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Analysis of Tumpang Sari Horticulture Farming in Pattappang Village, Gowa Regency

Fitri Anugrah Sari[1], Muh Ilmi Ikhsan Sabur[1], Siti Nurazizah Jufri[1], Ainim Paradita[1], Bima Wicaksana Pawiloi [1]

[1] Department of Agribusiness, Faculty of Agriculture, Hasanuddin University, Indonesia

Corresponding Author: Fitri Anugrah Sari
Email: fanugrahsari@gmail.com

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Abstract

This research was prepared aiming to determine the amount of cost, income, and efficiency of vegetable farming in the Buluballea Environment, Pattappang Village, Tinggimoncong District, Gowa Regency. Besides this research is also to determine the effect of factors such as land area, labor, manure, urea fertilizer, KCl fertilizer, ZA fertilizer, and cropping patterns on costs and income. Tumpangsari Farming is planting in almost the same time for the same two types of crops. The basic method used in this research is descriptive study and is done by interview technique. The selection of sample farmers uses a stratified random sampling method with a total of 5 (five) people. The type of data used in the study is primary data and secondary data collected by interview, note-taking, and observation techniques.

Introduction

Intercropping is a form of mixed planting in the form of involving two or more plants in one planting area at the same time or somewhat together (Beets, 2019). Intercropping that is commonly done is planting at almost the same time for the two types of crops that are the same. In realizing strong, advanced and efficient crops, available land resources must be utilized optimally (Setiawati & Nurtika, 2005).

In this study intercropping systems of cabbage plants with leeks and chicory with leeks. Besides that, optimal land use will bring benefits to farmers, by increasing production and good use of land efficiently. The use of intercrops is intended to increase farmers' incomes, avoiding failure for one crop by adding one or more other types of plants that have compatible characteristics (Baumann, 2000).

Leek or (Allium fistulosum L.) is one of the plants used as a seasoning and fragrance, and a mixture of various dishes (Khrustaleva & Kik, 2000). Onion has a very specific aroma so that the cuisine given the scallion flavoring has a fragrant aroma and gives a better taste (Cahyono, 2011).

Cabbage or Brassica oleracea is one of the agricultural products that are needed by most people (Pradhan et al, 2007). Cabbage production, in addition to meeting domestic needs, is also an export commodity that belongs to a group of sixteen of Indonesia's leading export vegetables, according to the opinion of Rukmana (Kristanto., 2013).

White mustard (Brassica juncea L.) is a horticultural crop that is quite popular with the community because it has good taste (Sangeetha & Siddaramaiah, 2007). Demand for mustard always increases along with population growth and awareness of nutritional needs. The economically valuable part of the mustard plant is leaves, so efforts to increase production will be made to increase vegetative products to support these efforts. Tanman mustard requires sufficient nutrients (Erawan et al., 2013).

Control with intercropping systems with cultivation plants is considered very good and safe because it does not cause environmental pollution (Lithourgidis et al., 2011). Cropping patterns with intercropping means that they can modify the ecosystem that can provide several benefits, namely (1) safeguarding the natural enemy phase that is not active, (2) maintaining the diversity of a community, (3) providing alternative hosts, (4) providing natural food, (5) creation of natural enemy shelters and (6) selective use of insecticides.

The purpose of this study was to determine the effect of intercropping on land productivity, production problems, financing, changes in product prices, and technological changes in intercropping, especially cabbage with leeks and also chicory and leeks.

Methods

This research was carried out in Pattapang Sub-District, Tinggimoncong District, Gowa Regency, South Sulawesi. The implementation of this research lasted for four days, namely on Friday to Sunday, April 27 to 29, 2018 by selecting horticultural crop farmers, especially farmers with intercropping systems. Farmers with the intended intercropping system are farmers who grow vegetables involving two or more types of plants in one planting area at the same time. Inter-farmer farmers were selected as respondents (total sampling) of 5 people.

This research uses descriptive method, which is a method of finding facts with the right interpretation. Data analysis was carried out qualitatively and quantitatively. Quantitative analysis is used to calculate farm costs and income by processing data using Microsoft Excel software. Furthermore, the data will be simplified in the form of tabulations and will be interpreted descriptively.

Results and Discussion

Identity is a characteristic or signs that are attached to a person who becomes his characteristic. Identity is often associated with attributes that are pinned to individuals who actually have multiple characteristics.

The identity of a farmer is important to know, namely the identity of the respondent including age, education level, length of farming, family responsibility, area and status of arable land, and patterns of use of labor in farming. The identity of the sample farmers in this study included age, length of education, number of family members, number of active family members in farming, brusahatani experience and land area. The identities of the sample farmers can be seen in Table 1.

