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Application Of The Farmer Guidance Model For Farming, Avoiding Self From The Coronavirus, And Integrated Pest Control In A Sustainable Way In The South Sulawesi Technical Irrigation Area

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ABSTRACT

The aims of the study were to determine: (1) knowledge, attitudes, motivations, and behavior of farmers to avoid Corona Virus and to carry out integrated pest control in technical irrigation areas before and after being trained on how to avoid Corona Virus and integrated pest control before and after the experiment, (2) the effect of training on how to avoid the Corona Virus and carry out integrated pest control on increasing the knowledge, attitude, motivation, and behavior of farmers to avoid Corona Virus in carrying out integrated pest control in technical irrigation areas.

This type of research is experimental research. The research location is the Langkemme irrigation area, Soppeng Regency. The area was selected by purposive sampling method. The experimental area is Rompegading Village and the control area is Pattojo Village. The two villages are located in Liliriaja District, Soppeng Regency. The selection of the two villages was done by purposive sampling method. The experimental sample and control sample, each of 25 farmers, were selected by purposive sampling method. Thus, the total sample is 50 farmers. The variables considered in this study were: knowledge, attitudes, motivation, and behavior of farmers to avoid Corona Virus and carry out integrated pest control in technical irrigation areas before and after being given training. The experimental design used was the pretest-posttest control group design. The research instruments were: knowledge test, attitude questionnaire, motivation questionnaire, and behavioral observation sheet. Knowledge data is collected through tests. Attitude and motivation data were collected through a questionnaire. Behavioral data was collected by observing farmers. The data analysis used is descriptive statistical analysis and infrensial statistical analysis. The inferential analysis model used is independent t test.

The results showed that: (1) the knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas, both the experimental group and the control group before training, were in the low category. After the training the experimental group was in the high category, while the control group remained in the low category, (2) the training had a very significant effect on increasing the knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in the area. technical irrigation.

Keywords: Farmers, Knowledge, Attitudes, Motivation, and Behavior.

1. Introduction

The Law of the Republic of Indonesia Number 32 of 2009 states that the environment needs to be maintained so that it provides benefits for humans. Faizal Ami (2017) states, technical irrigation areas are the built environment of farmers which are characterized by various irrigation buildings, such as weirs, primary channels, secondary canals, and so on. Therefore, this irrigation area needs to be maintained so as to provide benefits for farmers and other communities. The Corona virus is a disease that farmers need to watch out for in order to avoid illness and death by the virus. In order for farmers to avoid the Corona Virus, to be able to carry out integrated pest control, they need knowledge about how to avoid the Corona Virus, farming, and integrated pest control. Suriasumantri (2010) states that knowledge is all what we know about a particular object.

Faizal Amir (2018) has found a training model and teaching materials that can be trained by farmers in integrated pest control in irrigation areas. In addition, the Corona Virus can threaten farmers in farming. For this reason, the material on how to avoid the Corona Virus, and how farmers control pests in an integrated manner needs to be trained to farmers.

The research problems are as follows: (1) how are the knowledge, attitudes, motivation, and behavior of farmers to avoid Corona Virus and carry out integrated pest control before and after being trained on how to avoid Corona Virus and integrated pest control in technical irrigation areas? (2) does training on how to avoid the Corona Virus and carry out integrated pest control has an effect on increasing the knowledge, attitudes, motivation, and behavior of farmers to avoid Corona Virus in carrying out integrated pest control in technical irrigation areas?

2. Theoritical Review

Sanjaya (2011) states that the development of the training model goes through the following cycles: conducting a training needs analysis; designing training approaches; development of training materials; implementation of training; evaluation and improvement of training. Agus Suprijono (2013) states, the learning model should refer to the learning objectives, learning stages, learning environment, and classroom management.

The Law of the Republic of Indonesia Number 32 of 2009 states that the environment is a unitary space with all objects, power, circumstances, and living things including humans which determine the welfare of humans and other living creatures. Faizal Amir (2018) said, the essence of environmental management is how humans make efforts so that the quality of the environment is getting better.

Laycock (2007) states that the purpose of irrigation development is to meet water needs for agricultural purposes, for soil processing, fertilization, soil temperature regulation, and controlling pests. Mawardi (2010) states that the principle of the technical irrigation network is to get enough water, water supply is regulated, tertiary plots occupy a central function, and all buildings are permanent.

Suriasumantri (2010) states that knowledge is all what we know about a particular object. Bloom in Faizal Amir (2018) states that the better knowledge will have an impact on increasing attitudes, motivation, and behavior. Suriasumantri (2010) stated that the knowledge components are cognitive, affective, and psychomotor.

Azwar (2013) states that attitude is a person's evaluative response to the environment. Azwar (2013) states that attitudes are formed by a person's knowledge, experience, and sensing of the attitude object. Furthermore, it is said that attitude consists of

three components, namely: cognition, affection, and conation.

