

Lotanbar Chili Farming Analysis in Support of A New Superior Cultivar from The District of Limapuluh Kota

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Abstract— “Lotanbar” is a curly chilli, produced by mass selection and done by a farmer from Mungka Sub-district, The district of Limapuluh Kota, Province of West Sumatera. It has the number of fruits more than one on some nodus. This uniqueness gives an opportunity to assemble a new superior cultivar with number of fruit more through the plant breeding program in order to obtain higher yield harvest. In chilli farming, income and cost analysis of it are one of the important things in determining the attitude of farmers to do cultivation. As a new cultivar candidate, Lotanbar chili need to be analyzed how this chili business seen from the aspect of its economy. The purposes of this research were to describe the technical culture, analyze the amount of incomes and profits, and also calculate R/C ratio on Lotanbar chili farmers. This research was conducted April 15th to May 2014 at Simpang Tigo farmers group at Jorong Talang, Nagari Talang Maua, sub-district of Mungka, The district of Limapuluh Kota. It used descriptive research with approach case studies with ten farmers as respondents. Then, the result showed that farmers didn't prepare seedlings in the seedbed but directly planted seeds in their farm. Therefore, harvesting can be done earlier as compared to using the seedlings. The average farmer's land ownership amounted to 0.10 Ha. Moreover, from these areas, they got around 1.410,30 kg of the yield or 15.619,68 kg per Ha. Thus, the average income of farmers lotanbar chili in one growing season fare of 25.256.900,00/land area or Rp. 286.722.257,28 per Ha. The average profit was Rp. 24.104.815,57/land area or Rp. 273.381.482,57 per Ha. Analysis of this condition, its R/C Ratio was 4,42 per Ha.

Keywords— farming analysis, income, profit, R/C ratio.

I. INTRODUCTION

One of the products horticulture very had much cache by society west sumatera is red chili (*Capsicum annum L.*). Generally, chilli consumed in the form of cooking tillable together with other kinds of drinks. The womb capsaicinnya is regarded as one adder appetite for most masyarakat. [3] noted that fruit containing chilli besides capsaicin, flavonoid, and containing proteins fat carbohydrates calcium phosphorus, iron (vitamin a c, and b1) and essential oils.

Important commodities including Chili to the attention of the Government most notably by including in it the Bank Indonesia considering Chili can affect the lives of farmers, the economy and the macro level of inflation. Price fluctuations of chili on the market a very significant contributions in determining the inflation in West Sumatera. This is due to the consumption of red pepper of West Sumatera are high. Fresh chilli because demand generally for high household consumption. In tune with it, West Sumatera also includes producing the largest curling chili in Indonesia.

West Sumatra Province chili production reached 65.108 tons with an area of hectares with productivity 7,94 tons/ha[2].

Many cultivars are developed to be a variety in West Sumatra. The local origin of the varieties of West Sumatra has been released through the Minister of agriculture as a superior varieties to be developed, namely Chili Kopay of Payakumbuh, which has the advantage of its length.

In addition, there is one local variety in the process of proposing release, namely Chili Lotanbar from District of Limapuluh Kota. Lotanbar is a local chili peppers that have uniqueness compared to regular Chili, which is the fruit of more than one even reaching five on its dicotomus. Some of the node after dicotomus also produces the fruit of more than one [1].

As a new varieties candidate, Lotanbar has a slightly different cultivation with Chili in General. Usually seed are sown for approximately 4-6 weeks and moved into the land . In contrast to the usual red chili farming, seeds of Lotanbar sown directly in the planting hole. In the beginning, the seeds covered with aqua plastic cups. It aims to reduce

transpiration in field and also prevents direct contact with the pest.

The uniqueness and differences in culture of lotanbar will give a technical impact on the resulting production, where production can be increased and the income of farmers is expected to ultimately will also increase. As a new variety candidate,, chilli Lotanbar analysis needs to be done technically, economically and socially. To encourage the spirit of farmers, it was necessary to analiza the cost farming and income. Analysis of the income of farming describes the present situation to the circumstances that will come from business activities and planning of actions for a farmer. Analysis of income also provide help to illustrate the success of usahataninya. Farmers ' income levels are generally influenced by the amount of production, sale price, and the costs incurred by farmers in pursuit of his farm [6].

