

Organic Rice Planting Technology based on Biological Control

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Keywords: Organic rice, Basic conditions, Planting technology

Abstract: China has very superior natural conditions, which can meet the conditions required for rice growth. Therefore, organic rice has a very wide sowing area in China. With the continuous improvement of people's daily living standards, people's pursuit of healthy life is increasing, and people's pursuit of natural ecological food is becoming more and more prominent. Organic rice is formed in this situation. According to the natural growth law, organic rice is a safe and green ecological food produced by using advanced sustainable agricultural technology without using pesticides, chemical fertilizers and other substances, so as to maximize the social and economic benefits. On the basis of meeting people's daily growing needs for healthy life, Promote the inherent planting mode to cause less and less damage to the natural ecological environment, promote the significant increase of producer income, and promote the healthy and sustainable development of agriculture in China.

1. Introduction

With the rapid development of China's economy and the improvement of people's living standards. In addition, in recent years, food safety problems emerge one after another. People begin to pay attention to food safety and put forward higher requirements for it. Organic rice is gradually favored as a safe food. In order to improve the quality of organic rice and provide people with safer food, this paper mainly discusses the planting technology of organic rice for reference.

2. Concept of Organic Agriculture, Organic Food and Organic Rice Planting

2.1 Concept of Organic Agriculture

Organic agriculture is a new agricultural production mode that produces according to the specified organic agricultural production criteria. It is named because it does not use chemical fertilizers, pesticides, growth agents, additives and other substances containing chemical components, nor does it use genetically modified products and their related organisms. It has the characteristics of not destroying natural laws and original ecology, balancing aquaculture and planting in agricultural production. Organic agriculture is a kind of sustainable agriculture, which can be proved by its three basic principles: health, ecology, care and fairness^[1].

2.2 Concept of Organic Food

Organic food is a certified environment-friendly and safe agricultural and sideline product, which can also be called ecological food and biological food. It comes from the production system of organic agriculture and is processed according to the production requirements and corresponding standards of organic agriculture^[2].

2.3 Concept of Organic Rice Planting

Organic rice is the main category of organic food. Its planting and production refers to the use of beneficial substances generated by the cycle between organisms to enhance the ability of rice itself and artificially create natural ecological conditions suitable for rice growth. Compared with ordinary rice, organic rice has the characteristics of excellent genetic ability and strong ability to resist the harsh environment. It is an agricultural product that people trust very much^[3].

3. Basic Conditions for Organic Rice Planting

First, in the early stage of planting organic rice, it is necessary to do a good job in the scientific and systematic management of the soil. In order to provide a high-quality production atmosphere for the planting of organic rice, straw returning technology is usually used to apply some organic fertilizer, biological bacteria fertilizer, etc. in the soil. At the same time, deep and shallow tillage measures are used to implement activation treatment for the soil layer, Can promote the healthy and rapid growth of organic rice in a suitable environment. Second, in nutrient management, organic rice is a very key component. In order to maintain the nutrients contained in rice for a long time, it is necessary to follow the changes of actual demand and objective law to scientifically transport the fertilizer required by rice. In this case, organic fertilizer and biological bacterial fertilizer need to be regarded as the basic fertilizer in fertilizer management. At the same time, fertilization operation should be carried out according to the actual situation, and fertilizer should be added for the fertilizer on the leaf surface^[4]. Organic rice needs different nutrients at different times. It is necessary to keep its growth nutrients in the best state. Third, plant protection. In the early stage of organic rice sowing, rice seeds need to be soaked in organic biological agents, which is very helpful to reduce the emergence stage and prevent the formation of diseases. In the process of rice growth, when diseases appear, correct and reasonable biological pesticides can be selected according to the actual situation to make scientific and targeted treatment of the diseases. When removing weeds in the field, chemical agents can not be used to prevent varying degrees of damage to seedlings. Therefore, we can use the method of artificial weed control to remove weeds in the field.

4. Organic Rice Planting Technology

4.1 Selection of Rice Varieties

In the process of planting organic rice, the selection of varieties is very important. Rice seeds must be strictly screened. In order to ensure the germination rate of rice seeds, it is necessary to select seeds with full and tidy particles, no pests and health, and remove impurities during selection, so as to ensure the efficient growth of rice^[5]. Because the growth process of organic rice is easily affected by many external factors, such as weather and climate, when selecting rice varieties, we should select seeds with strong adaptability, good stability and cold resistance, have certain advantages in disease resistance, and ensure moderate maturity, so as to ensure the healthy growth of organic rice.

