

Grianggrai Tubtong 2010: The Comparison of Technical Efficiency between New Glutinous Rice and Traditional Glutinous Rice Production in Nong Khai Province. Master of Science (Agricultural Economics), Major Field: Agricultural Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Ms. Orachos Napasintuwong, Ph.D. 139 pages.

The Rice productivity in Thailand, especially in North Eastern of the country, is relatively lower than other Southeast Asian countries. It could be a result of drought and water scarcity. Drought-tolerant rice variety is among important factors to improve the production efficiency in a drought-prone area. New glutinous rice variety, RD 12, is not only a suitable variety in highland and shorted-rain areas but also has a higher yield, compared with other traditional glutinous rice varieties such as Hang-Yi 71. However, there has been no study to maximize the production efficiency of the new and the traditional glutinous rice varieties in the drought-prone area. This study investigates the technical efficiency of the new glutinous rice, RD 12, compared with the traditional glutinous rice, Hang-Yi 71, production in Nong Khai province, where RD 12 has been promoted from Nong Khai Rice Research Center during 2007/2008 crop years. It also identifies factors contributing to the inefficiency in rice production

This study adopted the Stochastic production Frontier technique to analyze the technical inefficiency. The results from estimated production function show that seed, fertilizer, labor use and rice varieties (RD 12 or Hang-Yi 71) are related to rice products. The estimates of technical efficiency find that farmers who grow new glutinous rice have a lower technical efficiency than those who grow traditional glutinous rice, 55% and 79%, respectively. Hence, there is still possibility to raise the production efficiency of both varieties. The factors that can increase the technical efficiency of RD 12 production include farm experience, training, proportion of rice kept for household consumption, and seed samples from public research centers. However insufficient water contributes to higher inefficiency. On the other hand, factors that can improve the technical efficiency of Hang-Yi 71 are farm experience, highland area, and seed samples from public research centers, but over water supply will increase the technical inefficiency. Only the development of new varieties will not be enough to increase the efficiency in rice production. The government should provide technology transfer knowledge such as appropriate resource allocation and specific characteristics of the new varieties so that farmers could learn to adopt appropriate technology. Moreover, farmers who have higher production efficiency could help improving others production efficiency by transferring their knowledge to those who have lower production efficiency.

---

Student's signature

---

Thesis Advisor's signature