Table 1. Shows that the average age of sample farmers is 44 years, which means that they are still in productive age so that it is still possible to increase production. The average farmer education is 11 years 4 of the respondent farmers have a 9-year education that is only up to junior high school level and 1 of them took up to high school level. The average family member who is active in running a farm is 2.8 people or about 3 or 2 people and. The number of respondents active in the business of 4 people 1 of whom only work side jobs. The land ownership status of 4 respondents has their own land and one of them only said. The average land area of the 5 respondent farmers is 0.78 Ha.

Table 1. Characteristics of Onion and Cabbage farmers in Pattapang Village, Tinggimoncong District, Gowa Regency.

No.	Description	Total
1.	Number of respondent farmers (people)	5
2.	Average farmer education (years)	9.6
3.	Average age of farmer (years)	44
4.	Average number of farm family members (people)	2,8
5.	Active in Atlantic potato farming (people)	4
6.	Average land area (Ha)	0,78
7.	Land ownership status (people)	
	a. One's own	4
	b. Rent	1

Source: Primary Data Analysis, 2018.

Agricultural Business Capital

Table 2. Source of Farming Capital for Cabbage and Leek Farmers in Pattapang Village, Tinggiimoncong District, Gowa Regency

No.	Descriprion	Number of farmer (person)	Presentage (%)
1.	Owner's equity	5	100%
2.	Loan		

Source: Primary Data Analysis, 2018

Table 2. Shows all respondent farmers using their own capital in running a farm. Because there is no support in carrying out their farming. In addition, lending requirements have complicated mechanisms so that farmers choose not to borrow in the fulfillment of their capital

Use of Production Factors in Carrot Farming

Table 3. Shows that for seedlings on leeks and cabbage does not require capital because the respondent farmers prepare seedlings from previous harvests, while the total manure needed is 3400 kg with a total cost of Rp. 374,000, while the NPK fertilizer needed for farming is 160 kg with a total cost of Rp. 320000. The demand for Urea fertilizer is 160 kg with a total

cost of Rp. 288000. The requirement for fertilizer ZA required is 85 kg while the total cost is 1445000. Based on the table above, the total cost used is Rp. 1,126,500.

Table 3. Average Cost of Production of Onion and Cabbage Farming per Ha unit in Pattapang Village, Tinggiimoncong District, Gowa Regency

No.	Description	Total	Price per Unit	Total Cost (Rp)
	Seeds			
	a. Leeks	15.8	-	-
	b. Cabbage	14.4	-	-
	Manure	3400	110	374000
	NPK (Nitrogen fosfat kalium)	160	2000	320000
	Urea	160	1800	288000
	Za	85	1700	144500
	Total			1.126.500

Source: Primary Data Analysis, 2018

Carrot Farming Labor Costs

Table 4. Average Labor Costs of Onion and Cabbage Farming in Patappang Village, Tinggimoncong District, Gowa Regency

No	Description	Total HKSP	Total Cost (Rp)
1.	Land Processing	-	-
2.	Planting	-	-
3.	Fertilization	-	-
4.	Weeding	-	-
5.	Pesticide Spraying	-	-
6.	Irrigation	-	-
7.	Harvest	-	-
Total		-	-

Source: Primary Data Analysis, 2018

Table 4. Shows that independent farmers do not incur processing costs because the respondent uses his own labor in managing his land from the land management process to plant to the harvesting process.

Carrot Farm Production and Income

Table 5. Average Income of Onion Leaves and Cabbage Farmers in Patappang Village, Tinggimoncong District, Gowa Regency

No.	Description	Per Hectare
1.	Reception	
	a. Leek	Rp. 10.200.000
	b. Cabbage	Rp. 7.280.000
2.	Cost	Rp. 1.126.500
3.	Income	Rp. 16.353.500

Source: Primary Data Analysis, 2018

Table 5. Shows the average income of Leek and Cabbage, namely farmers for leeks of 10.200.000 and for cabbage farmers which is Rp. 7,280,000 after deducting the production cost of the net income obtained by the respondent farmers, namely Rp. 16,353,500 per Ha.

Farmers' productivity results are influenced by the weather, farm area, and market prices. The average productivity of farmers for the production of leeks is 850 kg per ha. And the yield for cabbage is 520 kg per ha. So that revenue can be obtained for Rp. 17,480,000.

Conclusion

The income received by farmers in Pattapang Urban Village in carrot farming is Rp. 17,480,000. per Ha with an average income from carrot farming by sample farmers is Rp. 16,353,500 per hectare. Costs incurred in the amount of Rp 1,126,500 per Ha to obtain an income of Rp 16,353,500 per Ha. Farmers' productivity results are influenced by the weather, farm area, and market prices.

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