Adnil (2011) explains that motivation is a person's encouragement to carry out activities. Sarwono in Faizal Amir (2018) states that motivation consists of two parts, namely intrinsic motivation and extrinsic motivation.

Jiang (2012) states that behavior is an individual's action or reflection caused by psychological aspects, such as knowledge, perceptions, intentions, desires and attitudes. Tukiyat (2009) states that behavior is the result of a person's actions that are carried out continuously and have a continuous tendency to be carried out in situations and conditions encountered.

Mankiw (2011) states that income is the result of multiplying the number of units sold with the price per unit. Reksoprayitno (2009) states that income or revenue is the amount of income received by a person for a certain period of time as remuneration for services that have been donated.

The Agency for Agricultural Research and Development (2016) states that integrated pest control is an action that gives space and life rights for all components of ecological biota, without causing damage to cultivated plants. Indiati and Marwoto (2017) stated that integrated pest control (IPM) or integrated pest control (IPC) is pest control that uses all techniques and methods that are safe for the environment so that farming businesses do not suffer damage. Furthermore, it was stated that integrated crop management (PTT) aims to increase farm productivity in a sustainable and efficient manner by taking into account the resources and capabilities of farmers. The Agency for Agricultural Research and Development (2016) stated that the target of IPM is to reduce the use of pesticides by combining biological control techniques and chemical control.

3. Research Methods

This type of research is an experimental research located in the Langkemme irrigation area, Soppeng Regency. The area was selected by purposive sampling method. The sample area of this research is two villages, namely Rompegading Village and Pattojo Village. The two villages are located in Liliriaja District, Soppeng Regency. The selection of the two villages was done by purposive sampling method. The experimental materials are: how farmers avoid the Corona Virus, integrated pest control, farming, the environment. The research location is. The sample farmers of the experimental group and the control group were 25 farmers each. Thus the total sample is 50 farmers. The sample selection used purposive sampling method.

The variables to be considered are as follows: knowledge, attitude, motivation, and behavior of farmers to avoid Corona Virus and carry out integrated pest control before and after being given training. The experimental design used is the pretest-posttest control group design (Borg & Gall, 2008).

The research instrument consists of: true-false model knowledge test, attitude and motivation questionnaire, and behavioral observation sheets. Knowledge data is collected by giving a test to the sample. Attitude and motivation data were collected by giving a questionnaire to the sample. Behavioral data was collected by observing farmers who had been given training. The data analysis used is descriptive statistical analysis and infrensial statistical analysis. The inferential analysis model used is independent t test.

4. Research Results and Discussion

4.1. Research Results

The results of descriptive statistical analysis of the knowledge, attitudes, motivation, and behavior of farmers, the experimental group in trying to avoid the Corona Virus and carry out integrated pest control in technical irrigation areas before training was in the low category.

The average value of knowledge from 20 questions true and false = 5.28. The average value of the attitude of the 20 items of attitude statements = 47.41. The average value of the motivation of the 20 questions = 47.87. The average value of the behavior of the 20 items of observation = 46.92.

The results of descriptive statistical analysis of the knowledge, attitudes, motivation, and behavior of farmers, the control group in trying to avoid the Corona Virus and carry out integrated pest control in technical irrigation areas before training was in the low category. The average value of knowledge from 20 questions true and false = 5.37. The average value of the attitude of the 20 items of attitude statements = 46.92. The average value of the motivation of the 20 questions = 46.78. The average value of the behavior of the 20 items of observation = 46.22.

The results of descriptive statistical analysis of knowledge, attitudes, motivation, and behavior of farmers, the experimental group in trying to avoid the Corona Virus and carry out integrated pest control in technical irrigation areas after training was in the high category. The average value of knowledge from 20 questions true and false = 15.24. The mean attitude value of 20 attitude statement items = 81.57. The average value of the motivation of the 20 questions = 82.43. The average value of the behavior of the 20 items of observation = 81.73.

The results of descriptive statistical analysis of knowledge, attitudes, motivation, and behavior of farmers, the control group in trying to avoid the Corona Virus and carry out integrated pest control in technical irrigation areas after training remained in the low category. The average value of knowledge from 20 questions true and false = 6.31. The average value of the attitude of the 20 items of attitude statements = 46.89. The average value of the motivation of the 20 questions = 46.88. The average value of the behavior of the 20 items of observation = 46.04.

The results of the t-test analysis of the effect of training on increasing knowledge are presented in Table 1.

