Journal of the Austrian Society of Agricultural Economics

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Scope	Articles in the Austrian Journal of Agricultural Economics and Rural Studies (formerly Journal of the Austrian Society of Agricultural Economics or ÖGA-Jahrbuch) are dealing with the agricultural sector. The journal is published in one or several volumes per year. The published articles are reviewed by a double-blind peer review system. The articles are freely available from the wepage of the society. Following the memorandum of the Austrian Society of Agricultural Economics articles on the following topics are published Business Economics (Agriculture, Agribusiness) Agricultural market analysis, Agricultural marketing, Food economics, Agricultural politics, Regional economics, Agricultural Geography, Agricultural structur analysis Agricultural system analysis, Applied Environmental Economics, Rural Sociology, Agricultural law.

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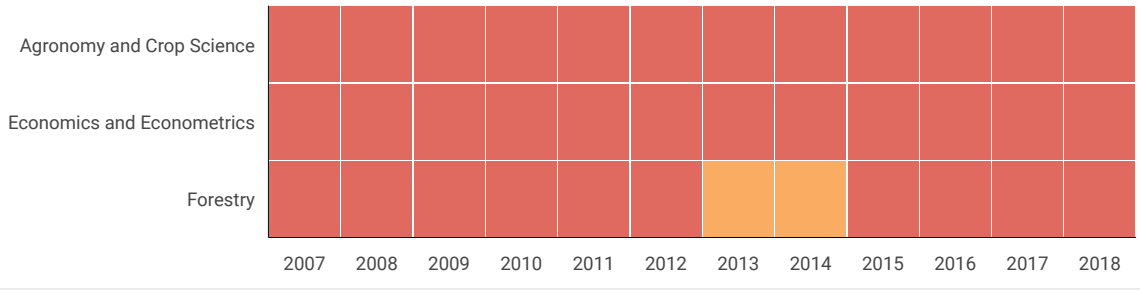

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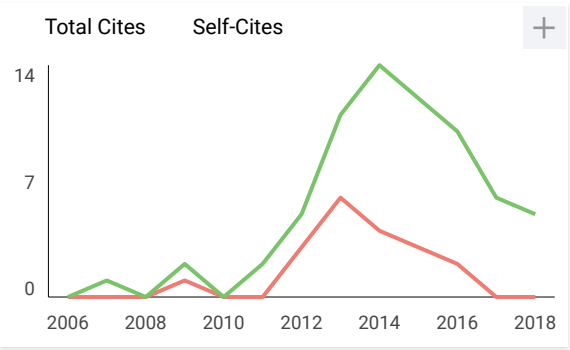

