ANALYSIS OF FRIED SHALLOT AGROINDUSTRY TO ABUNDANT PRODUCTION IN KUNINGAN REGENCY

Lusia Cipto Astuti[1,2], JokoSutrisno[3], Mohamad Harisudin[3], Endang Siti Rahayu[3]

[1] Doctoral Program of Agricultural Sciences, SebelasMaret University; [2] Regional Revenue Management Agency of Cirebon Regency, West Java; [3]Faculty of Agriculture, Sebelas Maret University, INDONESIA.

astuti.lc@gmail.com

ABSTRACT

Research was conducted in Kuningan Regency, as an area with the largest number of fried shallot producer in WKPP Cirebon. This study aims to determine: (1) the influence of fried shallot agroindustry on shallots availability in the market, (2) the impact of fried shallot agroindustry on social development of society and (3) the impact of fried shallot agroindustry on the economic development of the surrounding community. Survey research method using quantitative descriptive research analysis technique was used in this experiment. The primary data were collected through interviews with respondents and questionnaires, while secondary data were obtained from agencies related to this research. The unit of analysis was the perpetrators of fried shallots industry. The data were analyzed with Spearman's Coefficient of Rank Correlation. The result of the research shows that the existence of home industry of fried shallots was very helpful for people's life giving added value from shallot product. Fried shallot product has been marketed in domestic and abroad. High product absorption leading to employment and labor absorption especially female labor. The results of statistical analysis show: (1). There was influence of fried shallot agroindustry on shallot production (excess supply, marketing delay, price reduction) with value of rs = 0,875. (2). There was effect of shallot agroindustry on the social development of the community (improving infrastructure, community welfare and human resource quality), with rs = 0.654, and (3) there was correlation between fried shallot agroindustry and community economic development (field work, family income, life eligibility) with a value of rs = 0.724. The value of square of fried shallot industry (marketing and production abundance), with rs = 0,420, means that the influence of fried shallot industry on production abundance by 42% and the rest was influenced by other factors not examined.

Keywords : Excess harvest production, fried shallot

INTRODUCTION

Indonesian people in general and especially people in Kuningan Regency, are very fond of shallot. Although it is not part of the main nutritional components, the people can not leave the shallot on his cooking. This needs trigger the high availability of shallot as daily products. To fulfill the daily product demand, the bussiness of processing shallot into fried shallot is carried out. The resulting processed products will be useful in : 1). overcoming the occurrence of abundance production. 2). Providing value added products compared to direct sales of fresh bulbs.

Shallot is a horticultural product that has certain characteristics, shallot bulbs are very bulky and perishable but it is required by consumers in a fresh condition. So the efforts of product handlers determine the quality when it comes to the consumer.

The development of shallot industry in Kuningan continued to increase, in 2014 the planting area reached 263 ha and in 2015 reached 294 ha or increased by 11.78%. Harvest increased by 24.71%, production increased by 23.83% and productivity increased by 32.10%.

Shallot production is very high in the marengan planting season, i.e. the transition of the rainy season to dry season or vice versa. Shallot planting decreases during rainy season since high rainfall is not suitable for shallot plants. In the planting season, shallot production will be abundant exceeding the demand but decrease in the rainy season. This condition was not profitable for producers because of low prices. Fluctuating prices also occur when there is excessive planting in shallot production centers.

The occurrence of fluctuating prices, due to higher supply in market while demand remains, caused by the abundant products on the market so that prices are declining. Efforts to reduce the abundance of production are: 1). Reduce the size of shallot land farming by rotating, between regions or between farmers, 2). Overcome the abundance of production by processing shallot into fried shallot.

The fried shallot industry is quite potential to be developed. Besides its ability to extend the efficiency of shallots, it is also able to prosper the society around the household industry, reduce the abundance of production, and keep the price and supply stability in the market.

In addition, with the rapid rise of fast food industry, the consumption of fried shallot as one of the spices/complementary materials is also increasing (Estu and Berliana, 2000).

One of the obstacles faced by the fried shallot industry is that fried shallot need a certain type and size of shallots, the availability is unstable depending on the harvest season, and the supply in the market varies according to the conditions in each region, so there is often a high price difference between regions.

