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INTRODUCTION TO USING ONION CULTIVATION TECHNIQUES TSS (TRUE SHALLOT SEED) IN GAMPONG LADANG VILLAGE WEST ACEH

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Abstract

The cultivated method for some commodity of plant is one of the keys for optimum production. Shallot is one of main commodity of horticulture that has not been widely cultivated in Aceh Province especially in Gampong Ladang village West Aceh. The introduction of TSS (True Shallot Seed) is one of main idea to promote botany seed of shallot as planting material on shallot cultivation with more benefit compared of shallot bulb. The activities of public service were held in Gampong Ladang West Aceh. The methode of this activity include of: socialization, technical guidance of shallot cultivation, technic of land preparation, technic of seed germination, plantation in field, and evaluated with questioner method. The results obtained by the community are able to cultivated of shallot using TSS. The introduction and implementation of TSS on shallot cultivated is expected as information and made farmers interested to planted shallot in large area and make Gampong Ladang as centra of shallot production especially in West Aceh.

Keywords: ***Shallot, TSS (True Shallot seed), Public Service, Farmer***

1. INTRODUCTION

Intensive cultivation activities are an important factor in obtaining optimal results in a crop commodity such as shallots. Shallots are a vegetable commodity that has high economic value because the price tends to increase from year to year. Apart from that, shallots affect macroeconomics and the inflation rate due to uneven production each year (Handayani, 2014; Fitriana, 2015). The red onion commodity is an important vegetable that is used as a cooking spice. Apart from that, red onions also contain several important substances that are useful for health, including anti-cancer substances, lowering blood pressure, cholesterol and also blood sugar levels (Yanuarti & Afsari, 2016). In shallot cultivation activities, the seeds used are an important factor that supports success.

Azmi et al. (2023) stated that in cultivating shallots, seeds must meet several things, including quality and variety. Iriani (2013) stated that superior seeds are the main limiting factor in shallot cultivation activities.Shallot production is currently decreasing due to the use of consumer bulbs or imported bulbs as seeds. This will reduce the amount of shallot production for consumption. Continuous use of tubers as seeds by farmers can reduce the quality of seeds due to the accumulation of tuber-borne pathogens which can reduce plant productivity (Moeljani et al. 2019). In general, the seeds used in shallots are the shallot bulbs themselves, however the TSS (True Seed Shallot) production technology which produces seeds in the form of seeds from shallot plants is something new for some farmers. TSS has its own advantages compared to tuber seeds, these advantages include: one way to overcome the shortage of planting material, plants produced from TSS are healthier, do not carry disease pathogens, save production costs and are available at any time regardless of the season (Pangestuti & Sulistyaningsih, 2011; Prayudi et al. 2023). The

use of TSS in shallot cultivation cannot be done immediately by farmers considering that information regarding TSS sometimes has not reached farmers due to limited information, and so on. Farmers need direction and guidance regarding the process of cultivating shallots from start to finish until they obtain quality onion bulbs that have a high selling value as a source of household income. Adriani et al. (2022) also stated that after direction and guidance on plant cultivation, it is hoped that the assisted villages can grow and develop to improve MSMEs anda more creative economic sector. This community service activity aims to provide knowledge and information regarding the use of TSS in shallot cultivation, the flow of the process of cultivating shallot plants using TSS, and its application in the field. The output target of this community service is information and procedures for cultivating shallots that are effective and efficient in obtaining maximum results. This service activity was carried out in Gampong Ladang Village, Samatiga District, West Aceh Regency, Aceh Province.

2. MATERIALS AND METHODS

Community service activities will be carried out in August 2023 in Gampong Ladang Village, Samatiga District, West Aceh Regency, Aceh Province. Gampong Ladang Village consists of 36 families and is one of the villages in Samatiga District, West Aceh Regency with coordinates 4014'20"N 96003'32E / 4.2390N 96.0590 E / 4.239;96.059.

2.1 Socialization and Interview

Socialization on shallot cultivation and interviews with farmers were carried out with farmers in the village to find out the extent of their understanding regarding shallot cultivation. The socialization activity began with an introduction to the service team from the Faculty of Agriculture, Teuku Umar University, which was then continued by conveying the aims and objectives to the community present, especially farmers.

Figure 1. Cultivation Socialization

The material presented to farmers included prospects for the development of shallots, techniques and methods for cultivating shallots, an introduction to the types of shallot seeds used as planting material. to post-harvest handling of shallots.

2.2 Distribution of Questionnaires

The questionnaire was given twice in this activity, the first stage was carried out at the start of the meeting and the second was given after the farmers had finished carrying out activities in the field.

2.3 Land Cultivation and Nursery Practices

Land processing activities are carried out directly in the field with the guidance of the service team which includes land sanitation, tillage, making beds and spreading dolomite in the beds. Nursery activities are carried out by making seedling beds as a place to sow red onion TSS which will be used later.