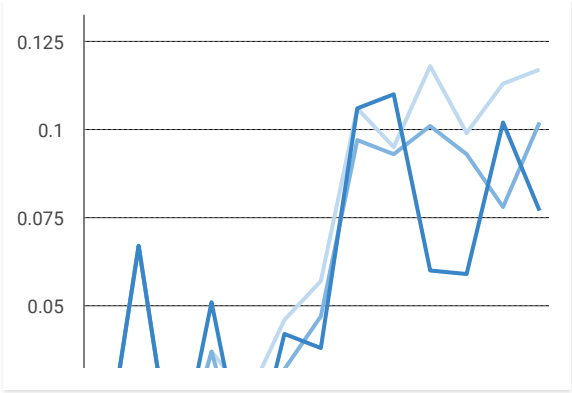

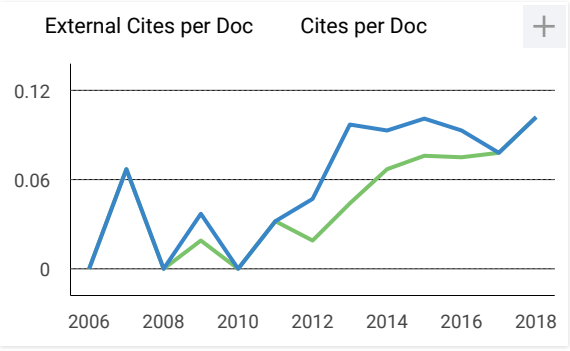

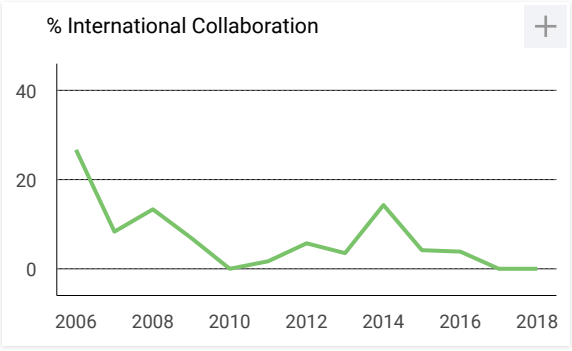

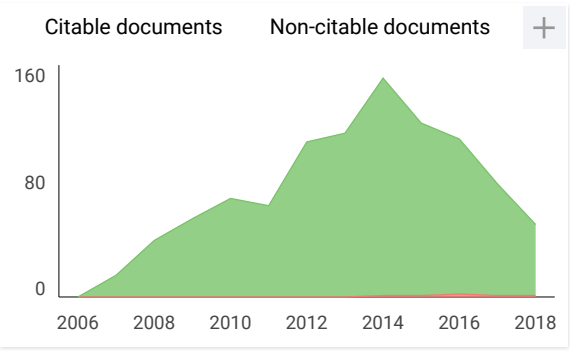

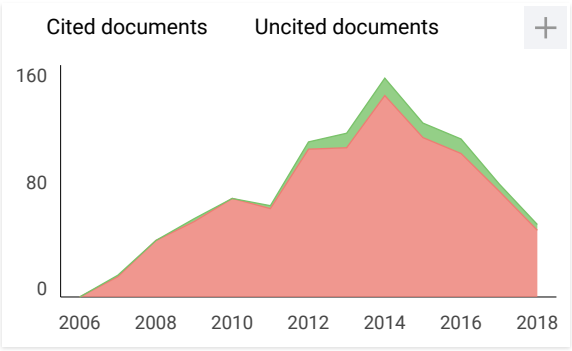

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Journal ID : **JASAE-09-01-2020-21** Total View : **1**

Title : Design and experiment of a robotic manipulator for automated net-wrapper production
by Tran Doan Son, Vo Tuong Quan, Tran Doan Son,
Abstract : The spring roll is a quintessence of Vietnamese cuisine that is enjoyed by many different cultures around the world. Nowadays, there are 3 types of spring rolls in the markets: Rice paper spring roll, Bia spring roll, and net-wrapper spring roll. As of now, net-wrapper is either manually made or produced on semi-automatic machines, which only automate the forming process, so that workers are still needed in the production process. This

study deals with the design of a robotic manipulator that connects to the semi-automatic machine to take the net-wrapper out of the mold instead of manual operation. The experimental results with the developed prototype demonstrate the effectiveness of the proposed design. This study contributes to improve the semi-automatic production and improve productivity from 28% to 80% depending on the net-wrapper's diameter as well as workers' working conditions. This new solution will greatly contribute to food industries in the world as well as a working environment for agricultural production in Viet Nam.
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Journal ID : **JASAE-04-01-2020-20** Total View : **0**

Title : Napier Silage Formulation as Fodder Conservation for Goats During Monsoon Season
by Afzan Mat Yusof, Mohd Hishammfariz Mohd Amin,
Abstract : Silage is a type of feedstock that had undergone several steps of forage fermentations that served as an alternative feedstock for ruminants. Hence, the project aimed to formulate Napier grass silage formulation that suitable to maintain the weight and health of goats during the monsoon season. Napier silage was formulated without adding any imported crops. Goats' body weight gain was measured as indicators of the feed formulation efficiency and goats' performance. A total of twenty adult goats with bodyweight approximately 30-40 kg were fed with Napier silage formulation for 3 months (October to December). Bodyweight and daily milk production were measured on Day 7, 14, 21 and 28 of every month. The goats fed with Napier silage were able to maintain healthy weight and health during the monsoon season. The findings found that the Napier silage formulation is recommended as fodder conservation for goats during monsoon season.
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Journal ID : **JASAE-01-01-2020-19** Total View : **0**