The objective of this study were to describe of Lotanbar cultivation and analyze income, profit, and R/C ratio of Lotanbar Chilli farming

II. MATERIALS AND METHODS

This research was carried out in April-May 2014 at Simpang Tigo farmers group at Jorong Talang, Mungka sub-district, the district of Limapuluh Kota. Location of this reserach was only at Jorong Talang because mostly farmer from this area who planting Lotanbar.

This research is descriptive research with approach case studies. The number of respondents are 10 farmers. Data collected consists of qualitative and quantitative data are sourced from the primary and secondary data. Primary Data obtained through direct interviews with farmers using questionnaire respondents. [7] describing the activities of the interview are searching for material (information, opinions) through oral questioning with anyone who needed it.

Primary data which was collected from the farmer included : (1) farmer characterize (name, age, gender, education, insurance, land size and land ownership); (2) cultivation (land preparing, planting, plant maintainance, plant protection and harvesting); (3) using of production factors : seed, fertilizer, pesticide (kind of, dosage, time application, usage), and equipment and (4) Total production cost for one growing season : landrent, seed cost, fertilizer cost, pesticide cost, labour cost, reduction cost, tax, interest of capital, and also chilli production cost.

Secondary data was institution related to this research eg: Statistic Indonesia for West Sumatera, Horticultura and crop institution for West Sumatera. While secondary data is data obtained from institutions related to this research, eg: the Central Bureau of statistics of West Sumatra Province, Food and Horticulture Department West Sumatra Province as well as the library-scientific library. For this reserach, it is used a farming analysis. Quantitative data is presented in table. Then, it is converted to hectares (Ha).

According to [4] revenue is the difference in the total acceptance of the farmers minus cultivation cost during the plant still reproducing. Lotanbar chili farming income obtained from the calculation as follows:

$$Y_i = (X_i \cdot H_x) - B_t \quad (1)$$

Y_i = Farmer's income (Rp/ha/growing season)
 X_i = Production (Kg/ha/ growing season)
 H_x = Selling price (Rp/kg)
 B_t = Paid cost (Rp/ha/ growing season)

Profits derived from this formula:

$$K = (X_i \cdot H_x) - B_T \quad (2)$$

K = Farming profit (Rp/ha/growing season)
 X_i = Production (kg/ ha/ growing season)
 H_x = selling price (Rp/kg)
 B_T = Total cost (Rp/ ha/ growing season)
 R/C Ratio analysis can be calculated form:
 RCR = R/C
 RCR = Nilai R/C
 R = Revenue (Rp/ha/MT)
 C = total cost (Rp/ha/MT)

The cost of depreciation is the cost for the purpose of calculating the value of sacrifice in a investment. As for the cost of depreciation is calculated by the following formula:

$$D = P - S \cdot N \quad (3)$$

D = Cost of depreciation (Rp/th)
 P = Purchase price (Rp)
 S = Residual value (Rp)
 N = Economical age (th)

To know chilli farming feasibility level Lotanbar used analysis of R/C ratio. Analysis of R/C is used to find out the worth or not like a commodity sought, namely by looking at the comparison between admissions and costs total [7].

In this research be used the following operational limits:

- 1) Farming is a type of farming activities were organised by the farmer with combine natural factors, labor, capital and management
- 2) The income of farming is the difference in acceptance of total farmers from farming minus cash expenses farmers in the management of farming during the plant still reproduce.
- 3) Acceptance of farming is the multiplication between production obtained with the sale price.
- 4) The total costs is the whole charges used in production, consisting of a paid cost and charge that counts.
- 5) Profit farmers or net income is difference between income and the total costs.
- 6) One season is six months, as of right at the beginning of land management up to the harvest last Maret 2013-September 2014 .

