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Study on the Innovation of Crop Breeding System and Protection of New Plant Varieties in China

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Abstract:Study on the innovation of crop breeding system and protection of new plant varieties in China is conducted in this paper. Agriculture is the foundation of a country's national economy, and developed agriculture is the symbol of a country's modernization. The commercialization process of new crop varieties involves multiple links such as research and development of the new varieties, technology transfer, seed production, and seed marketing. This paper conducts the comprehensive analysis for the efficient models.

Keywords: Crop Breeding System; General Protection; New Plant Varieties, China; General Study

1. INTRODUCTION

Generally speaking, under the current agricultural model, the planting and processing methods of industrial raw materials such as biomass and bioenergy are the same as those of other crops. With the emergence of the biomass and bioenergy market, breeders will decide what crop varieties to adopt, the corresponding planting system and the environmental impact of that system. Unless breeders and policy makers give due consideration to the sustainability of new varieties and rural development, the profits from biomass or bioenergy, as with current commercial crop production, that will go entirely to landowners. Features of the seed production can be then summarized as the follow.

(1) The seed production industry pursues the maximization of benefits, while taking into account the interests of seed marketing companies and seed production farmers. Generally, the benefits of seed production enterprises are determined based on the interests of seed production farmers, and the price affordability of seed marketing companies.

(2) Seed production enterprises to then ensure the smooth implementation of seed production and task completion, are detailed in the development of seed production organization management rules and management methods, such as seed production base management methods of technical personnel, seed production base management methods, seed production base farmer organization management methods, etc.. The development and also implementation of these management methods, such as the effectiveness of the implementation of the seed production enterprises have then become the main indicators of the seed management department of the seed production enterprises to assess the enterprise.

With the mentioned ideas, we will study the details of the innovation of crop breeding system and protection of new plant varieties in China in next section.

2. THE PROPOSED IDEAS

2.1 The Overview of Chinese Agriculture

Agriculture is the foundation of a country's national economy, and developed agriculture is the symbol of a country's modernization. Sustainable agriculture, a term derived from sustainable development, represents a brand-new agricultural development and an important part of further implementing sustainable development strategies, and is attracting more and more attention in our country [1-4].

Development scale of China's agricultural industrialization is small, the level is low, and the competitiveness is not strong. At present, the coverage of agricultural industrialization operation covers more than 7.8 million households, which is less than 32% of the national total. The proportion of the agricultural product processing output value in the total agricultural output value is very low, and agriculture is not well developed to extend the industrial chain. According to the support for agricultural development in many countries around the world and the WTO regulations for supporting agricultural products, most countries have implemented different types of subsidies for their agriculture.

The intensity of subsidies directly affects the demand of the product market and indirectly affects the supply of the agricultural market. The intensity of agricultural subsidies in China is also increasing year by year. However, compared with the requirements of developed countries such as the United States and objective situation of China's agricultural development, there is still a big gap and there is a huge room for improvement.

2.2 The Crop Breeding System and Policy

The commercialization process of new crop varieties involves multiple links such as research and development of the new varieties, technology transfer, seed production, and seed marketing. The innovation chain is long and has a high degree of uncertainty. Transaction fees are high. For the convenience of analysis, this paper simplifies the commercialization of the new crop varieties as the transaction relationship between R&D institutions and seed industry institutions. The influence of other parties is included in the research on the contractual relationship between the two parties [5-7].

For example, the farmers' analysis of the adoption of the new varieties is attributed to the seed industry organization. Based on the related work, it can be studied from listed aspects.

(1) At the end of the key link in the seed production process that easily affects the quality of the seeds, the technician shall issue a quality inspection certificate to the seed production farmers according to the results of the inspection and also acceptance. certificate, clearing the male parent certificate, and drying certificate; tomato seed production should be

issued with a mixed certificate, a seed washing and soaking certificate, and a drying certificate.

(2) Through extensive introduction and collection of corresponding crop varieties at home and abroad, classification and sorting of various breeding materials (including progeny stable materials) accumulated over the years, and systematic identification of morphology, quality and resistance, the scope of parental utilization has been expanded as much as possible. Created better conditions for screening ideal parents and formulating hybrid combinations that meet the breeding goals.

2.3 The Protection of New Plant Varieties

The new plant variety protection system has effectively established the market position of new varieties, protected the rights and interests of breeding units and breeders, thereby promoting optimal allocation of scientific and technological resources, and excellent varieties can continue to emerge. Our country is a big agricultural country, and the protection of new plant variety rights is of great significance. First, more application of new plant variety resources can create higher output value and promote the development of the national economy. Secondly, the protection of new plant variety rights is also conducive to the sustainable development of wild and rare plants, and is conducive to enabling our country's new plant varieties to enter the international market and promote the development of international trade. Hence, we should consider the listed aspects.

(1) Germplasm resources are the basis of new plant glazes and the carriers of genes that control crop traits. From the perspective of germplasm resource utilization, crop breeding is actually a process of selection and combination of genes in crop germplasm resources. The cultivated new plant varieties still have new genetic characteristics and are new germplasm resources.

(2) Through conventional and modern breeding methods, various germplasm resources have been development and utilization of various germplasm resources, a large number of new materials have been created, including excellent, exceptionally shaped materials of different shapes, and also those that meet the requirements of varieties and become new varieties. All these can be called new germplasm resources.

3. CONCLUSION AND SUMMARY

Study on the innovation of the crop breeding system and protection of new plant varieties in China is conducted in this paper. New plant varieties are an important part of germplasm resources. Its particularity lies in that it can be directly applied in production and can exert huge economic and social benefits. This paper gives the novel ideas and in the future, the core applications will be considered.

4. REFERENCES

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