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High-Quality Agricultural Development: A Mini Review

Zhongsheng Guo[1,2*]

[1]*Northwestern A & F University, Yangling, China*
[2]*Institute of Soil and Water Conservation, CAS and MWR, Yangling, China*

***Correspondence to:** Zhongsheng Guo[1,2], [1]Northwestern A & F University, Yangling, China; [2]Institute of Soil and Water Conservation, CAS and MWR, Yangling, China E-mail: guozs@ms.iswc.ac.cn

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ABSTRACT

Along with economy speed development and increase in peoples living level, people want high-quality agriculture produce to get healthy. In order to produce more high-quality agricultural products, we must utilize nature resources rationally and carry out Agriculture High-quality development. Agriculture High-quality development is to take some effective measures to make land produce high-quality agricultural products and get maximum yield and effect to meet the need for better life and health. Theory foundations of Agriculture high-quality development are natural resources use limit by plants, vegetation carrying capacity and critical period of plant resources relation regulation. The methods of Agriculture High-quality development are to plant excellent plant species or varieties, take appropriate initial plant density and effective measures to regulate the plant resources relation to ensure plant grow well and produce high-quality agricultural products, obtain maximum yield and effect.

Keywords: High-Quality Development of Agriculture; Natural Resources Use Limit by Plants; Vegetation Carrying Capacity; Critical Period of Plant Resources Relation Regulation; High-Quality Agricultural Products

INTRODUCTION

Agricultural development has gone through a long process and now entered the Agriculture High-quality development [1]. In order to solve these questions in process of modern agriculture produce, such as soil degradation, waste or overuse nature resources by plants and reduce in quality of high-quality agricultural products and income of farmer in the modern agriculture and meet people's need for better life and health, we should realize sustainable use of nature resources and carry out Agriculture High-quality development. The purpose of the paper is to introduce the High-quality agricultural products and Agriculture High-quality development.

STUDY METHOD

Since 1950, large scale afforestation has been carried out in the Loess Plateau, China, especially the construction of the "Three North" shelterbelt system, which began in 1978 [2]. As plant grow, the plant resources relationship changed from equilibrium relation between plant growth and resources use to non-equilibrium relation, which lead to soil and vegetation degradation and crops failure because of overload because plant density is more than vegetation carrying capacity or waste of nature resources because of low load because plant density is smaller than vegetation carrying capacity. In order to solve the questions of soil and vegetation degradation and crop failure, we should establish the new theory and method to promote Agricultural development in the new era. Author reviews a lot of papers and find that the agriculture development can be classed into three stages and now entered the new stage of Agriculture development according to the efficiency of resource utilization by plants based on long innovation study of relation between plant growth and soil water. For example, Guo proposed the concept of soil water vegetation carrying capacity in 2000 [3-4], and then establish different plant density to analyze the relationship between plant density and soil water supply or consumer and Establish an estimation method for soil water vegetation carrying capacity and determine the numerical value of soil water vegetation carrying capacity of caragana shrub and then [5-7], With the in-depth research on the soil water vegetation carrying capacity, Guo proposed the method of maximum infiltration depth and the concept of starting time of plant water relation regulation [8] and then soil water resources use limit by plants in 2010 and then study the whole process of agricultural development can be divided into three stages: Low level development stage or primitive agriculture, Level improvement stage and high-quality development new stage [9-12]. The direction of Agriculture development is Agriculture High-quality development [13-14]. Only in this way, land can produce more better and health food and service to meet the people's needs for a better life and crop type, yield and quality.

RESULTS

Agricultural development has gone a long time. According to the efficiency of resources use by plants, the whole process of agricultural development can be divided into three stages: Low level development stage or primitive agriculture, Level improvement stage and high-quality development new stage.

Low level agriculture development stage

During the early stages of development or the primitive agricultural period, people gathered wild fruits and relied on nature for survival because at that time, science and technology had not yet developed and people's labor productivity was very low. People had to depend on nature to survive. Today, in some primitive tribes in Africa, one can still see this low-level agricultural development method. However, with the development of the economy and society, this low-level agricultural development method will disappear.