Fried shallot home industry is highly favored by consumers, because it has a distinctive aroma and flavor and remain dry/crispy although stored for long time. Making fried shallots at home level industry is expected to increase the economic value and income of farmers to improve the welfare of farmers.

Processing of fried shallot on the household scale in Region III Cirebon, as in Kuningan Regency, has a prospective market opportunity. This is evident from some fried shallot producers who continue to grow. There are home industries including micro business category, but also there has been a small or medium scale producers. Fried shallots have been marketed to cities in West Java and Central Java and with certain packaging, fried shallot products have been exported to countries in the middle east and europe

OBJECTIVES

1. Determine the influence of fried shallot agroindustry on shallots availability in the market,
2. Determine the impact of fried shallot agroindustry on social development of society and
3. Determine the impact of fried shallot agroindustry on the economic development of the surrounding community

Novelty Value of Research

Fluctuation in shallot proccess are often difficult to predict because they are influenced by inter-regional production and dynamic market mechanisms. This research is expected to be able to solve the excess of production during shallots harvest season. Excess supply will be

absorbed by the fried shallot industry thus remaining balanced with the demand thet exists throughout the market.

METHODS

The research of fried shallot home industry was conducted in Kuningan Regency as production center of fried shallot in WKPP Cirebon. Survey research method using quantitative descriptive research analysis technique was used. The unit of analysis is the fried shallot industry perpetrators as a source of information about the influence of fried shallot agroindustry on shallots availability in the market, and the impact on social and economic development for the community. The primary data were obtained through interviews with respondents (home industry perpetrators) using pre-prepared questionnaires. Secondary data were obtained from literature studies and data from various institutions related to this research. To find out the correlation between variables of socio-economic impact of fried shallot agroindustry (X) as independent variable, with the product development socio-economic society (Y) as dependent variable, Spearman's Coefficient of Rank Correlation test (rs) was used. Spearman's Coefficient of Rank Correlation test (rs) was calculated with the formula expressed by Suharsimi (2006) as follows:

$$rs = 1 - \frac{6 \sum di^2}{n(n^2 - 1)}$$

$$rs = \frac{\sum X^2 + \sum Y^2 - \sum di^2}{2\sqrt{(\sum X^2)(\sum Y^2)}}$$

The real level of the association of the socio-economic impact of fried shallot agroindustry (X) as independent variable, with socio-economic development of community around (Y) as dependent variable (rs value) was performed by t-test approach.

$$t_{test} = rs \sqrt{\frac{n-2}{1-(rs)^2}}$$

RESULTS AND DISCUSSION

General Condotions of Research Area

Based on the 40% test criteria, the population in the study area aged 0-14 years is 1168 people or 31.62%. from the calculation shows that the population in the study area belong to the category of productive age structure. In accordance with Nurdin (1999) opinion, if the number of people aged between 0-14 years is greater than 40 percent then the area has a young age structure, but if the population aged 0-14 years is smaller than 40 percent then categorized into area that has working age structure.

Dependency Ratio can be mathematically formulated as follows:

$$DR = \frac{\text{Number of Dependents}}{\text{Population (Ages } 15 - 64)} \times 100\%$$

$$\text{Dependents} = (\text{Ages } 0 - 14) + \text{Ages} > 64$$

$$DR = \frac{1168 + 234}{3694} \times 100\% = 61,17\%$$

From that calculation, the population dependency load in the study area is 61.17%, which means that every 100 productive ages should bear 63-66 people of unproductive age. Judging from the dependency ratio, the study area is categorized in severe conditions. This is in accordance with the opinion of Daldjoeni (1997), that if the number of dependency ratio is smaller that 30% it is included as light category, 31% - 60% included to medium category and greater than 60% included to weight category.

Seen from population density, the study area is categorized as a densely populated area, with population density of 1,612 persons/km². This is in accordance with Sayogyo and Sayogyo (1994) stating that an area with a population of less than 300 persons per km² is equally balanced, whereas a population of more than 300 people per km² is a densely populated area which means the territory is out of balance.

