

# Financial Efficiency of Nam Roi Pomelo Planting Models under Vietgap Standards in Binh Minh Town, Vinh Long Province

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## ABSTRACT

The study aims to evaluate the financial efficiency of Nam Roi pomelo farmers in Binh Minh Town, Vinh Long Province. Direct interviews were used to survey 70 households (35 households planting pomelos with traditional methods and the other 35 follow VietGAP standards) in My Hoa and Dong Thanh Commune. The Financial ratio analysis and the Independent Samples T-Test were applied in the study. The research results show that, although the resources are limited, Nam Roi pomelo farmers have applied technical advances in their cultivation process to improve productivity and raise their incomes. All financial ratios about the production efficiency of Nam Roi pomelo farmers following VietGAP standards are better than those of traditional pomelo farmers. This concludes that the application of technical advances in pomelo production has brought higher economic benefits for farmers.

**KEYWORDS:** financial efficiency, Nam Roi pomelo, farmer, Binh Minh Town

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## 1. INTRODUCTION

By 2019, the Nam Roi pomelo planted area of Binh Minh Town (Vinh Long Province) reaches 2,000 ha, mainly concentrated in My Hoa and Dong Thanh Commune. Annually, the town provides 24,000 tons of pomelos to the market. Binh Minh Town is a favorable land for Nam Roi pomelo to grow well, thereby it becomes a large-scale pomelo-growing region. In recent years, to support the development of Nam Roi pomelos, investment support projects have focused on improving value, quality, and efficiency towards sustainability. Especially, support programs on branding and safety standards (GlobalGAP and VietGAP standards) have brought positive results. However, the development of Nam Roi pomelos of the town is not commensurate with the potentials and advantages of the product, lack the linkage between production and consumption along the value chain. At the same time, difficulties in registration cost, recording, and strict procedures, etc. have caused many pomelo farmers not interested in applying VietGAP standards. This study was conducted to evaluate the financial efficiency of Nam Roi pomelo production models according to VietGAP standards. The objective of the study is to confirm the efficiency of advanced production models and orient for Nam Roi pomelo farmers to achieve higher results in the future.

## 2. METHODOLOGY

### 2.1. Research data

Stratified random sampling was adopted to collect data. The criteria include geographical location, farming scale, and type

of cultivation. The sample size depends on the estimation methods in the study and different perspectives (Ho, 2012). The study directly interviewed 70 households planting Nam Roi pomelos in My Hoa and Dong Thanh Commune located in Binh Minh Town. Among them, 35 farming households grow Nam Roi pomelos with traditional methods, the other 35 follow VietGAP standards.

### 2.2. Analytical methods

In this study, descriptive statistics were used to analyze the manufacturing resources of Nam Roi pomelo farmers. Besides, the financial ratio analysis was applied to evaluate the financial efficiency of farmers through several criteria such as total cost, revenue, profit, and profit margin. The Independent Samples T-Test was concluded in this study to assess and compare the financial efficiency of the two Nam Roi pomelo planting models (traditional models and VietGAP models).

## 3. RESEARCH RESULTS AND DISCUSSIONS

### 3.1. Manufacturing resources of farmers

According to the survey results, the average age of farmers growing Nam Roi pomelos is 46 years old. Years of experience in growing pomelos are 15 years on average, the highest is 40 years and the lowest is 5 years. This has confirmed that Nam Roi pomelo is one of the traditional crops and it has grown with farmers in Binh Minh town or a long time. The average area of agricultural land used for growing pomelos is 8,000 m<sup>2</sup>, indicating that the production scale of farming households is still limited. In which, the production areas of farmers using

VietGAP models are twice more than those of traditional models. The number of employees directly involved in pomelo production accounts for about 50% of the household population. In particular, the number of employees directly plant pomelos under VietGAP standards is higher than those who follow traditional methods. The education level of pomelo farmers is quite low with the average grade is 7, there are still illiterate farmers. However, farmers who plant pomelos under VietGAP standards have higher education

levels than those who grow pomelos using traditional methods.

### 3.2. Differences in production cost between two Nam Roi pomelo planting models

Differences in manufacturing methods are the reason for different cost structures of Nam Roi pomelo production between traditional households and VietGAP producers.