III. RESULT AND DISCUSSIONS

A. Technical Culture

Chili is a horticultural crops requiring intensive cultivation to get optimal results. Its price was strongly influenced by the quality of the resulting product. Therefore, proper planning began planting until harvest will determine the income of farmers.

In General, the chili peppers were planted through the stages of the seedbed. This is done to reduce damage to crops in the field, picking the seeds are uniform, easy in maintenance. Maintenance performed includes the fertilization and the prevention of pests and diseases. The seedbed is usually done for 4-6 weeks or seed already has 4 leaves. Planting distance used varies 50 cm x 40 cm. each planting hole contains 2 seeds and later there will be a spacing that will leave one seedling per a hole.

Different things done by chili farmers Lotanbar is not doing the seedbed. Seed planted to the farm directly, aimed to speed up the adaptation in the field so that harvesting can be done much earlier approximately 80 days after planting. The chili seeds are grown directly in the planting hole as much as 3 seeds per hole. Growing seedlings kept without any spacing.

B. Cultivating Area

Land is one of the factors of production in farming. With the land that is owned by farmers, they can cultivate a wide range of agricultural commodities. The average acreage farmer Lotanbar chili is 0.10 ha, with the range of 0.05-0.15 ha ha. Lotanbar chili pepper acreage of less than 0.10 ha as 6 people (60%) and a large acreage of 0,10 ha is as much as 4 people (40%).

C. The Use of Labor

Generally, unpaid labor used to farmers because the average acreage of chili Lotanbar was not so wide. Using of paid labor was only at the time of tillage and harvesting. The unit of measure used to calculate the size of the workforce is men's work day (HKP) i.e. number of work poured for the entire production process is measured by the size of the working man. In the area of research, labor wages of men and women alike, namely Rp 50,000/day (8 hours). The results showed that in pursuit of chili plants require Lotanbar (HKP) 150,39 HKP from labour in the family and the labor of 35,38 HKP beyond family. From the total workforce in the family, it was using 70,03 HKP originated from the male workforce and of workforce (HKP) 30,13 women. For labor outside of the family used comprising 44,98 HKP from labor male and female power source from 5.25 HKP (annex 1).

D. Production

The research can be obtained from an average production of chili farmers produced Lotanbar for 6 months in, Talang Maua sub-district reached 1.410 .30 kg/land area/growing season or 15.619 .68 kg/Ha/Crop growing season. Harvesting could be done 24 to 32 times during one growing season. Price of chilli pepper at the time of research were Rp 22.618, 11/kg with a price range of 10,000.00/kg to Rp 45,000.00/kg. Revenues earned by farmers from farming chili Rp 31.559.800 for Lotanbar/land area/ growing season or USD 353.287.530,42/Ha/growing season

E. The production costs of farming

Farmers ' production costs include fees paid and cost counted. Fees paid consists of the cost of seed, fertilizer, insecticides, paid labor, the tax cost the Earth and buildings. While the cost counted are taken into account consists of the

cost of labor in the family, land rent, interest, and depreciation of capital equipment. For the cost of labor is obtained by multiplying the outpouring of work with wages that are currently in effect. Total costs incurred for the outpouring of work of farming/growing season on farming chili Lotanbar an average of Rp 7.519.940, 48, consisting of Rp. 5.750.892,86 for labor within the family (costs are taken into account) and Rp 1.769.047,62 for labor outside the family (paid cost).

The magnitude of the cost paid for seed in one growing season is Rp 72,000 fare/land area/growing season or Rp. 800,000 fare/Ha/ growing season. As a percentage of the cost of seed is issued is 1.00%. For the cost of the fertilizer in one growing season was Rp. 5.161.350 fare/land area/ growing season or Rp. 54.156.427/Ha/growing season. with regard to the percentage of the cost of fertilizer is the most substantial of i.e 68.00%. This is because this Lotanbar chili farming used more fertilizer to grow optimally. The cost of pesticides was in a single growing season is Rp 903.500 fare/land area/ growing season or Rp. 9.890.767,20/Ha/ growing season. Percentage of pesticide costs up to 12, 37%.