Table 1. The results of the t-test analysis of the effect of training on increasing knowledge

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
R = 0.96	10.26	1.21	.256	5.28	15,24	22.85	24	.000

Based on the results of the analysis in Table 1, it is seen that t = 0.000 < = 0.05 is significant. This means that training or experimentation has an impact on increasing farmers' knowledge about how to avoid the corona virus and carry out integrated pest control in technical irrigation areas. The correlation coefficient (R) = 0.96 or the coefficient of determination (R2) = 0.92. This figure shows that the magnitude of the training effect is 92%. The influence is very significant.

The results of the t-test analysis of the effect of training on improving attitudes are presented in Table 2.

Table 2. The results of the t-test analysis of the effect of training on improving attitudes

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
R = .942	64,5	1,47	1.09	47.41	81,56	24.81	24	.000

Based on the results of the analysis in Table 2, it is seen that t = 0.000 < = 0.05 is significant. This means that the experiment has an influence on increasing farmers' attitudes towards how to avoid the corona virus and carry out integrated pest control in technical irrigation areas. The correlation coefficient (R) = 0.942 or the coefficient of determination (R2) = 0.887. This figure shows that the magnitude of the training effect is 88.70%. The influence is very significant.

The results of the t-test analysis of the effect of training on increasing motivation are presented in Table 3.

Table 3. The results of the t-test analysis of the effect of training on increasing motivation

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
R = .958	65.15	1.29	1.08	47.87	82.43	23.92	24	.000

Based on the results of the analysis in Table 3, it is seen that t = 0.000 < = 0.05 is significant. This means that the experiment has an influence on increasing the motivation of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas. The correlation coefficient (R) = 0.958 or the coefficient of determination (R2) = 0.917. This figure shows that the magnitude of the training effect is 91.70%. The influence is very significant.

The results of the t-test analysis of the effect of training on improving behavior are presented in Table 4.

Table 4. The results of the t-test analysis of the effect of training on improving behavior

	Paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			

R= .907	64,32	1.53	1.26	46.92	81.73	22.47	24	.000

Based on the results of the analysis in Table 4, it looks significant t = 0.000 < = 0.05. This means that the experiment has an influence on increasing the behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas. The correlation coefficient (R) = 0.907 or the coefficient of determination (R2) = 0.823. This figure shows that the effect of the experiment on increasing the behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas is 82.30%. The influence is very significant.

4.2. Discussion

The experimental or training materials are knowledge of: (1) how farmers avoid the corona virus, (2) ecosystems of irrigated agricultural areas, (3) the environment of irrigated agricultural areas, (4) conservation of irrigated agricultural areas, and (5) pest control integrated into irrigated agricultural areas. The material is presented in ten meetings. Each material is taught in two meetings. Each meeting takes 3 – 3.5 hours. The method used is the lecture method, question and answer, discussion, and demonstration. To accelerate farmers' understanding of ecosystem knowledge, environmental knowledge, conservation knowledge, and integrated pest control knowledge, a reinforcement system is implemented for each material.

Prior to the experiment, initial measurements were made of: knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas. The results of the descriptive statistical analysis between the experimental group and the control group show: the knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas are relatively low. Knowledge, attitude, motivation, and behavior of both groups are the same. Thus the experiment is eligible to be carried out.

The results of descriptive statistical analysis of the knowledge, attitudes, motivation, and behavior of farmers in trying to avoid the corona virus and carry out integrated pest control, the experimental group and control group were in the low category. After the implementation of the experiment the knowledge, attitudes, motivation, and behavior of the experimental group farmers increased and were in the high category. The control group remained in the low category.

After the experiment was carried out as follows: knowledge, attitudes, motivation, and behavior of farmers in trying to avoid the corona virus and carry out integrated pest control in the experimental group increased and were in the high category. Meanwhile, the knowledge, attitude, motivation, and behavior of farmers in trying to avoid the corona virus and carry out integrated pest control in the control group remained in the low category.

The results of inferential statistical analysis (t test) showed that there were differences in the knowledge, attitudes, motivation, and behavior of farmers in trying to avoid the corona virus and carry out integrated pest control between the experimental group and the control group. The knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in the experimental group are much higher.

Experiments have a very significant effect on increasing knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas. The increase in the experimental group was caused by: (1) the materials provided were needed by

the farmers, (2) the methods used were in accordance with the conditions of the farmers, (3) the language used could be understood by the farmers, and (4) the control was carried out in the implementation. experiment. These controls are: (1) control over the testing effect, (2) control over the maturation effect, and (3) control over the mortality effect.

5. Conclusion

The conclusions of this study are as follows: (1) knowledge, attitudes, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in the technical irrigation area of the experimental group and the control group before the experiment are in the low category, (2) knowledge, the attitude, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas, the experimental group after the experiment was in the high category, the control group remained in the low category, (3) the experiment had a very significant effect on increasing knowledge, attitude, motivation, and behavior of farmers to avoid the corona virus and carry out integrated pest control in technical irrigation areas.

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