

# Relationship between Media Counselling, Farmer's Attitudes and Adoption of Integrated Crop Management Technology of Chili

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**Abstract**— *Counseling of integrated crop management technology is done to reduce the negative impact on the environment through various ways either through formal or informal media, but in fact the utilization of technological innovation tends to decrease because of difficult farmer attitude accept technological innovation offered. The purpose of this research is to see the relationship of agricultural extension media, consumer behavior and adoption of integrated crop management technology of chili. The study was first conducted in Maros regency, conducted in April-August 2017. Data were collected randomly (simple random sampling) and interviews were conducted to 85 respondents in a structured manner using a pre-prepared questionnaire. Data analysis was done using two methods: (1) descriptive statistical analysis, and (2) quantitative analysis. Descriptive analysis to explain extension media, farmer attitude and farmer adoption, measured using index aid. Quantitative analysis uses Chie Square analysis. The results showed that there was no significant correlation between media of counseling with farmer attitude and there was significant correlation between media of counseling with application of integrated crop management technology of chili by farmer. Extension activities through extension media need to be improved and the choice of extension media should be in accordance with the needs and conditions of local farmers, so that counseling can be achieved. Farmers' attitude toward technology should be directed to arrive at a process of action to adopt technology.*

**Keywords**— *Adoption, attitude, counseling, media, relationship.*

## I. INTRODUCTION

One type of vegetable that has a broad development prospect is chili pepper, this is because the chili pepper has a wide market, both as a commodity consumed in the country and for export to overseas markets. In addition, chili pepper has a fairly high economic value, and at certain times the price of chili pepper will soar high

enough. Chili pepper also has a high adaptability to be cultivated in various conditions (Kusmana et al., 2009).

In 2014, the area of chili pepper land in Indonesia reaches 128,734 ha, with production of 1,074,602 tons and productivity of 8.35 tons / ha. Nationally, chili pepper production in 2014 has increased 6.09 percent or about 61,723 tons while the contribution of chili pepper production to national vegetable production is 9.02 percent (Ministry of Agriculture, 2015). In 2014, the area of chili harvest in the South Sulawesi region reaches 3,920 ha, with production of 20,516 tons and productivity of 5.23 tons / ha. There was an increase in production from the previous year at 4,540 tons or 20.13% (South Sulawesi Statistics Agency, 2014). In addition, the area of harvest of chili pepper in Maros Regency reaches 583 ha with a production of 2.79 tons / ha (Statistic Center of Maros Regency, 2015). Although statistically the production of chili pepper increased, but nationally the production has not been able to meet national needs.

In an effort to solve the problem, the government has designed a technology assembly of chili pepper that can increase production, reduce the use of chemical pesticides and increase the use of organic fertilizer, called Integrated Crop Management Technology abbreviated PTT. But the perpetrator of chili pepper farming has not fully apply the recommended technology, so the quality and production level of chili pepper produced is still low. This is based on the results of research by Awaluddin et al (2014) that the level of utilization of technological innovations by farmers tend to slow down, the level of knowledge of farmers are still lacking, access to information sources far enough and the availability of information that is not in accordance with the needs of farmers.

According to Indraningsih (2011) research, the results of external and internal evaluation indicate that the speed and utilization rate of technological innovation produced by the Ministry of Agriculture through research institutions tends to decrease due to the attitude of farmers who still reject the technological innovation. In addition, agricultural counseling is currently only a program or it

can be said that farmers only accept if there is an activity using the media counseling and has been determined without being able to choose what the preferred way farmers.

Problems of utilizing information media that have not touched stakeholders and the use of information that has not been widespread makes the position of farmers, fishermen, and breeders become increasingly weak (Andriaty & Endang, 2012). In addition, according to research by Sasongko et al (2014), the factors that significantly affect the behavior of communication is the credibility of the media where the higher the media credibility by farmers, the higher the communication behavior of farmers. Factors that significantly affect attitude of farmers are communication, motivation, and education behavior. Media consumption correlates significantly with the effectiveness of communication between counseling workers and farmers. The most dominant characteristic of farmers related to communication effectiveness is farmer education level and frequency of following counseling.