The percentage of the population with agricultural livelihoods in the study area consisted of farmers and farm laborers, 25.81% and 28.66%, respectively. This shows the increasing complexity of employment issues, where the problem of unemployment is related to poverty. Considering the unemployment rate (job seekers) as much as 19.48%, definitely it takes a lot of time to solve the problem. Especially when viewed from the existence of unemployment itself, besides a major problem in economic development that is closely related to the ability of the world of work to accommodate the size of the labor force, it can also be viewed as human resources that can not be utilized in the development process optimally. Therefore it is necessary to develop the agricultural sector such as processing of agricultural products (fried shallots), so it can absorb labor.

Condition of Respondents

The age of respondents, both employees and the community are mostly between 37 - 49 years old as much as 46.67%, employees aged between 24-36 years are 20% and the rest aged more than 50 - 62 years of employees are 33.33%. When viewed from the productive age, the respondents in the research area as a whole belong to the age structure of productive age.

Most of the employees of fried shallot factories graduated from middle school (36.67%) and high school (23.33%). Education affects the learning process, the higher the education of someone the easier the person to receive information. With higher education then someone will tend to get information, either from other people or from mass media. The more information, the more knowledge gained about managing a business. Knowledge is closely related to education where it is expected that someone with higher education will be more knowledgeable.

Most respondents work as farmers as much as 36.67%, civil servants and construction (20.00%) , while the rest work in the fried shallot factories as much as 23,33% as daily labors.

Shallot Agroindustry

The business of fried shallot produced by UD Sinar Tani can not be separated from the government and society of Pagundan Village, Lebakwangi District, Kuningan Regency. The fried shallot agroindustry will be revealed through the respondent's answer to the statements filed on the questionnaire. Agroindustry of fried shallot of UD Sinar Tani Pagundan Village, Lebakwangi District, Kuningan Regency is good, with the value of fried shallot agroindustry equal to 65,70% from ideal score. The description of shallot agroindustry UD Sinar Tani Pagundan Village, Lebakwangi District, Kuningan Regency can be seen in Table 1.

Table 1. Fried Shallot Agroindustry in Kuningan Regency

No.	Aspect of Agroindustry		Respondents' Response				Average Score	Ideal Score	Percentage (%)	Category
			NG	QG	G	VG				
1.	Raw Material	F	1	10	18	1	15,73	24	65,56	Good
		%	3,33	33,33	60,00	3,33				
2.	Additional Ingredients	F	0	11	15	4	5,60	8	70,00	Good
		%	0,0	36,67	50,00	13,33				
3.	Equipment and Packaging Material	F	3	11	14	2	5,20	8	65,00	Good
		%	10,0	36,67	46,67	6,67				
4.	Processing	F	0	12	18	0	21,37	32	66,77	Good
		%	0,0	40,00	60,00	0,0				
5.	Packaging and Labeling	F	3	24	3	0	4,37	8	54,58	Good Enough
		%	10,0	80,00	10,00	0,0				
6.	Storage	F	1	13	16	0	5,27	8	65,83	Good
		%	3,33	43,33	53,33	0,0				
7.	Marketing	F	0	5	25	0	8,17	12	68,06	Good
		%	0,0	16,67	83,33	0,00				
	Score of Fried Shallot Agroindustry						65,70	100	65,70	Good

Notes: a.Not Good (NG) ($\leq$ 43,75%),   b.Quite Good (QG) (43,76 – 62,50%),
c.Good (G) (62,51 – 81,25%),   d.Very Good (VG) (81,26% - 100%),   e. Frequency

Based on the table, the description of fried shallot agroindustry based on each indicator can be described as follows:

1. Raw material used for fried shallot is good, with agroindustry application value equal to 65.56% from ideal score. The use of raw materials can be described as follows:

   a. Preparation of fried shallot using raw materials by fried shallot producers includes activities that are (a) sorting, (b) cleaning, and (c) stripping of the outermost shell

   b. The raw materials used for fried shallot are quite good. The characteristics of raw materials used are: (a) quite mature, (b) quite hard, (c) not rotten, and (d) does not sprout, whereas the use of shallot bulbs diameter ranges from 1.3-1.7 cm.

   c. Producers of fried shallot use shallot that have shrinkage of 15% of the harvest weight

   d. Cooking oil used is palm oil, clear, and not rancid.

   e. The producers use other materials (iodized salt, tapioca, and rice flour), in accordance with SOP.

   f. Tapioca and rice flour used are dry, without musty smell, not sour, and white.

