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Cost and Return on Investment of in Season Cropping and Off-Season Cropping of Mangosteen, The Economic Fruit Crop in Nakhon Si Thammarat

Suwisa Chaisuwan[*], Sugalya Preecha, Unchalee Sondee Punwajee Junnim and Chaloemkiat Ranglek

Department of Accounting, Faculty of Management Technology, Rajamangala University of Technology Srivijaya, Nakhon Si Thammarat Campus, 80110 Thailand.

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Mangosteen, economic fruit crop in Nakhon Si Thammarat Thailand can be produced both in season and off- season. Research on cost and return on investment of in season cropping and off-season cropping of mangosteen, economic fruit crop in Nakhon Si Thammarat was done to survey general economic and social aspects; and compare the financial cost and return between season cropping and off-season cropping of mangosteen. The data was collected from 15 sampled farmers of each both population. The result showed that the most farmer was male. The most of them were the older than 60 years. For education level, the major of them were primary school. The most of farmers grow mangosteen "local cultivar" The financial analysis revealed that the cost in season production was 55,415.83 USD/hectare which conducted the fixed cost of 780.23 USD/hectare (1.41%) and the variable cost of 54,635.60 USD/hectare (98.59%). The income was 128,121.38 USD/hectare with net profit 72,705.55 USD/hectare. Net profit to cost ratio was 131.20%, net profit to sales ratio was 56.75%. While the cost of off -season production was higher than on season production of 57,904.22 USD/hectare which the fixed cost of 812.74 USD/hectare (1.40%) and the variable cost of 57,091.47 USD/hectare (98.60%) The income was also higher 244,173.26 USD/hectare with net profit 186,269.04 USD/hectare. Net profit to cost ratio was 321.68%, while net profit to sales ratio was 76.29%.

Keywords: cost and return, income, in season cropping, off-season cropping

Introduction

Thailand is the plenty on productivity natural resource, diversity of living especially more endogenous plant variety also variation of climate and geography to support our cropping all the part of Thailand and thorough the year. Tropical fruit is one of the most popular amazing over the Asian country. Lychee, longan, mango, rambutan, pummelo as well as the king and queen of fruit, durian and

[*] **Coressponding Author:** Suwisa Chaisuwan. **E-mail :** suwisa52@gmail.com

mangosteen were the bent mark products from Thailand called Bangkok fruits. Fruits income was 200 million USD a year (Agricultural Statistic of Thailand, 2016). Nakhon Si Thammarat, southern part is dominant tropical fruit growing area in Thailand. Although more of produces were exported, however over supply in the market consequent of the same period harvested due to the low price still be the main problem of farmers. It effected to the farmers received low income to reduce growing area by re-growing oil palm and rubber tree. The problem of oversupply initiated several farmers in this area developed and adopted the new technology and cropping system to produce off-season. Off-season production also need more intensive practice, input, more technology, knowledge, and experience. To produce product off-season should understand, adapt, and improve their ability for cost management, cropping management to produce good quality for the satisfaction of consumer both in domestic and exporting market. Tropical Fruit Crop and Tree Research Center, Department of Plant Science, Faculty of Agriculture, Rajamangala University of Technology Srivijaya (Saiyai), Nakhon Si Thammarat, Thailand is the one of academic institute supporting technology and knowledge to those farms. This research was conducted to assess cost and return of mangosteen product in season and off-season cropping of farmers in Nakhon Si Thammarat. The result will benefit to develop of quantity and quality mangosteen and to make decision to produce in season or off-season.

Materials and methods

Population and Sample

This research was selected the farmers at mangosteen growing area in Nakhon Si Thammarat, Thailand for data collection by specific sampling technique. The data was collected from 15 sampled farmers of each both population from in season or off-season.

Research tool

Questionnaire was conducted to collect data with 2 parts included: part1, question related to general aspect of social and economic data; and part 2, question was conducted to collect data about cost and return of mangosteen product in season and off-season.