Research by Harmoko and Erik (2016) said that the factors that affect farmers in accessing agricultural information is the cosmopolitan level. The higher the farmers look for agricultural information then access to information will be higher. The information most needed by farmers is related to production technology, followed by marketing and post-harvest information. The need for such information remains unfulfilled. Farmers use meetings, print media, and electronic media to access information (Andriaty et al., 2011).

The attitude of farmers to the theme of counseling with the needs of farmers, is closely related to the technology that will be applied by farmers. Due to the fact on the field, there is still a gap between the technology recommended through the counseling media with the attitude of farmers and the adoption of integrated crop management technology of chili pepper. Therefore, the research aims to analyze the relationship between counseling media, farmer attitude and adoption of integrated crop management technology.

## **II. METHOD**

### **1. Location and Research Design**

This research was conducted in Maros Regency, Tanralili District, from April until August 2017. This research according to the explanation including correlation research type which aims to find whether there is relationship between two variables or more. Correlation research does not answer cause, but only explains the presence or absence of relationship between variables studied.

This study aims to explain the relationship between counseling media, attitude and adoption of integrated crop management technology of chili pepper. The sample in this research is 85 chili farmers, selected by simple random sampling method, the sample is homogeneous and comes from three villages of Todoopulia, Lekopancing and Borong in Maros Regency.

### **III. METHOD OF COLLECTING DATA**

Data collection methods were conducted through interviews using semi-structured questionnaires. The data collected were farmer characteristics information, data on farmer attitude aspects; as well as the level of farmer adoption related to integrated management technology of chili. Then the secondary data that is in the form of statistical data from related institutions and previous research reports derived from the journal.

### **IV. DATA ANALYSIS**

Variable measurement scale is done so that research variables can be measured through numbers so that it can be used in statistical tests. In measuring this research variable used ordinal scale.

Data analysis was done by using two methods: (1) descriptive statistical analysis, and (2) quantitative analysis. Descriptive analysis was conducted to find out the level of intensity of counseling media, farmer attitude toward counseling media and adoption rate of integrated crop management technology of chili measured by using an index. Quantitative analysis is used to see the correlation between extension media, farmer attitude and adoption of Integrated Crop Management Technology of Chili in Maros Regency. The analysis tool used is Chi Square test.

## **V. RESULT**

### **1. Characteristics of Farmers Respondents**

The average age of the farmers was 39 years, with variations ranging from 18 to 72 years. The results showed that 77.65 percent of farmers respondents, aged between 30 years to 54 years and 15.29 percent of farmers under the age of 30 years. Most of the respondent farmers have high school level of 41.67 percent, junior high school as much as 32.14 percent, elementary school as much as 17.86 percent and bachelor as much as 8.33 percent, thus providing a picture of sufficient capacity in access information technology. The average farmer of the respondent has a long experience of chili farming that is 5 to 10 years as much as 74.12 percent, the experience of 11 to 15 years of farming as much as 20 percent and farmers with experience chili peppers above 15 years as much as 5.88 percent. The family dependent of the respondent farmers is 68.24 percent as many as 3 people, while the

farmers who have a large number of dependents of the family with the number of dependents 4 to 7 people amounted to 31.76 percent.

Farming done by the farmers of respondents get a high profit and the farming is feasible to continue because the profit earned reached IDR 101.643.518, with the R / C ratio of 19.16, the value of R / C ratio is > 1 which means the farming is feasible to be cultivated and developed. Respondents belonging to farmer groups were 100 percent, with 67 percent of farmers joining farmer groups for 1-5 years.

## **2. Relationship Between Counseling Media, Farmers Attitudes and Adoption of Integrated Crop Management Technology of Chili**

Based on Chi-Square analysis, relationship between counseling media, farmer attitude and Adoption of Integrated Crop Management Technology of Chili, obtained that  $X^2_{count} = 3,391$ . Chi-Square  $X^2_{table}$  with  $\alpha = 0.05$  is 9.49. Thus  $X^2_{counts} < X^2_{tables}$ , then  $H_0$  is accepted and  $H_2$  is rejected, where there is no significant relationship between counseling media and farmer attitude. Chi-Square analysis results, obtained that  $X^2_{count} = 27,376$ . Chi-Square  $X^2_{table}$  with  $\alpha = 0.05$  is 9.49. Thus  $X^2_{count} > X^2_{table}$ , then  $H_0$  is rejected and  $H_1$  accepted, where there is significant relationship between counseling media with farmer adoption rate.