Title : Usage of Selective Local Crops for Goat Feeds to Increase Milk and Meat Yield
by Afzan Mat Yusof, Mohd Hishammfariz Mohd Amin,
Abstract : The success of goat's milk and meat production relied on the types of feeding materials. The use of imported crops is common leading to underutilization of local crops. Local crops or new feed was formulated to compare with the existence of imported crops or old feed used by the goat farmers. Goats' body weight gain and daily milk yield were measured as indicators of the feed formulation efficacy and goats' performance. Twenty adult female Saneen goats (30-35 kg) were fed with two different feed formulations for six months. The goats were fed with imported feed (Diet 1) for the first three months and continued with local crops feed (Diet 2) for the next three months. The goats fed with Diet 2 showed higher body weight gain and milk production than Diet 1. The implementation of feed formulation using local crops is recommended as it increases goats' milk and meat production.
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Journal ID : **JASAE-19-12-2019-18** Total View : **2**

Title : The Role of Agricultural Extension in the Corn Intensification Program
by Mohamad Ikbal Bahua,
Abstract : The role of extension can be realized through the performance of extension and the effectiveness of extension in increasing production in the corn intensification program. Performance and effectiveness are the roles of extension in changing the behavior of farmers as the main actors in agricultural cultivation. The performance will produce work effectiveness that will have a good impact on increasing agricultural output. The research was conducted in Gorontalo Utara Regency, Gorontalo Province, from October 2018 to January 2019. The research sample was 91 agricultural extension workers taken by simple random sampling technique. Research data were analyzed using the semantic differential method. The results showed that the extension performance a good and very effective role in the corn intensification program.
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Journal of the Austrian Society of Agricultural Economics (JASAE)

Journal ID : **JASAE-15-12-2019-16** Total View : **570**

Title : Soil Fertility Evaluation and Crop Suitability Assessment of Agricultural Soil Condition in Samar Province, Philippines
by Derby E. Poliquit, Lorelie F. Tangaran, Mirador G. Labrador,
Abstract : Philippines soil condition varies accordingly due to the geospatial distribution of land causes crop constraints of nutrient uptake. One of these islands is the Samar region wherein soil is predominantly derived from sedimentary rocks. Very little information was conducted about its nutrient and fertility status in agricultural land areas. This study was conducted to evaluate the nutrient and soil fertility status of different agricultural land areas and to assess the crop suitability of soil in different municipalities of Samar. Results revealed that lowland agricultural areas of Samar possessed the greater potential for crop production relative to the upland agricultural areas as the latter has a higher amount of sand indicating the greater possibility of persistent mudstone formation. Generally, Samar has a deficient amount of phosphorous P and K as attributed by a high amount of Ca enable to displace P and K from the crops soil environment. The lowland agricultural areas are highly suitable for crop production than in upland areas. A greater amount of production inputs of P and K containing fertilizers are highly recommended in growing various types of fruit-bearing plantation crops, especially in upland agricultural areas. Adaptation of soil conservation practices is important to restore the availability of essential nutrients such as crop cover cropping, contour farming, terracing, crop rotation, mulching, green manuring, minimum tillage, and crop diversification..

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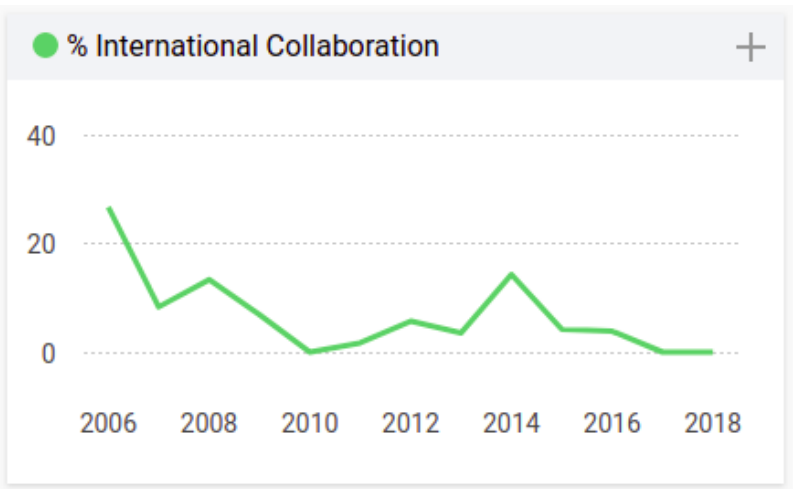