Level improvement stage

At the Level improvement stage, people start to select or cultivate better plant species, weeding, producing and applicating fertilizer and irrigation, if there are water resources to increase food kinds, improving quality and amount of food. The turning point from the low level of development to the Level improvement is plant domestication and animal introduction domestication, the development of gathering economy to planting economy. There are some events such as overuse chemical fertilizer and the over dose application of pesticides and so on, which cause crops failure and resources waste happens, which is not good for Agriculture High-quality development but easily cause environment and healthy problem. In most of farmland, you can see this kind of agriculture development. Level improvement stage is a transition stage from Low level agriculture development stage to agriculture high-quality development. With the economic and society development, this kind of agriculture development will be developing into Agriculture high-quality development.

Agriculture high-quality development

In 2017, China put forward the concept of high-quality development, so, Agriculture development has entered high-quality development. At the new stage of high-quality development, people must take effective measures or method to make plant grow well and obtain the maximum yield and benefit and produce more better and health food and service to meet the people's increasing needs for a better life and crop types, yields and quality. To carrying out high-quality development, we must overcome the overuse chemical fertilizer and the over dose application of pesticides and so on in the production process to ensure plant grow well and carry out sustainable use of nature resources and agriculture high yield and benefit.

Theory foundations of Agriculture high-quality development

Theory foundations of Agriculture high-quality development include natural resources use limit by plants, Vegetation carrying capacity and the critical period of plant resources relation regulation.

Natural resources use limit by plants

Natural resources are limit, So, the natural resources utilized by plants on crown or root soil are limited. To carry out sustainable use of natural resources and Agriculture high quality production, we must use the natural resources in sustainable way. The limit can be expressed by Natural resources use limit by plants. The natural resources use limit by plants is the controlling limit plants use natural resources, expressed by indicator plant and can be divided into space natural resources use limit by plants, soil water resources use limit by plants and soil nutrient resources use limit by plants. For example, in water-limited region, the natural resources use limit by plants is soil water resources use limit by plants. The natural resources use limit by plants changes with plant species and location [10-12]. For example, natural resources use limit by plants in water-limited region is the limit of soil water resources use limit by plants, which is the soil water resources in the maximum infiltration when soil water content is equal to wilting coefficient. The indicator plant for original vegetation is dominate species, especially constructive species, the uppermost dominant species, which is native to the local region because for a long time they have developed a good relationship with the local condition. The indicator plant for non-Native vegetation is goal or cultivated plant species.

Vegetation carrying capacity

The vegetation carrying capacity is the ability of nature or land resources to carry vegetation in a given time, especially in the critical period of plant resources relation regulation and given space, site condition. vegetation carrying capacity can be expressed by the quality or plant density of indicator plant in plant community, which is the function of plant species, time and location [10-12]. For example, the vegetation carrying capacity in water-limited region is soil water vegetation carrying capacity, which is the ability of soil water nature resources to carry vegetation, which changes with plant species, times and location [10-12]. For example, the vegetation carrying capacity in water-limited region is soil water vegetation carrying capacity, which is the ability of soil water resources to carry vegetation in a given time and space because soil water is the most important factor to influence plant growth, fruit quality, yield and benefit. Plant resources relationship in origin forest is very harmony and plant grow well and bear fruit but the goods and service cannot meet people's need in the stage of primitive agriculture, a lot of original vegetation has been changed into non-native plantation such as Saskatoon berries, red plum apricot and corn in the semiarid region, China. some plant such as Saskatoon berries, grow and develop well, suitable for local climate, easy to develop. But another plant, such as corn and red plum apricot, they are not suited to the local climate and need to regulate plant resource relationships.

