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High-Quality Agriculture Produce and Agricultural High-Quality Development

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Abstract

Because modern Agricultural production cannot produce more high-quality agriculture produce and get more benefit to meet the people's increasing needs for a better life, food security and health, Agriculture development had entered new stage of Agriculture high-quality development. Agriculture high-quality development is to take effective measures or methods to make land produce maximum yield and benefit. After a couple of years research, the results showed that in order to meet the need of people's increasing needs for a better life and high-quality Agriculture produce. The most important work in the future is to make land produce more better and health food to meet the people's needs for a better life and high-quality Agriculture produce, therefore, we should select the best plant select excellent tree species or varieties, decide appropriate initial plant density for different plant in different regions, determination resources use limit by plants, vegetation carrying capacity and the critical period of plant resources relation regulation to make plant grow well and produce high-quality produce to get maximum yield and benefit and realize sustainable use of nature resource and agricultural high-quality development.

Introduction

Agricultural development has gone through a long process. There are some different kind of agriculture concepts, such as ecological agriculture [1], organic agriculture [Scrinis, 2007; 2], smart agriculture and data agriculture and so on. Organic agricultural practices respond to and offer alternatives to the health and environmental problems related to conventional technologies and practices of production and embrace many alternative ideals such as alternative distribution and retailing networks and the counter-cultural wholefoods movement (Scrinis, 2007). Since 2017, Chinese government put forward high-quality development, so agricultural development had entered the new stage of high--quality development. Agriculture high-quality development is to take effective measures or methods to make land produce more high-quality agricultural products and get the maximum yield and benefit because high-quality agricultural products provide rich nutrition and health for us (Guo 2025).

Study Method

In order to solve the questions such as soil and vegetation degradation, crop failure and low quality of agricultural products and economic benefit in modern Agricultural production and match the need of the people's increasing needs for a better life and crop types, yield and benefit. Author reviews a lot of paper and find that the according to the efficiency of resource utilization by plants based on the recent years innovation studies (Guo *et al*, 1990, 2002, 2003, 2004, 2009, 2013; Guo 1990, 2010, 2014, 2020, 2021, 2022, 2023, 2025), 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. Agriculture development enters the new stage of high-quality development. We should take effect measures and method to make land produce more and healthy food and service to meet the people's needs for a better life and high-quality Agriculture products.

Results

1. The Whole Process of Agricultural Development

Agricultural development has gone a long time. According to the efficiency of resource utilization 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. That is the Low-level development stage or primitive agriculture, the Level improvement stage and agriculture high-quality development.

At the high-quality development new stage, people must take effective measures or methods to make land producr more safety and healthy produce to get the maximum yield and benefit 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 get maximum yield and benefit to carry out sustainable use of nature resources and agriculture high--quality development.

2. Theoretical Foundation of Agriculture High-Quality Development

Resources Use Limit by Plants

Because natural resources are limit, the utilization of natural resources by plants is limited. To carry out sustainable use of natural resources and Agriculture high quality development, we must use the natural resources in sustainable way, which is expressed by the natural resources use limit by plants and vegetation carrying capacity, especially the vegetation carrying capacity in the critical period of plant resources relation regulation because the natural resources use limit by plants is the controlling limit plants use natural resources in soil water and nutrient rich regions, water-limited regions and soil nutrient limited regions, expressed by indicator plant. The natural resources use limit by plants changes with plant species and location (Guo 2010, 2017,2021, 2023,2025). For example, loess hilly region in water-limited region, natural resources use limit by plants is the 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 spe-

cies, 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 (Guo 2010, 2014, 2020).

2.2. Vegetation Carrying Capacity

The vegetation carrying capacity is the ability of nature resources or land resources to carry vegetation in given time and space, expressed by the plant density of indicator plant. For example, in water-limited region, the vegetation carrying capacity is soil water vegetation carrying capacity, which is the ability of soil water resources to carry vegetation in given time and space because soil water is the most important factor to influence plant growth, yield and benefit. Plant resources relationship is very harmony and plant grow well to 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 produce high-quality produce. 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.

Along with plant grow, plant canopy and root grow great, plant use more resources. lant resources relation changes with time. When the resources plant use is equal 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 fruit expanding. The critical period of plant resources relation regulation is the most important time in the whole process of plant growth and yield and benefit cultivation, which is 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 maximum yield and benefit.

Because the carrying capacity in the critical period of plant resources relation regulation decides the maximum yield and benefit, we must take the theories of resources use limit by plants, vegetation carrying capacity and the critical period of plant resources relation regulation as a guild, select excellent tree species or varieties, and take appropriate initial planting densities and effective measures, such as weed according to the effect of weed on crop, application of fertilizer according to suitable amount of fertilizer and water according to the plant water requirement to 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 (Guo *et al*, 2002; Guo & Shao, 2003, 2004, 2010, 2013; Guo 2014; 2021a and 2021b, 2023,2025).

The vegetation carrying capacity is the function of plant species, time and location (Guo 2014,2021,2025). For example, 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 (Guo 2014, 2021, 2023,2025).

4. The Direction of Agricultural Development in the Future

Due to the extensive area of agricultural land, people need more healthy food, and the population is also continuously increasing, the world's population has now exceeded 8.2 billion, different regions have different climate and crops suitable for growth, therefore, we have to select superior plant species or varieties based on market demand and site conditions, determining superior plant species or varieties in different regions, setting appropriate initial planting densities, and determining the resource utilization limits, vegetation carrying capacity, and key periods for regulating plant resource relationships of superior plant species or varieties, in order to achieve the maximum yield and benefits, is the research direction for high-quality agricultural development in the future. We should establish high-quality agricultural development demonstration bases in different regions

to study the theories and methods of high-quality agricultural development in different regions, achieve sustainable utilization of natural resources and high-quality agricultural development, and meet people's needs for a better life, as well as their demands for high-quality agricultural products and nutrition.

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Additional Information

Competing Financial Interests Statement:

There are no competing financial interests

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