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Title : The Role of Agricultural Extension in the Corn Intensification Program

by Mohamad Ikbal Bahua,

Abstract : The role of extension can be realized through the performance of extension and the effectiveness of extension in increasing production in the corn intensification program. Performance and effectiveness are the roles of extension in changing the behavior of farmers as the main actors in agricultural cultivation. The performance will produce work effectiveness that will have a good impact on increasing agricultural output. The research was conducted in Gorontalo Utara Regency, Gorontalo Province, from October 2018 to January 2019. The research sample was 91 agricultural extension workers taken by simple random sampling technique. Research data were analyzed using the semantic differential method. The results showed that the extension performance a good and very effective role in the corn intensification program

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Volume 15, Issue 03, December, 2019

The Role of Agricultural Extension in the Corn Intensification Program

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Department of Agrotechnology, Faculty of Agriculture, State University of Gorontalo, Indonesia[1]

Abstract— The role of extension can be realized through the performance of extension and the effectiveness of extension in increasing production in the corn intensification program. Performance and effectiveness are the roles of extension in changing the behavior of farmers as the main actors in agricultural cultivation. The performance will produce work effectiveness that will have a good impact on increasing agricultural output. The research was conducted in Gorontalo Utara Regency, Gorontalo Province, from October 2018 to January 2019. The research sample was 91 agricultural extension workers taken by simple random sampling technique. Research data were analyzed using the semantic differential method. The results showed that the extension performance a good and very effective role in the corn intensification program.

Keywords— Agriculture Extension, Corn Intensification Program, Effectiveness, Performance, Role.

1. Introduction

The agricultural intensification program is an effort to increase agricultural output by optimizing existing agricultural land using various agricultural production facilities through the agribusiness system. The intensification program is very needed in agricultural development, especially the use of technology that is useful for increasing agricultural output. The corn intensification program aims to increase corn production achieved through the use of quality and certified seeds, fertilization, irrigation, pest and disease control as well as harvest and post-harvest handling [1].

Corn intensification program through the use of agricultural technology is a form of government intervention in increasing farmers' income and welfare. Therefore, the corn intensification program is implemented through a holistic approach to farmers through farm management with an agribusiness system [5]. This can be supported by the implementation of agricultural counseling which is oriented towards changing the behavior of farmers in increasing corn production. Corn intensification program is access for farmers in utilizing the land for corn farming, through the availability of agricultural production facilities and technology [8].

According to Bruce & Hofisi (2019), agricultural extension workers are officers who have the function to provide information and education services needed by farmers, so that farmers can be better at farming. Agricultural extension workers have the main tasks and functions that need to be done to achieve good performance. The extension who performs well can position himself as a motivator, educator, facilitator and dynamic actor that has an impact on changes in farmer's behavior in farming. Agricultural extension workers need to develop extension programs that are by regional potential and market demand to meet community needs. The performance of good agricultural extension has an impact on improving the performance of farmers in increasing farm production. The extension performance is focused on solving the problems faced by farmers in carrying out farming [9].

Taylor & Suhas (2018) explain the agricultural extension will take place effectively if farmers and extension workers work together in planning extension programs. The effectiveness of agricultural extension in the corn intensification program is carried out by the corn cultivation guidelines, namely: seed selection, soil

management, planting, maintenance, irrigation, harvesting, and post-harvesting. The corn intensification program guide is effectively carried out to determine the ability of extension workers and farmers in understanding good corn cultivation so that it has an impact on increasing corn production [7].