4.2 Selection of Rice Planting Land

The selection of organic rice planting land shall comply with the relevant national standards, the soil environment shall comply with the national class I standard GB15618-1995, the air conditions shall comply with the national class I quality standard, and the water quality shall comply with the class III standard of surface water environment gb5084-92. These three are the best planting places. It can be seen that the selection of organic rice planting plots plays a very important role in its growth process. Generally, the soil with high fertility is selected, which is convenient for drainage and irrigation^[6]. At the same time, a certain barrier should be reserved with other plots. The surrounding contaminated plots are not suitable for planting organic rice, and the planting of organic rice on such plots shall be strictly prohibited.

4.3 Seedling Raising and Sowing of Organic Rice

Before sowing rice, it must go through strict standards for seed drying and salt water seed selection, soak it with quicklime in proportion to eliminate the bacteria in the seeds, and then do a good job in seedling raising according to the standards. When sowing organic rice, it is necessary to prepare the land in advance, do a good job in irrigation in advance and weed removal. It is necessary to select a sunny and mild weather for sowing, so as not to affect the germination rate of rice. In addition, transplanting can be carried out when the temperature is stable above 12 °C. The density of transplanting shall be controlled within the appropriate range according to different factors such as variety characteristics, soil conditions of planting land and climate. It is required to be shallow, straight, uniform, stable and sufficient to ensure the quality of seedlings.

4.4 Rice Seedling Management

When the rice sowing is completed, the rice seedling field should be managed in time, and scientific and reasonable water regulation and temperature control should be carried out to promote the healthy growth of seedlings. Generally speaking, the critical temperature of seedlings is 12 °C for rice roots and 15 °C for rice leaves. When the seedlings appear at this temperature, they will stop growing. 22 °C ~ 25 °C is the more suitable temperature for seedling growth. Only when the stable temperature and humidity standards are met can the seedlings grow healthily, have high dry matter weight and fullness, and meet the growth needs. To make scientific water supplement for the growth of seedlings in different periods, we must pour enough and thoroughly. In addition, in the process of seedling raising, attention should be paid to the occurrence of low temperature and freezing injury^[7]. In case of high temperature or strong wind, corresponding shading and ventilation measures should be taken in time.

4.5 Rice Fertilization

There are also strict requirements for fertilization of organic rice. Generally speaking, the fertilizers used in organic rice are divided into biological fertilizer and organic fertilizer. Certain non chemical fertilizers can be applied before transplanting to avoid the phenomenon of fertilizer accumulation and burning seedlings in future fertilization, and then organic fertilizer can be applied after sowing to improve the emergence rate and survival probability of seedlings, and topdressing shall be carried out at different stages of rice growth. For organic rice, enough high-quality base fertilizer shall be applied, and a small amount of fertilizer shall be applied several times each time, Meet the nutrient demand to ensure the vigorous growth of seedlings.

4.6 Pest Control

The main diseases and pests of rice include rice leaf roller, rice planthopper, sheath blight, rice blast, stripe leaf blight, cachexia, etc. We should adhere to the principle of prevention first and comprehensive prevention and control, give priority to agricultural prevention and control, physical prevention and biological prevention and control, and cooperate with the scientific and rational use of chemical agents. In terms of agricultural control, select varieties with strong disease resistance, rotate regularly, and adopt agronomic measures such as reasonable farming and crop rotation, combination of planting and breeding, fitness cultivation, etc. to reduce the occurrence of diseases and pests; In biological control, select pesticide varieties with low toxicity to natural enemies or avoid the period sensitive to natural enemies, protect natural enemies and use natural enemies to control diseases and pests; In physical control, black light lamp, vibration frequency insecticidal lamp, color light board and other physical devices are used to trap and kill pests^[8].

5. Conclusion

Organic rice does not use chemically synthesized pesticides, chemical fertilizers, growth regulators and other substances, but follows natural laws and ecological principles, adopts a series of sustainable agricultural technologies, and maintains a sustainable and stable agricultural growth process. Organic rice production focuses on the overall strategy of improving the soil fertility system, promoting rice fitness cultivation, and ensuring the implementation of comprehensive agricultural control to achieve stable and high yield of crops.

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