**Table 1: Comparison of production costs between the two models**

Cost structure	Traditional model	VietGAP model	Difference	Significance level
Fertilizer cost	6,728,255	5,434,580	1,293,675	***
Pesticide cost	322,054	140,705	181,349	***
Fuel cost	744,122	823,544	-79,422	**
Labor cost	5,825,245	5,415,682	409,563	**
Depreciated cost	628,680	566,484	62,196	Ns
Other	850,548	822,560	27,988	Ns
<b>Total cost</b>	<b>15,098,904</b>	<b>13,203,555</b>	<b>1,895,349</b>	<b>***</b>

Note: \*\*\*: Significant at 1%; \*\*: significant at 5%; ns: not significant.

Base on Table 1, there are differences in fertilizer cost, pesticide cost, labor cost, and fuel cost between farmers who follow traditional farming and VietGAP standards. These are expenses that account for large proportions in the production process. If fertilizer and pesticide are used appropriately, it helps save money and bring higher production efficiency. The field survey showed that farmers applying VietGAP models reduce a significant amount of fertilizer for the planting areas of pomelos by strict procedures of VietGAP to minimize the amount of chemical that exists in pomelos; as well as to meet purchasers' requirements and technical requirements of export activities. In addition to this, farmers following VietGAP standards have to apply the integrated pest management on planting areas and meet several food hygiene and safety requirements, which limits the use of agro-pharmaceuticals. Therefore, farmers applying VietGAP standards save about 1,293,675 VND/1,000m<sup>2</sup> of fertilizer cost and 181,349 VND/1,000m<sup>2</sup> of pesticide cost. In contrast, traditional farming households use fertilizers and pesticides habitually. Although pests and diseases have not caused great impacts, farmers have intervened with chemicals in high doses. Also, there is a difference in fuel costs in the two production models. Fuel costs in VietGAP-applying households are higher than traditional farming households (an amount of 79,422 VND/1,000m<sup>2</sup>). The fuel cost mainly includes the cost of using petrol and electricity to operate irrigation and spraying tools. VietGAP producers have to water the trees by their growth process and focus on caring and irrigation, so the cost used is higher than traditional farming households.

### 3.3. Compare the economic efficiency between two Nam Roi pomelo planting models

According to the testing result, all financial ratios showing the production efficiency of VietGAP farmers are better than those of traditional farmers. This points out that the application of technical advances in pomelo production has brought higher economic benefits for farmers. Specifically, the total cost of Nam Roi pomelo farmers under VietGAP models is lower than that of traditional farmers, while the productivity, price, and revenue of VietGAP farmers are all higher than farmers by traditional methods. As a result, the proportion of profit/cost, profit/revenue, and revenue/cost of VietGAP farmers are much higher than those of traditional pomelo farmers.

**Table 2: Comparison of economic efficiency between two Nam Roi pomelo planting models**

Financial ratios	Traditional model	VietGAP model	Difference	Significant level
Total cost	15,098,904	13,203,555	1,895,349	***
Price (VND/kg)	13,554	14,165	-611	**
Revenue (VND/1000m <sup>2</sup> )	52,115,130	64,734,050	-12,618,920	***
Productivity (kg/1000m <sup>2</sup> )	3,845	4,570	-725	**
Profit (VND/1000m <sup>2</sup> )	37,016,226	51,530,495	-14,514,269	***
Profit/cost (time)	2.452	3.903	-1.451	***
Profit/revenue (time)	0.710	0.796	-0.086	***
Revenue/cost (time)	3.452	4.903	-1.451	***

Note: \*\*\*: significant at 1%; \*\*: significant at 5%.

Meeting the VietGAP standards, Nam Roi pomelos can penetrate fastidious markets. Therefore, the added value of Nam Roi pomelos is improved and the investment efficiency of pomelo farmers under VietGAP standards is relatively high.

#### 4. CONCLUSION AND RECOMMENDATIONS

Overall, Nam Roi pomelos have brought a significant high source of income, created jobs for local unskilled workers. Despite limited resources, Nam Roi pomelo farmers have learned and applied technical advances in the cultivation process, thereby increasing productivity and rising incomes. Based on these findings, some solutions are proposed to improve the production efficiency of Nam Roi pomelo farmers. Firstly, farmers should update technical information and flexibly apply technical advances into production processes. In particular, VietGAP standards should be taken into consideration to improve product quality and productivity of pomelos. Secondly, farmers need to improve the allocation of input resources, especially pay attention to the optimal use of labor resources to save production costs and achieve benefits. Thirdly, improve market accessibility, diversify sources of market

information, and diversify output markets to eliminate market risks due to lack of information.

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