

Necessity Analysis of Soil Census

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Abstract

Soil census is an important method to find out the type and distribution of soil, as well as the quantity and quality of soil resources. The results of the census can provide scientific support for the scientific classification, planning and utilization, improvement and fertilizer cultivation, protection and management of soil, and can also provide decision-making basis for the formulation of major policies of economic, social and ecological construction.

Keywords

Soil Census; Scientific Support; Ecological Policy Making.

1. Background:

In the first soil survey, the bottom of cultivated land soil was initially found out and cultivated land resource distribution, soil fertility, soil improvement map and other results were formed, which played a role in promoting farmland capital construction. In order to do a good job in agricultural land evaluation, agricultural regionalization, agricultural structure adjustment and agricultural layout, and promote agricultural production by carrying out scientific planting. It provided strong support for implementing the "eight-character constitution" in accordance with local conditions, played an important role in increasing food production, and greatly promoted the development of soil science in our country[1,2].

Twenty years after the first soil survey, with the in-depth development of the agricultural learning Dazhai movement in various regions, the large-scale farmland construction, the reform of the farming system, and the continuous improvement of agricultural production level, great changes have taken place in the soil, and many new situations and new problems have appeared. The data obtained from the previous soil survey can not meet the needs of the new situation.

Due to the lack of understanding of the "changed soil" condition, there is a lot of blindness in production. Therefore, the "soil" problem has become a high speed development of agricultural production and the urgent need to solve the problem. In order to solve this problem, some counties and cities first carried out a new round of soil census work (the second soil census work). The remarkable effect achieved by the pilot has improved the enthusiasm of the general cadres and masses to carry out soil census and improve the soil. More and more places have regarded soil census as a powerful measure to change from low yield to high yield and high yield to higher yield [3-5].

The second soil survey (1979-1984) comprehensively clarified the type, quantity, distribution and basic characters of Chinese soil resources, established the Chinese soil classification system, and completed the soil map, land use resources map, soil nutrient map, soil improved utilization zoning map under various (province, city, county) scale. Data and maps such as "Soil of China", "Soil Species Records of China", "Soil Nutrient Map of China", "Land Use Status Map of China", "Soil Improvement and Utilization Zoning Map of China" have been compiled. The proportion, distribution and main obstacle types of medium and low yield fields in China were found out, which provided important foundation support for the implementation of agricultural comprehensive development, cultivated land reclamation, medium and low yield field transformation, scientific fertilization and agricultural regionalization.

The soil classification system adopted in the second soil census is based on the soil genetic classification, introducing the idea of diagnostic layer and diagnostic characteristics, and gradually integrating with the world's advanced soil classification system. At the same time, the soil survey is more widely used "3S" technology, so that data collation, storage, comprehensive map compilation and soil physical and chemical property analysis work have achieved good results, obtained a large number of soil scientific data, the establishment of a "five-level system" soil classification system. In addition, we have a new understanding of the variation rule of Si/Al ratio in zonal soil, the types of clay minerals in various soils, the classification index of paddy soil, the types of purple soil and its P/K content as well as the distribution of soil trace elements in all regions of the province.

Through the second soil survey, the quantity, distribution, fertility, physical and chemical properties, production performance and the main soil obstacle factors affecting agricultural production of the country's soil resources were identified, achieving the purpose of identifying resources, understanding the problems, promoting the development of soil science, soil science for production services[6,7].

With the rapid development of our economy, farmland highly intensive planting, the use of high intensity and high investment method has not only caused farmland fertility degradation, but also caused some ecological environment problems; As a result, grain production fluctuated greatly and the potential of high-yield crop varieties could not be developed well. Therefore, to master the changing characteristics and rules of cultivated land quality under different regions and different using methods, to carry out long-term monitoring, evaluation and warning of cultivated land quality is of great significance to improve our cultivated land quality, guide cultivated land quality management, and ensure national food security and agricultural sustainable development.

2. Significance:

Soil triplification is an important basis for keeping the red line of cultivated land and ensuring national food security. With the development of economy and society, the occupation of cultivated land has become more rigid. To further fulfill the responsibility of protecting cultivated land, strictly observe the red line of cultivated land, and ensure national food security, it is necessary to find out the quantity and quality of cultivated land.

It has been 40 years since China's second soil general Survey (hereinafter referred to as "the second general soil Survey"), but the relevant data can not fully reflect the current situation of soil quality in agricultural land. To implement the strategy of grain storage in land and grain storage in technology and keep the cultivated land red line, it is necessary to find out the cultivated land quality.

On the basis of China's third National land Survey (hereinafter referred to as the "Three Land Surveys"), it is urgent to carry out the work of soil tripling and implement the "comprehensive physical examination" of cultivated land.

Carrying out soil triplication is an important support for implementing high-quality development requirements and accelerating agricultural and rural modernization. To fully, accurately and comprehensively implement the new development concept, promote the green transformation and high-quality development of agricultural development, save water and soil resources, and promote the abundance and quality of agricultural products cannot be achieved without the support of soil fertility and health indicators. To promote varieties cultivation, quality improvement, brand building and standardized production, and improve the quality and competitiveness of agricultural products, detailed soil characteristics index data are needed to support. To guide farmers and new agricultural management subjects to cultivate, fertilize and transform soil for soil, and improve agricultural production efficiency, soil nutrients and obstacle index data are needed for support. The development of modern agriculture and the promotion of informatization and precision of agricultural production, operation and management need the support of soil big data.

It is an important measure to promote the construction of ecological civilization to carry out soil tripling. With the rapid advancement of urbanization and industrialization, a large amount of waste discharge directly or indirectly affects the soil quality of agricultural land: the area and degree of farmland soil acidification are expanded, the activity of heavy metals in soil is enhanced, the trend of soil pollution is aggravated, and the quality and safety of agricultural products are threatened. The decrease of soil biodiversity and the aggravation of soil-borne diseases restrict the function of soil. In order to fully grasp the soil properties of cultivated land, garden land, woodland and grassland, soil suitability of cultivation, afforestation and grass land, coordinate the production, environmental protection and ecological functions of soil, and promote "carbon neutrality", it is necessary to carry out a national soil survey. Carrying out soil triplex is an effective way to optimize agricultural production layout and promote rural industry revitalization. A large population and little land is a basic condition of our country. It is necessary to make rational use of soil resources, play regional comparative advantages, optimize agricultural distribution, improve the utilization rate of soil, light and heat resources. To promote the implementation of the optimization of the production layout of agriculture, forestry and animal husbandry proposed in the Outline of the 14th Five-Year Plan for national economic and social development, the soil suitable for species, scientific crop rotation, the combination of agriculture and animal husbandry, and the development of multiple industries according to local conditions, so as to ensure not only the effective supply of grain and important agricultural products, but also the diversity of food, and promote the prosperity of rural industries and the increase of farmers' income, the basic data of soil census is needed to support.

Acknowledgments

This research was funded and supported by the Internal Scientific Research Projects of Shaanxi Provincial Land Engineering Construction Group (No. DJNY2022-25).

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