Viewed from the responses of respondents, 60.00% said that fried shallot producers had applied fried shallot agroindustry based on raw material indicator as good, 33.33% said quite good, 3.33%% said very good , and the rest 3.33% said as not good.

2. Additional ingredients of fried shallot obtained an average value of 5.60 (70.00%) and were categorized as good.

   a. The use of TBHQ/tertiary antioxidant is good (TBHQ/tertiary antioxidant, with dose less than 200 mg/kg).

   b. The use of propel antioxidant is good (dose less than 100 mg/kg).

When viewed from the responses of respondents, 50.00% stated that fried shallot producers used additional ingredients that are classified as good, 36.67% stated good enough, and 13.33% stated the use of additional ingredients in the processing of shallots was very good

3. The use of equipment and packaging materials in fried shallot agroindustry, obtained an average value of 10.83 (65.00%) categorized as quite good.

   a. The use of equipment is good (skin peeler, stanless knife, gas stove, fryer, vibrating screen, plastic bag, and label paper).

   b. The use of packaging in the manufacture of fried shallots is good.

When viewed from the responses of respondents, 46.67% stated that fried shallot producers used equipment and packaging materials classified as good, 36.67% as quite good, 6.67% stated very good and the remaining 10.00% said the use of equipment and packaging materials was not good.

4. Processing of fried shallot done by fried shallot producers is good, with value of agroindustry application equal to 21.37 or 66.77% from ideal score.

   a. Slicing process in the manufacture of fried shallots, done with chopper machine, less sharp knife, and using the container.

   b. The thickness of the slices in the manufacture of fried shallots, with a thickness of 1.25 mm slices.

   c. The amount of tapioca flour in the manufacture of fried shallots 8 - 9% of the raw materials.

   d. The process of frying in the manufacture of fried shallots, carried out at temperatures less than 150^0C.

   e. Comparison of oil in the manufacture of fried shallots, using 4: 1 oil ratio and submerged.

   f. Stages of frying in the manufacture of fried shallots, quite good (stable temperature, not set the flame and cooking oil was drained)

   g. Slicing in the manufacture of fried shallots, quite good (include hot fried shallots into the slicer / separator / spinner).

   h. Undamaged fried shallots in the manufacture of fried shallots, quite good (undamaged fried shallots and mixed fried shallots were separated by vibrating sieve size less than 20 mseh).

When viewed from the responses of respondents, 60.00% stated that fried shallot producers in the processing of fried shallots were good, as much as 40.00% said the process of fried shallot was quite good.

5. Packaging and labeling of fried shallots by fried shallot producers is quite good, with a value of 4.37 (54.58%) of the ideal score.

a. Packing materials used in the manufacture of fried shallots that use plastic bags, classified as less good quality.

b. The use of labels in the manufacture of fried shallots is poor (without product name, net weight, and halal label).

When viewed from the responses of respondents, 80.00% stated that fried shallot producers in the use of packaging and labeling were quite good, 10%vstated as not good and the remaining 10% stated the process of fried shallot was quite good.

6. Frying shallot storage by fried shallot producers is good, with a value of 5.27 (65.83%) of the ideal score.

a. Storage of the final product in the manufacture of fried shallots is in one room but separated with separated containers from other raw materials.

b. The requirements for storing the final product in the manufacture of fried shallots is qualified (protected from physical damage).

When viewed from the responses of respondents, 53.33% stated that fried shallot producers were quite good in the storage of fried shallots, 43.33% said as quite good and the remaining 1% said the process of storing fried shallots was not good enough.

7. The marketing of fried shallots made by fried shallot companies is good, with a value of 8.17 (68.06%) of the ideal score.

a. The business location is strategic in terms of ease of product sales

b. The company already has good marketing network in Kuningan, West Java and even in Central Java

c. Sales turnover keeps increasing every year

When viewed from the responses of respondents, 83.33% stated that the marketing of shallots was good, and 16.67% said as quite good.