Using outside the family labor cost Rp 162.500 fare/land area/ growing season or Rp.1.769.047,62/Ha/ growing season with percentage of 2,21%. The most widely taken into the counted cost of labor was in the family as much as Rp 511.250 fare/land area/ growing season or Rp 5.750.892,86/Ha/ growing season with 7.19 percent.

Labor in the family is very helpful in managing plant chili Lotanbar. The workforce was instrumental in the production process even more widely used than labor outside of the family. In comparison, the use of fees paid is greater than the counted cost so that very effect on revenues and profits of farmers

F. Income, Profit and R/C Ratio

The results showed that the average total income of farming chili Rp 25.256.900 for Lotanbar/land area/ growing season or Rp. 286.722.257,28/Ha/ growing season while the profits farmers in farming chili peppers Lotanbar Rp 24.104.815,57 /land area/ growing season or Rp. 273.381.482,57/Ha/ growing season .R/C ratio was obtained from the farming of 4,42 Lotanbar chili . This means that every Rp 1.00 invested capital to farming chili Lotanbar will provide receipts amounting to Rp 4,42 so inexplicable that the chilies of farming Lotanbar deserves to be kept. [7] said that when the value of the ratio R/C more than 1 then the farming profitable and feasible to me. Therefore, the decision taken by farmers and farming chili Lotanbar keep trying to accomplish.

When compared to the usual red chillies, farming farming chili Lotanbar this resulted in higher production. As for the production of Lotanbar which is a 15.619 chili .68 kg/Ha/ growing season. While according to on the Capsicum is healthy and flourishing, production ranged from 10,000 to 15,000 kg/ha.

Production, revenues, expenses and income of farmer profits chili lotanbar can be seen in Table 1.

TABLE I
ANALYSIS OF THE FARMING BUSINESS CHILI LOTANBAR IN ONE OF THE
GROWING SEASON (SEPTEMBER 2013-MARET 2014) AT NAGARI TALANG
MAUA, THE DISTRICT OF LIMAPULUH KOTA

No.	Description	Values per area	Values per ha	%
1	a. Production	1.410,30	15.619,68	
	b. Price	22.378,08	22.618,11	
	c. Revenues	31.559.800,00	353.287.530,42	
2	Production cost			
	a) Paid cost			
	Seed	72.000,00	800.000,00	1,00
	Fertilizer	5.161.350,00	54.156.427,25	68,00
	Pesticide	903.500,00	9.890.767,20	12,37
	Paid Labor (non Family)	162.500,00	1.769.047,62	2,21
	Tax	2.750,00	29.031,08	0,04
	Total	6.302.100,00	66.645.273,15	
	b) Unpaid cost			
	Unpaid Labor (Family member)	511.250,00	5.750.892,86	7,19
	Seed cost	72.000,00	800.000,00	
	Depreziation	134.101,10	1.514.117,76	1,89
	Rent own land	49.900,00	500.000,00	0,63
	Interest on capital	450.433,33	4.775.764,09	5,97
	account	1.217.684,43	13.340.774,71	100
Total cost	7.519.784,43	79.986.047,85		
3	Income (1c-2a)	25.256.900,00	286.722.257,28	
4	Profit(1-2)	24.104.815,57	273.381.482,57	
5	R/C (1 : 2)	4,42	4,42	

IV. CONCLUSIONS

Technical culture that distinguishes between ordinary red chili with Chili Lotanbar is on seeding and breeding activities. Nurseries on Lotanbar chili is done directly on farming land as much as 2-3 seeds per a hole for planting. This led to the age harvest could be more accelerated approximately 10 days (at the age of 80 plants today) than ordinary red chili. The old harvest on chili Lotanbar also longer i.e. to plant 6 months old. As a new, superior varieties of chili Lotanbar technically, economically and socially acceptable and feasible to be developed

Technically, economically and socially chili Lotanbar eligible to serve as a superior new varieties that can be developed to farmers, it is expected that the Government may give Lotanbar chili a recommendation letter to release it.

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