Baloch & Gopal (2019) explained that the role of agricultural extension workers in the corn intensification program requires the performance of extension workers in delivering information on corn cultivation technology to farmers. The extension workers' performance will be effective, if the extension can communicate well with farmers the realized to facilitate, motivate and educate agricultural technology that is beneficial to corn farming.

The increase in corn production was obtained through the corn intensification program and the role of agricultural extension workers who always assist farmers in their working areas. Agricultural extension workers in assisting and guarding the corn intensification program are a form of effectiveness of the performance of agricultural extension workers in providing information and education to corn farmers in accordance with the extension program planning that has been prepared jointly between extension workers and farmers, so farmers can cultivate corn well to improve their standard of living.

2. Materials and methods

The research was carried out in Gorontalo Utara Regency, Gorontalo Province from October 2018 to January 2019. This research used a survey method which was research conducted to obtain facts from the symptoms in the field. The smallest observation unit in this study is an agricultural extension. The research sample was taken using a simple random sampling technique from agricultural extension data in Gorontalo Utara Regency.

The population data of the number of agricultural extension workers are 91 people with the assumption that the basic tasks and roles of agricultural extension are the same and generally the agricultural extension workers are civil servants. This study uses the population as a research sample, meaning that this study uses a saturated sample to achieve research objectives.

Sources of data in this study are primary data and secondary data. Primary data sourced from the results of direct interviews in a structured manner with agricultural extension through a questionnaire guide. Secondary data is data that supports primary data and is sourced from related agencies, such as the agriculture department and the District Agricultural Extension Office.

Agricultural extension worker performance variables consist of: extension workers as motivators, educators, facilitator, and communicators. The effectiveness variables of the agriculture extension are: agriculture extension on the use of superior seeds of corn, rotation of corn varieties, soil processing, spacing, fertilization, water management, weeding, pest and disease control, harvest implementation, and post-harvest handling. The research data were analyzed as follows:

1. To analyze the role of agricultural extension in the corn intensification program using a measurement scale with a *Semantic Differential*, namely: 1. (Very Bad), 2 (Not Good), 3 (Less Well), 4 (Good), and 5 (Very Good).
2. To analyze the effectiveness of the implementation of agricultural extension in the corn intensification program used a *Semantic Differential* measurement scale (Simamora, 2004), namely: 1 (Not Effective), 2 (Effective), and 3 (Very Effective).

Data analysis of the role of agricultural extension in the corn intensification program is used interval scale with the following formula:

Interval Scale = {a (m-n)} / b (source: Simamora, 2004).

Information:
a = Number of attributes
m = Highest score possible
n = The lowest possible score
b = Number of rating scales to be formed

Based on the interval scale formula, the data analysis for the role of agricultural extension in the corn intensification program is analyzed as follows:

Analysis of the respondent's answer score data for the performance of agricultural extension is as follows:
The highest score : 5 (Very Good)
Lowest value : 1 (Very Bad)
Number of question attributes : 12

$$Interval\ Scale\ = \frac{(5\ x\ 12) - (1\ x\ 12)}{5}$$

$$Interval\ Scale\ = \frac{(60) - (12)}{5}$$

$$Interval\ Scale\ = 9{,}6$$

Then was obtained:
- Value : 12 – 21,60 = Very Bad
- Value : 21,61 – 31,20 = Not Good
- Value : 31,21 – 40,80 = Less Well
- Value : 40,81 – 50,40 = Good
- Value : 50,41 – 60,00 = Very Good

Analysis of agricultural extension performance data for each question attribute:

$$Interval\ Scale\ = \frac{(5\ x\ 1) - (1\ x\ 1)}{5}$$

$$Interval\ Scale\ = \frac{(5) - (1)}{5}$$

$$Interval\ Scale\ = 0{,}8$$

Then was obtained:
- Value : 1 – 1,80 = Very Bad
- Value : 1,81 – 2,60 = Not Good
- Value : 2,61 – 3,40 = Less Well
- Value : 3,41 – 4,20 = Good
- Value : 4,21 – 5,00 = Very Good

1. Analysis of the respondents' answer score data for the effectiveness of the implementation of agricultural extension as follows:

The highest score : 3 (Very effective)
Very ineffective : 1 (Very ineffective)
Number of question attributes : 10

$$Interval\ Scale = \frac{(3\ x\ 10) - (1\ x\ 10)}{3}$$

$$Interval\ Scale = \frac{(30) - (10)}{3}$$

$$Interval\ Scale = 6{,}667$$

Then was obtained:

- Value : 10 – 16,667 = Not Effective
- Value : 16,668 – 23,334 = Effective
- Value : 23,335 – 30,001 = Very Effective

2. Data analysis on the effectiveness of the implementation of agricultural extension on each attribute of the question:

$$Interval\ Scale = \frac{(3\ x\ 1) - (1\ x\ 1)}{3}$$

$$Interval\ Scale = \frac{(3) - (1)}{3}$$

$$Interval\ Scale = 0{,}667$$

Then was obtained:

- Value : 1 – 1,667 = Not Effective
- Value : 1,668 – 2,334 = Effective
- Value : 2,335 – 3,001 = Very Effective

3. Results and Discussion

3.1 The Role of Agricultural Extension Performance at Corn Intensification Program

Corn intensification is an agricultural development program in increasing corn production based on agricultural technology inputs. This requires the role of human resources in understanding the changing aspects of agricultural technology needed by farmers. The performance of human resources positively supports the implementation of tasks and functions in agriculture managed by farmers [12].

The performance of agricultural extension is considered good if it can facilitate farmers in the process of farming, post-harvest management to absorption of the final product by the market. In the corn intensification program, the role of extension is directed to motivate and provide education for farmers in utilizing agricultural land and agricultural production facilities effectively and efficiently in accordance with agricultural technology. Therefore, motivational and educational factors are needed for the sustainability of the corn intensification program [15]. The role of agricultural extension workers' performance at the corn intensification program in Gorontalo Utara Regency is presented in Table 1.

The role of agricultural extension workers' performance in the corn intensification program is based on the main tasks and functions of agricultural extension in increasing agricultural production. Table 1 descriptively explains that the performance of agricultural extension at the corn intensification program is Good with a total score of 44.77. Based on the interval scale on the semantic differential which shows the scale value 12 – 21,60 is not very good, 21,61 – 31,20 is not good, 31,21 – 40,80 is less good, 40,81 – 50,40 is good, and 50,41 – 60,00 is very good.

The role of the agriculture extension worker performance at the corn intensification program in Gorontalo Utara Regency is motivating, facilitating, educating, and communicating as a form of work performance of agricultural extension in helping farmers to increase corn production. Agricultural extension workers always try to take the time to motivate farmers to carry out corn farming based on the development of agricultural technology, especially in guarding the corn intensification program [13].

No	Variables / Sub Variables	Score	Category	Percentage of Answers	
				Frequency	%

1	The performance of agricultural extension workers as a motivator				
A	Motivating the ease of accessing information on corn intensification.	4,35	Very good	89	97,8
B	Motivating to direct farming according to the corn intensification programs.	4,23	Very good	83	91,2
C	Motivate increasing corn production in intensification programs.	4,27	Very good	85	93,4
2	The performance of agriculture extension as facilitators				
A	Facilitating the availability of agricultural production facilities in the corn intensification programs.	4,38	Very good	70	76,9
B	Facilitating policies and rules on the corn intensification programs.	3,42	Good	82	90,1
C	Facilitating budget availability in the corn intensification programs.	3,48	Good	75	82,4
3	The performance of agricultural extension workers as educators				
A	The Increase farmers' knowledge of new ideas on corn intensification programs.	4,31	Very good	91	100
B	The arrange material, media, and extension methods according to the corn intensification programs.	3,45	Good	80	87,9
C	Provide training in using new technologies in the corn intensification programs.	2,67	Less Well	87	95,6
4	The performance of agricultural extension as communicators.				
A	Looking for access information on agricultural technology to develop a corn intensification programs.	3,38	Good	91	100
B	They assist farmers in the process of making decisions on the corn intensification programs.	2,62	Less Well	75	82,4
C	The assist communication between farmers and stakeholders in the corn intensification programs.	4,21	Very good	70	76,9
	Amount	44,77	Good		