Correlation between the Fried Shallot Industry and Abundance of Production

There is a correlation between fried shallot agroindustry with shallot harvest production (excess supply, marketing delays, price reductions) with rs = 0.875

Table 2.Social Impact of Fried Shallot Agroindustry in Kuningan Regency

No.	Social Impact		Respondents' Response				Aver age Score	Ideal Score	Percent age (%)	Catego ry
			NG	QG	G	VG				
1.	Oversupply	F	3	15	12	3	5,60	8	76,25	Good
		%	0,0	55,00	50,00	10,00				
2.	Supply Delay	F	1	14	10	5	5,87	8	69,58	Good
		%	3,33	43,67	35,33	18,67				
3.	Price Reduction	F	2	15	11	2	5,37	8	83,33	Good
		%	7,67	55,00	37,67	6,87				
	Score ofSocial Impact of Fried Shallot Agroindustry						18,93	24	76,39	Good

Notes: a.Not Good (NG) ($\leq$ 43,75%),   b.Quite Good (QG) (43,76 – 62,50%), c.Good (G) (62,51 – 81,25%),   d.Very Good (VG) (81,26% - 100%), F = Frequency

There is correlation between fried shallot agroindustry with handling abundance of shallot production with the rs value = 0.520. This coefficient value is included in medium category. This means that the relationship between fried shallot agroindustry with excess abundants of

shallot production is 0.520. Statistical analysis results in t_{test} 3.221 which is bigger than $t_{0.05.(28)}$ 2.048 at 5% level.

There is correlation between fried shallot agroindustry with oversupply, with value of rs = 0.435. The coefficient value is included in medium category. This means the relationship between fried shallot agroindustry with shallot excess supply is 0.435. Statistical analysis results in t_{test} 2.556 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level.

There is a relationship between fried shallot agroindustry with the level of supply delay and price reduction in marketing, with the value of rs = 0.524. The coefficient value is included in the medium category. This means the relationship between fried shallot agroindustry with supply delays and a reduction in marketing price is 0.524. Statistical analysis results in t_{test} 3.255 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level.

Correlation between Fried Shallot Agroindustry (X) and Social Development Society (Y2)

There is correlation between fried shallot agroindustry and social development of society, with value of rs = 0.824. The coefficient value is included in very strong category. This means the relationship between fried shallot agroindustry and the social development of society is 0.824. Statistical analysis results in t_{test} 7.696 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level.

Table 3. Social Impact of Fried Shallot Agroindustry in Kuningan Regency

No.	Social Impact		Respondents' Response				Average Score	Ideal Score	Percentage (%)	Category
			NG	QG	G	VG				
1.	Infrastructure	F	0	15	12	3	5,30	8	66,25	Good
		%	0,0	50,00	40,00	10,00				
2.	Community Economy	F	1	14	10	5	5,57	8	69,58	Good
		%	3,33	46,67	33,33	16,67				
3.	Improving the Quality of Human Resources	F	2	15	11	2	5,07	8	63,33	Good
		%	6,67	50,00	36,67	6,67				
	Score of Social Impact of Fried Shallot Agroindustry						15,93	24	66,39	Good

Notes : a.Not Good (NG) ($\leq$ 43,75%)   b.Quite Good (QG) (43,76 – 62,50%)
c.Good (G) (62,51 – 81,25%),   d.Very Good (VG) (81,26% - 100%),F = Frequency

There is correlation between fried shallot agroindustry and infrastructure, with rs value = 0.486. The coefficient value is included in medium category. This means the relationship between fried shallot agroindustry and infrastructure is 0.486. Statistical analysis results in t_{test} 2.943 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level.

There is correlation between fried shallot agroindustry and community economy, with value of rs = 0.479. The coefficient value is included in medium category. This means the relationship between frying shallot agroindustry and populist economy is 0.479. Statistical analysis results in t_{test} 2,887 which is bigger than $t_{0.05\ (28)}$ 2,048 at 5% level.

There correlation between fried shallot agroindustry and the quality of human resources, with the value of rs = 0.589. The coefficient value is included in medium category. This means the relationship between fried shallot agroindustry with the quality of human resources amounted

to 0.589. Statistical analysis results in t_{test} 3.857 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level.

Correlation between Agroindustry Bawang Goreng (X) and Community Economic Development (Y2)

There is correlation between the fried shallot agroindustry and the economic development of the community. The result of analysis shows that there is a significant correlation between fried shallot agroindustry with economic development of society, with rs value = 0.520. The coefficient value is in medium category. This means that the relationship between frying shallot agroindustry and the economic development of society is 0.520. Statistical analysis results in t_{test} 3.221 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level, meaning there is correlation between fried shallot agroindustry and economic development of society.