The critical period of plant resources relation regulation

As plant grow, plant canopy and root grow great, plant use more resources, Plant resources relation changes with time. When the available resources in crown or root zone approaches to natural resources use limit by plants, plant resources relation enters the critical period of plant resources relation regulation. The ending time of the critical period of plant resources

relation regulation is the ineffective time of plant resources relation regulation such as the ending time of red plum apricot is 15 July because red plum apricot become maturity in 15 July and caragana is the end of September because caragana is used for soil and water conservation forest, which stop to serve in the end of September of semiarid region of China. The critical period of plant resources relation regulation is the most important period in the whole process of plant growth and yield and benefit cultivation, which can be expressed by the amount of available natural resources in canopy or root zone. The vegetation carrying capacity in the critical period of plant resources relation regulation decides the quality, maximum yield and benefit [15].

Methods of agricultural high-quality development

High-quality agricultural products mainly include pollution-free agricultural products, green food, organic agricultural products and brand-name agricultural products. This type of agricultural product is usually certified by authoritative departments and meets relevant quality standards and safety requirements. With the improvement of people's living standards and the enhancement of their health awareness, high-quality agricultural products are increasingly valued and favored by consumers. Methods of agricultural high-quality development include selection of better plant species and variaties according the site condition and market need [15]; take the suitable initial planting density, which is more than vegetation carrying capacity [16] and the regulation of plant resources relation according to plant need, such as weeding, fertilizer, pest control and reduce plant density or plant leaf according to vegetation carrying capacity to make plant grow well and produce high-quality produce. Because the carrying capacity in the critical period of plant resources relation regulation decides the quality of product, the maximum yield and benefit, We must take theories such as the utilization limit of plant resources, the carrying capacity of vegetation, and the critical period for regulating the relationship of plant resources as guiding principles, select excellent tree species or varieties, take appropriate initial plant density and take effective measures to regulate the plant resources relation regulation and ensure plant grow well and get the cultivated goal. If the plant density exceeds the vegetation capacity, the plant resources relation should be regulated based on vegetation carrying capacity, especially the vegetation carrying capacity in the critical period of plant resources relation regulation, otherwise the further increase plant use natural resources will lead overuse of natural resources because available natural resources is more than natural resources used by plant, which will lead to the decline of vegetation and the decline of grain yield and quality [17]. As for some fruit trees, after the plant density is fixed, we can use suitable leaf amount and the quality fruit to regulate the leaf-fruit relation to get High-quality agricultural products and maximum yield and benefit [18-23].

DISCUSSION

Along with economy speed development and increase in peoples living level, people want More high-quality agriculture produce for healthy. In order to produce high-quality agriculture products, we must utilize nature resources rationally and carry out Agriculture High-quality development. Agriculture High-quality development is to take some effective measures to make land produce high-quality agricultural products and obtain maximum yield and effect to meet the need for better life and health. Theory foundations of Agriculture high-quality development are natural resources use limit by plants, vegetation carrying capacity and critical period of plant resources relation regulation. The methods of Agriculture High-quality development are to select excellent tree species or varieties, take appropriate initial plant density and effective measures to regulate the plant resources relation to ensure plant grow well and get high-quality agricultural products and maximum yield and effect. agricultural development had entered high-quality development stage. Theory foundations of Agriculture high-quality development is Natural resources use limit by plants, vegetation carrying capacity and critical period of plant resources relation regulation. Methods of Agricultural high-quality development is to select excellent tree species or varieties, take appropriate initial plant density and effective measures to ensure plant grow well and get the cultivated goal.

CONCLUSION

Because of the large agricultural area and the increasing population, which has exceeded 8.2 billion at present, different regions have different climate and crops suitable for growth, so it is necessary to establish more and more demonstration of agricultural high-quality development in different part of the world to select excellent tree species or varieties according to site condition and market need, determine the appropriate initial plant density, resources use limit by plants, vegetation carrying capacity, the critical period of plant resources relation regulation to regulate the plant resources relation, especially in the critical period of plant resources relation regulation to make plant grow well and get maximum yield and benefit to realize sustainable use of nature resource and agricultural high-quality development to meet people's needs for a better life and High-quality agricultural products.

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