Table 1. The role of agricultural extension performance at corn intensification program

Agricultural extension workers always try to facilitate the provision of budgets, production means, and marketing to meet the needs of farmers in the corn intensification program. The agricultural extension as part of non-formal education requires extension agents to always increase farmers' knowledge of agricultural technology innovations that are useful in increasing farm production. Agricultural extension workers become a link of interaction between farmers, entrepreneurs, and the government as part of the efforts of extension workers to communicate with farmers in the success of the corn intensification program [10].

3.2 Effectiveness of Agriculture Extension at the Corn Intensification Program

The effectiveness of the implementation of agricultural extension at the Gorontalo Utara Regency corn intensification program, is based on the 10 (ten) stages of the corn intensification program carried out by extension agents, namely: (1) the use of superior corn seeds, (2) rotation of corn varieties, (3) arrangement of land management, (4) arrangement distance cropping, (5) fertilizing management, (6) arrangement irrigation, (7) weeding weeds, (8) pest and disease control, (9) harvesting, and (10) post-harvest handling.

Oluwasusi & Akanni (2014) explained that the effectiveness of agricultural extension is determined by integration, coordination, and synchronization between all systems in the implementation of the extension.

The agricultural extension program is intended to provide guidelines for achieving agricultural extension objectives. Implementation of agricultural counseling is based on the problems faced by farmers through the search for solutions to existing problems by utilizing agricultural technology effectively and efficiently. The effectiveness of agricultural extension at the corn intensification program in Gorontalo Utara Regency is explained in Table 2.

No	Variable	Score	Category	Percentage of Answers	
				Frequency	%
1	The extension agriculture the use of superior corn seeds.	2,87	Very effective	91	100
2	Agricultural extension about the rotation of corn varieties.	2,45	Very effective	85	93,4
3	The agricultural extension about land management that is good and right.	2,73	Very effective	91	100
4	Agricultural extension about arrangement distance cropping.	1,75	Effective	80	87,9
5	Agricultural extension about fertilizing management.	2,21	Effective	91	100
6	Agricultural extension about arrangement irrigation.	1,85	Effective	89	97,8
7	Agricultural extension about weeding weeds.	1,93	Effective	75	82,4
8	Agricultural extension on pest and disease control.	2,55	Very effective	91	100
9	Agricultural extension about the harvesting.	2,96	Very effective	89	97,8
10	Agricultural extension on post-harvest handling.	2,65	Very effective	85	93,4
	Amount	23,95	Very effective		

Table 2. The effectiveness of agricultural extension at the corn intensification program

The results of the research in Table 2 show that agricultural extension at the corn intensification program in Gorontalo Utara Regency is Very Effective (23.95), meaning that the implementation of agriculture extension based on the stages of the corn intensification program can change the mindset of farmers, especially from aspects of knowledge, skills and attitudes of farmers in the carry out farming.

The effectiveness of agricultural extension in the corn intensification program is carried out in a participatory manner through the work mechanism of the corn intensification program and its methods are adjusted to the needs and interests of farmers. This is supported by the role of agricultural extension workers' performance in motivating, facilitating, educating and communicating that can create a collaborative and participatory mindset in supporting the corn intensification program.

The results of research Gopal & Bahadur (2018) explain that agricultural extension is one form of agricultural development in an area through programs that are adjusted to the needs of the target community with the aim that the community participates in agricultural development programs. The research Eastwood et al., (2017) explain that the main function of agricultural extension is as a motivator, educator, dynamist, communicator, and an advisor to farmers in implementing sustainable agricultural development programs that are specific to the location and can increase farmers' incomes.

4. Conclusions

Based on the results of research and discussion as well as research objectives, the conclusions of this study are the performance of agricultural extension a good role in the aspects of motivators, facilitators, educators, and communicators in the implementation of the corn intensification programs. The effectiveness of agricultural extension is very effective in the implementation of the corn intensification program based on the 10 (ten) stages of the corn intensification programs.

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