

## 論文の内容の要旨

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論文題目 A Study on Production, Consumption, and Policy of High-Value Japonica Rice in China  
(中国における高付加価値ジャポニカ米の需給と政策に関する研究)

This research examines the status of high-value Japonica rice with respect to production, consumption, and policy in China to promote the development of the high-value Japonica rice industry. This research contains 8 chapters. Chapter 1 introduces the background, problems, research questions, and structure and contents of this research. For a long time, rice is the most important staple food in China. Ensuring food security has been the top priority of the Chinese government for the past thirty years. Policy plays an important role in guiding the development of the rice industry. Although Chinese rice policy has been dedicated to supply-side reforms for a long time, most of these reforms are focused on ensuring the quantity of rice supply, resulting in concerns about quality. As regards the demand side, the focus of the consumption structure has shifted from quantity to quality. This has given rise to an inconsistency between production and consumption in the rice industry.

After reviewing the literature on the profitability of rice farming, high-value agricultural product consumption, and subsidy policy in Chapter 2, this research seeks to address the following three questions: What are the costs and benefits of high-value Japonica rice production and the impact of contract farming on high-value Japonica rice farmers' income? What are the characteristics of high-value Japonica rice consumers and what kind of factors influence purchasing behavior for organic rice? What are the potential subsidy policies for high-value agriculture that can be implemented to promote the development of the high-value Japonica rice industry? To answer these research questions, thorough investigation and analysis based on the three aspects of production, consumption, and policy are conducted in chapters 4, 5, and chapter 6, respectively.

As there is no unified national data on Japonica rice supply, Chapter 3 attempts to estimate the Japonica rice supply in the past twenty years based on a descriptive analysis of rice supply and demand in China. This chapter also analyzes the rice production in Heilongjiang province, which is the fastest-growing province in China, based on a descriptive analysis of macroeconomic data. Policies, in particular floor price and subsidy policies, have a great impact on rice supply and demand. Despite some fluctuations, the demand and supply of Japonica rice have been growing continually for the past twenty years.

Chapter 4 examines the current status of Japonica rice production by analyzing the costs and benefits of conventional Japonica rice production, the cost structure of Heilongjiang and Jiangsu Japonica rice. The results demonstrate that although total incomes have increased in the past three decades, rice farmers face issues of decreasing profits and increasing input costs. Under these circumstances, this research analyzes the costs and benefits of high-value Japonica rice production, the revenue effects of rice contract farming on small high-value rice farmers, and the constraints on the adoption of contract farming in China. A face-to-face household survey questionnaire was used as the main method of collecting data. Then, descriptive analysis and probit model and ordinary least squares regression (OLS) analyses were applied to the collected data. A total of 78 household questionnaires collected in Wuchang, Heilongjiang province were considered valid for the analysis. The probit model and OLS regression analyses were used to estimate the likelihood of participation in contract farming and the impact of contract farming on rice farmers' income, respectively. The results demonstrate that Wuchang rice, which is a type of representative branded rice, is the most profitable rice at the city, provincial, and national levels because of its higher farm gate price and the cost-to-profit ratio of rice. The results also show that participating in contract farming is an effective way of increasing rice farmers' income, after controlling for observable and unobservable household characteristics. Specifically, contract farming contributes toward enhancing the farm gate price and the cost-profit ratio of rice. The results also reveal that rice farmers with organic or green planting experience are more likely to participate in contract farming.

To understand consumer preferences for high-value rice, Chapter 5 includes two parts. First, it examines how demographics, attitudes, product attributes, and regional factors affect high-value Japonica rice

consumption. Respondents who only consumed Japonica rice as their staple food accounted for 492 questionnaires, out of which 150, 187, and 155 responses came from inland, coastal, and northern regions of China, respectively. Ordinal logit regression and multinomial logistic regression are applied to analyze the survey data on high-value Japonica rice consumption by dividing daily Japonica rice purchase price into four categories. The results indicate that education, household income, environment, health, and regional factors have a positive impact on high-value Japonica rice consumption, while consumer attitude towards price has a negative impact. Further consumers from inland areas prefer to consume high-value Japonica rice.

Second, this chapter takes organic rice as an example to examine how awareness, knowledge, and attitudes of Chinese consumers influence their purchasing behavior for organic rice. The aim is to determine the presence of regional differences in these factors and the resulting behavior of consumers and provide producers in the organic rice industry with sufficient information to help them expand their market share and improve profitability. Respondents answered a total of 1,371 questionnaires, out of which 406, 539, and 426 responses came from inland, coastal, and northern regions of China, respectively. A binary logit regression is applied to analyze the survey data and predict purchasing behavior at the regional and national levels. The results indicate that consumer awareness, product certification, and product availability have a positive impact on the likelihood of purchasing organic rice, but price has a negative relationship with organic rice consumption. Furthermore, consumers from the northern region are more likely to buy organic rice than those in inland and coastal regions. In particular, awareness and knowledge factors have a greater influence on purchasing behavior of consumers in the northern region.

Chapter 6 analyzes how organic agriculture subsidy policy could contribute to the development of the high-value rice industry. After reviewing the current rice subsidy policy, the current status of subsidy policy for organic agriculture in China, German, and the United States are compared in this chapter. The results show that Chinese organic farming has been growing dramatically since 2007 and this is closely linked to consumers' perception of organic food being safe and healthy. However, unlike Europe and the US, environment-friendly agriculture is not considered the starting point of organic farming in China. After

several decades of development, Germany and the United States have already developed a mature support system for organic farming. Specifically, Germany is focusing on producers' interest, while the United States is focusing on the promotion of price marketization. China, which does not have systematic subsidy policy, needs to seriously review the current status of organic farming. The results suggest that the government should establish subsidy schemes for all producers, enhance propaganda and education for producers and consumers, and emphasize scientific research and data collection.

Chapter 7 and Chapter 8 discuss the possible answers to the three research questions based on the analysis, and summarizes the main results and presents the limitations and future directions of the study, respectively. High-value Japonica rice has been proven to be one of the most effective sources of increase in the income of rice farmers. If its cultivation is done through contract farming model, the income of rice farmers can be further increased, while maintaining both quantity and quality. High education and high levels of household income of consumers increases the likelihood of purchasing high-value Japonica rice. Attitudes and regional factors influence high-value Japonica rice consumption. These results should help producers meet the needs of the consumers. Implementing a policy for high-value agriculture could be considered a very important step towards promoting high-value rice policy.

This research only investigates certain factors that influence high-value rice consumption. As it is difficult to cover all potential influencing factors, the results of this study are limited to the selected factors. Although this study is mainly focused on the impact of participating in contract farming, given the rapid development of people's living standards and increasing environmental awareness, future research should consider how organic and green rice planting could help improve rice farmers' income.