## **VI. DISCUSSION**

Most respondent farmers are of productive age where the average age of respondents is the ideal age for work and has the ability to increase work productivity, and has a great ability to absorb information and innovative technology in agriculture. Farmer education is quite well educated, because 41.67 percent are high school graduates. Education is one of the factors that determine the productivity of labor, in this case farmers. Farmers who have higher levels of education have a better ability to understand and apply Integrated Crop Management Technology of Chili so that productivity becomes higher. (Luluk et al., 2008).

Based on farming experience owned by farmers, farmers are expected to be able to overcome the problems faced in the struggle. Therefore, the experience of chili farming is very influential on the attitude and decision to adopt a technology. Research from Rukka et al (2006), explains that farmers' experience in farming has an effect on how to respond to an innovation. The longer the experience of farming, the level of response to a technology will be higher. Based on the number of dependents most (68.24%) of farmers belonging to the small families. Family members are one of the agricultural human resources owned by farmers, especially those who are productive and help in their farming activities. Family

members can also be a burden for their families if they are not actively working to support farming activities (Syafudin, 2003).

Farming conducted by the farmers of respondents is reasonable to be cultivated where R / C ratio is greater than 1. The ultimate goal of farming is to obtain income and profit as much as possible from the farming process undertaken. Farmers work their farms in order to maximize profits so as to compensate for the expenses incurred during the production process. In addition, the participation of farmer respondents in farmer groups is very large. Farmers recognize that the function of farmer groups is as a forum for learning, working together and as a unit of farm production. Group experience makes it easier for farmers to communicate with peasants, more open and easy to receive information about agriculture and help each other in the process of farming. One of the factors that can determine the success in farming is the length of time to become a member of the farmer group because with the length of membership of the group then more experience of farming more developed (Rizal & Rahayu, 2015).

From the result of analysis of relationship between counseling media with attitude of farmer to Integrated Crop Management Technology of Chili, hence as many as 53 people accept the technology, but the counseling media can not influence attitude or behavior of farmer. Counseling media offered by government agencies is not maximized. Formation of attitude requires a process that is influenced by internal factors (individual self) and external factors (environment). Counseling media is a supporting factor not a dominant factor. The higher the education, the farmers experience, the farmers are not easily influenced by the media, because of the many considerations and interaction of farmers with the environment so that the decision or attitude of farmers to a technology is different from the purpose of the counseling. Kokolakis (2015) research results say that the attitude and behavior of a person is a phenomenon that is paradox. There is a real inconsistency between the attitude and behavior of farmers to the counseling media. Based on the results of research, the counseling media related in the process of technology adoption to farmers. Media of counseling through demonstration plots, printed media, and electronic media affect the farmers change in adopting agricultural innovation (Rushendi, et.al, 2016). The farmers receives information from counseling media, but the information they receives is not directly accepted and applied by the farmers, because the farmers will adapt it to the environment and customs that are usually done in the field. The choice of appropriate media in transferring information technology should be the focus of attention, the combination of the use of information media into

alternative media counseling, so that farmers more easily absorb the information with the ability of the senses it has.

## VII. CONCLUSION AND RECOMMENDATION

There is no significant correlation between media of counseling with farmer attitude. There is a significant relationship between the counseling media and the adoption of Integrated Crop Management Technology of Chili by farmers. Internal and external factors from farmers are the main reason for farmers to be receptive to information and adopt technology. It is advisable that evaluation of technological innovations that have been disseminated needs to be done, whether the technology is adopted or not by farmers. Counseling is the process of disseminating information and can not be separated from the media or tools used, preferably before doing counseling needs to be conducted survey of counseling media that is easily accepted and understood by farmers.

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