Data collection

Primary data was collected by interviewing 15 farmers sampling of each group as mention above. For the secondary data was collected from thesis, research report and data collected by institute/department which related work on farmers

Data analysis

Financial analysis of cost and return to compare between in season and off-season of magosteen cropping including cost of production, fixed cost, variable cost, income, net profit, net profit to cost ratio and net profit to sales ratio.

Results

Part1

Social and economic data collect from farmer was analysis. The result informed that the major of farmers growing mangosteen were the old age older than 60 years. Education background, the major of them were primary school.

Part2

Financial analysis of cost and return of in season and off-season Mangosteen cropping, Financial analysis indicated that income and profit from off-season higher than in season cropping. The cost of production of in season cropping was 55,415.83 USD/hectare. When conducted the fixed cost was 780.23 USD/hectare (1.41%) and the variable cost of 54,635.60 USD /hectare (98.59). The income was 128,121.38 USD /hectare with net profit 72,705.55 USD /hectare. Net profit to cost ratio was 131.20 % net profit to sales ratio was 56.75 %. While the cost of off-season production was higher than in season production of 57,904.22 USD /hectare which the fixed cost of 812.74 USD /hectare (1.40%) and the variable cost of 57,091.47USD /hectare (98.60 %). The income was also higher of 244,173.26 USD /hectare with net profit 186,269.04 USD /hectare and net profit to cost ratio was 321.68 % while net profit to sales ratio was 76.29% (Table 1).

Table 1. Comparison cost and income on mangosteen in season and off-season production in Nakhon Sri Thammarat. (per hectare/year)

	In season		Off-season	
	USD/hectare	**%**	**SD/hectare**	**%**
Income	128,121.38		244,173.26	
Production cost				
1. Variable cost				
1.1 Soil Preparation	850.55	1.53	907.25	1.57
1.2 Seedling	151.21	0.27	151.21	0.26
1.3 Labor cost				
- Planting	94.51	0.17	75.60	0.13
- Apply Fertilizer	5,764.81	10.40	5,859.32	10.12
- Weeding	-	-	349.67	0.60
- Prunning	10,962.59	19.78	10,962.59	18.93
- Harvesting	17,105.42	30.87	17,388.94	30.03
- Mowing	6,804.37	12.28	6,804.37	11.75
1.4 Chemical Fertilizer	9,469.41	17.09	11,548.52	19.95
1.5 Organic Fertilizer	1,512.08	2.73	793.84	1.37
1.6 Pesticides	-	-	1,096.26	1.89
1.7 Fuel	1,139.42	2.06	340.22	0.59
1.8 Repair Fee	781.23	1.41	813.69	1.41
Total variable cost	54,635.60	98.59	57,091.48	98.60
2. Fixed cost				
2.1 Property tax	18.90	0.03	18.90	0.03
2.2 Equipment depreciation	761.33	1.38	793.84	1.37
Total Fixed cost	780.23	1.41	812.74	1.40
Total Production cost	55,415.83	100.00	57,904.22	100.00
Net profit	72,705.55		186,269.04	
Net profit to cost ratio		131.20		321.68
Net profit to sales ratio		56.75		76.29

Discussion

Financial analysis of cost and return on mangosteen production in Nakhon Si Thammarat convinced that the farmers produced off-season spend higher cost than in season since it needed intensive practice and more input factor for better quality and marketing acceptable. However, net profit to cost ratio and net profit to sales ratio were 321.68 and 76.29% respectively It was higher than in season cropping of 131.20 and 56.75 % respectively (Table 1). This financial report was similar to rambutan cropping which has been reported by Preecha *et al.* (2016) and rambutan, durian and mangosteen reported by Na Nakhon *et al*. (2014). Financial analysis of cost and return of this research could be concluded that off season production gave higher income than in season. It should be convinced more farmers change from in season to off-season production.

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