Table 4. Social Impact of Fried Shallot Agroindustry in Kuningan Regency

No.	Social Impact		Respondents' Response				Average Score	Ideal Score	Percentage (%)	Category
			NG	QG	G	VG				
1.	Employment Opportunity	F	2	12	15	1	5,40	8	67,50	Good
		%	6,67	40,00	50,00	3,33				
2.	Income Level	F	0	11	19	0	7,77	12	64,72	Good
		%	0,0	36,67	63,33	0,00				
	Skor Dampak Ekonomi Agroindustri Bawang Goreng						13,17	20	65,83	Good

Notes: a.Not Good (NG) ($\leq$ 43,75%)   b.Quite Good (QG) (43,76 – 62,50%)
c.Good (G) (62,51 – 81,25%)   d.Very Good (VG) (81,26% - 100%), e. Frequency

There is correlation between fried shallot agroindustry and employment opportunities. The result of analysis shows that there is a relationship between fried shallot agroindustry with job opportunity, with value of rs = 0.435. The coefficient value is in medium category. This means the relationship between fried shallot agroindustry and employment is 0.435. Statistical analysis results in t_{test} 2.556 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level, meaning there is a relation between agroindustry of fried shallot and employment opportunity of society. This indicates that the fried shallot agroindustry can increase the employment opportunities that are in the location region of shallot agroindustry business.

There is correlation between the fried shallot agroindustry and the income level of the community. The result of analysis shows that there is a relationship between fried shallot agroindustry and income level of society, with value of rs = 0.524. The coefficient value is in medium category. This means the relationship between frying shallot agroindustry and the income level of the community is 0.524. Statistical analysis results in t_{test} 3.255 which is bigger than $t_{0.05\ (28)}$ 2.048 at 5% level, meaning there is relation between fried shallot agroindustry and income level of society. In other words, fried shallot agroindustry can increase the income of the people who are in the location of agroindustry business of fried shallot.

CONCLUSION

There is a correlation between the impact of shallot fried agroindustry and abundance production of shallot with the value of rs = 0,875. There is a significant correlation between the impact of fried shallot agroindustry and social development of society with the value of rs = 0.654, and there is correlation between the impact of shallot agroindustry and the economic development of society with rs value = 0.724.

53

RECOMMENDATION

The excess production of shallot during the harvest season leads to an excess of supply. Therefore the effort to stabilize the price and to benefit the producers needs to be done to absorb the excess of production. Handling excess production can be done through the policy of market operations by pulling back the excess product or through the development of agro-industry in the form of storage and processing of fried shallots.

REFRENCES

[1]   Antara, M., & Wijaya, R. (1998). *Analisis usaha bawang goreng*. Denpasar: Fakultas Pertanian Universitas Udayana.

[2]   Arikunto, S. (2006). *Prosedur penelitian suatu pendekatan praktik*. Jakarta: Rineka Cipta.

[3]   Hapidin. (1997). *Kajian industri kecil bawang goreng di kabupaten kuningan, jawa barat*. Bogor: Jurusan Teknologi Industri Pertanian Fakultas Teknologi Pertanian Institut Pertanian Bogor.

[4]   Mubyarto. (1998). *Pengantar ekonomi pertanian*. Jakarta: Lembanga Penelitian, Pendidikan dan Penerangan Ekonomi dan Sosial.

[5]   Nugraha, A. W. (2002). *Jurnal evaluasi kelayakan usaha bawang goreng*. Brebes: Jawa Tengah.

[6]   Purwaningsih, H., Suwarlan, S., & Budiono, H. (2003). *Analisis kelayakan usaha bawang goreng*. Palu: Balai Pengkajian Teknologi Pertanian Sulawesi Tengah.

[7]   Rahayu, E., & Berlian, N. (2004). *Bawang merah*. Jakarta: Penebar Swadaya.

[8]   Soekartawi. (2000). *Agroindustri*. Jakarta: UI Press.

[9]   Sudiyono, A. (2004). *Pemasaran pertanian*. Malang: UMM Press.

[10]   Wibowo, S. (2009). *Budidaya bawang merah*. Jakarta: Bawang Putih, dan Bawang Bombay.