of woodland preparation, plant-row spacing control and follow-up management have the greatest influence on breeding and cultivation. In the process of breeding and cultivation, plant and row spacing should be controlled in combination with the type of tree species sown, the row spacing of fast-growing forests should be appropriately reduced, and the row spacing of tree species that can only be established after more than 10 years should be appropriately increased, and at the same time, we should also take into account climate factors, geographical conditions, etc. , according to the actual situation to adjust.

4. Management Measures of Forest Cultivation Techniques

4.1 Grasp the Relationship between Forest Cultivation and Utilization and Development

For the work of forest cultivation and management, the most attention should be paid to the need to grasp the relationship between forest cultivation and use and development. The main reason is that China's forest resources themselves recover relatively slowly, and the level of development of forest cultivation technology is not as good as that of developed countries such as the United States, especially in the area of artificial forest cultivation, the growth rate of forest trees is also difficult to meet the current demand for forest resources. Therefore, we can realize the reasonable exploitation of forest resources by improving the cultivation technology of forest. The two should promote each other and maintain the organic balance between them. At the same time, in order to meet the basic needs of the future development of society and effectively improve the current harsh natural environment, it only depends on the balance between forest cultivation and forest exploitation, can not meet the subsequent development and needs. Forestry personnel should be flexible in planting, adapt to local conditions, select more suitable trees and trees with shorter growth cycles to plant, and constantly innovate cultivation techniques in the process of planting, the quality of forest cultivation should be improved to the greatest extent, and the loss of forest resources caused by diseases and insect pests should be reduced as much as possible. In order to

further strengthen the effective management of forest resources, we should avoid the problem of"Use before, governance after". Among them, forestry managers should pay attention to the supervision and inspection of forest resources, improve the process of this part, strictly control the abuse of forest resources, and severely punish any problems that arise, in order to avoid the waste of forest resources to the greatest extent, forestry managers should also acquire sound professional knowledge and practical skills, and know the different species of trees in forest areas, but also according to the species of trees themselves and their uses, etc. , in order to protect the forest resources, it is necessary to make a deeper division, utilize and develop the forest resources reasonably.

4.2 Establish Scientific and Standardized Procedures for Forest Seedling Breeding

In forest cultivation, seedling-raising is an important link, which can be divided into three stages: establishment stage, growth stage and lignification stage. Before the formal breeding, the necessary preparations should be made, the seeds need to be specially germinated, the breeding media should be prepared, and a relatively suitable container should be selected for sowing and covering the seeds, in watering, fertilization, and effective management and control, and eventually cultivate a large number of relatively high survival rate, and relatively vigorous growth of high-quality seedlings. From the practical point of view, the relative scientific and standardized seedling-raising process is the key to ensure the seedling quantity and survival rate. At present, the United States and Japan have made a series of explorations in the field of container seedling, and a relatively complete programmed seedling system has been formed. Through practice, we can know that the survival rate of the seedlings cultivated by reasonable use of this part of the system is relatively high. At present, our country should pay more attention to the study of seedling-raising technology, such as seed storage technology, and fully absorb, study and learn from the mature seedling-raising technology and experience of developed countries, so as to adapt to local conditions, to formulate a more in line with our national conditions and environment of scientific, standardized, procedural forest seedling system.

4.3 To Standardize the Management of Woodland and Planting

As a whole, the soil and terrain conditions of forest land also affect the growth of seedlings to a great extent, and different types of seedlings have different requirements for forest land soil and terrain. Therefore, we should strengthen and pay attention to the standardized management of forest land. It is mainly to carry on the experimental monitoring and the research analysis to the relationship between the seedling growth and the forest land soil and the topography, through the analysis of the data, carries on the certain instruction to the forest land soil improvement measure, to control the time of forest land arrangement and the selection of seeds, the relative standard measures of forest land soil were established to create better conditions for forest land cultivation. At the same time, we should also carry out standardized planting to ensure that trees can be kept in a state of healthy growth, planting density is too large or too small, will affect the survival rate of seedlings and health status. The planting management needs to combine the specific terrain condition, the soil condition and so on, to control the seedling density, and then ensure the standardized management of forest land planting.

5. Conclusion

In recent years, the problem of environmental pollution has become more and more serious, and the ecological environment has deteriorated obviously. Therefore, the state attaches more and more importance to the development of forestry. In the development of forestry, forest cultivation is an important part. The state has also invested a lot of manpower and material resources in the research and development of forest cultivation technology, and has implemented a series of measures for the effective improvement of ecological environment. Considering the current situation, we should grasp the relationship between forest cultivation and utilization and development, obtain the support of the state, learn the advanced technology of foreign countries, and perfect the forest seedling

management system of our country, promote our country forestry to keep in the healthy development condition.

References

[1] Wu Guibao. Analysis of current situation of forest cultivation technology and discussion on management measures [J]. Henan agriculture, 2022(5) : 2.

[2] Kwok Kit-man. Analysis of current situation of forest cultivation technology and discussion on management measures [J]. Rural Science Experiment, 2022(19) : 3.

[3] Xie Yiping. Application status and management measures of forest cultivation technology [J]. Modern Agricultural Technology, 2021(14) : 2.

[4] Liu Shouhong. The present situation and management measures of forest cultivation technology [J]. New farmers, 2021,000(017) : p. 85-85.

[5] Tan Pengpeng. Study on the development trend and management measures of forest cultivation technology [J]. Practical information on science and technology in rural areas, 2021,027(011) : 101-102,104.

[6] Wang Heping, Lu Chen. Application status and management measures of forest cultivation technology [J]. Huaxi District, 2021(29) : 1.

[7] Chen Zhiguo. The development status and effective management measures of forest cultivation technology were discussed [J]. Friends of the farmer, 2020(17) : 1.

[8] Yu Kai. Study on the development trend and management measures of forest cultivation technology [J]. China's forestry industry, 2022(4) : 2.