2.4 Data collection

The data used in community service activities is primary data obtained from direct

observation, experience and practice of farmers. Data is presented in the form of image descriptions. Other data was also obtained from distributing questionnaires which were distributed to farmers before and after technical guidance in the field. The data from the questionnaire results will later be presented descriptively.

Figure 2. Female Farming Women Cleaning Cultivation Land

3. RESULTS AND DISCUSSION

Community service activities begin with outreach/counseling activities regarding the prospects for shallot cultivation. The resource person, namely a member of the service team, explained an overview of shallot cultivation as well as future market prospects related to shallots. The team also explained the importance of quality seeds in shallot cultivation activities in order to obtain maximum results. The presentation regarding quality seeds is carried out by showing examples of quality and non-quality seeds, so that farmers understand and are able to differentiate the quality of superior shallot seeds. This is important considering that village farmers have very little information regarding this matter. Providing materials and directions to farmers will have a positive effect on the shallot cultivation activities they will carry out later. Maximum results are expected to provide additional income for farmers and can improve the family's economic level.

Figure 3. Photo with farmers at community service activities

During the socialization/counseling activities, information is also providedThe use of TSS as planting material can increase yields up to two times compared to the use of consumption tubers. Apart from that, the use of TSS seeds produces healthy plants (virus free) and produces tubers of higher quality. Syam'un et al. (2017) stated that compared to tubers, using TSS as planting material has several advantages, namely: (1) only a small amount of seed is needed, namely around 5-6 kg ha-1 compared to using tubers around 1-1.5 tons ha-1 , (2) free from viruses and seed-borne diseases, (3) produces healthier plants, (4) higher yield compared to tubers, (5) there is no dormancy like when using tubers, (6) saves seed transportation costs (7) easier storage and (8) produces larger single tubers. The next activity consists of selecting land that is suitable for cultivating shallots. The criteria for selecting cultivation land must take into account soil conditions

such as: soil pH, soil structure and texture, light conditions in the field and water availability in future cultivation activities. Rahman et al. (2022) Shallot yield and qualityis greatly influenced by the texture and structure of fertile and loose soil for the development of tubers. Appropriate land criteria are expected to provide optimal growth for plants. Shallot plants are suitable for planting on grumosol, regosol and alluvial soil types (Tabuni, 2017). Good soil texture and structure such as looseness and good porosity can support the growth of shallot bulbs, this can be done by adding husk charcoal and manure in land processing activities for shallot cultivation (Irawan et al. 2021).

Figure 4. Red onion plants planted by farmers

After selecting the land, farmers are directed to carry out land sanitation and processing of cultivated land, this is done so that the shallot cultivation land is ready to plant shallot plants. Sanitation is carried out by removing weeds that grow on the land and then continuing with tilling the land using a plowing machine. Sanitation and land processing have a good effect on plant growth. Weeds must be removed to prevent competition for nutrients, light and preventthe emergence of OPT (plant pest organisms), because some types of weeds become homes and also hosts for diseases that can attack cultivated plants (Hidayatullah et al. 2021). After land processing is carried out, farmers are directed to make raised beds. The beds are formed to an appropriate size to make it easier to care for the plants. The bed also functions so that the shallot plants are not submerged in water if there is high rainfall. After land processing activities are completed, farmers are directed to plant shallots with the direction of the service team. Shallot TSS cultivation based on Yuniarti et al. (2022), including planting TSS shallot seeds resulting from seedlings being transferred to beds with a planting distance of 10 cm x 10 cm. Then fertilization is given according to recommendations for shallot cultivation. Plant maintenance includesWatering is done twice a day, namely in the morning and evening. Replanting if a plant dies, then weed control is carried out and plant pest organisms are controlled according to needs and field conditions.

TSS shallot plant maintenance activities are carried out jointly by the community in Gampong Ladang Village, West Aceh. It is hoped that the activity of introducing shallot cultivation techniques using TSS in Gampong Ladang Village, West Aceh will be useful and become a new innovation to increase the potential of shallot farming. In line with Rahayu et al. (2019) that the use of TSS in Sigi Biromaru, Sulawesi has a size that is in accordance with the wishes of farmers and the market. Apart from that, from the economic aspect, a positive response was obtained from respondents that there was a decrease in production costs, this was because the price of TSS was quite affordable compared to tuber seeds. The reduction in TSS prices saves up to 40% of seed production costs incurred by farmers, considering that the price of tuber seeds is expensive, and requires additional costs for transportation and storage. At the final stage of service, farmers are given a questionnaire to evaluate the activities that have been carried out so far. The results of the evaluation through the questionnaire are presented in table 1.

Table 1. Evaluation results of shallot cultivation activities using TSS

No	Description of activities	Before	After
1	Understanding related to TSS seeds	55%	85%
2	Able to sow shallot seeds	45%	90%
3	Able to cultivate shallots using TSS	60%	95%

The evaluation results show that a large number of farmers are able to differentiate between quality seeds and non-quality seeds. Apart from that, farmers have also been able to carry out land processing and plant shallots directly on the land. It is hoped that all of these service activities will have a positive impact on the community in planting shallots because it has good prospects and is able to improve the household economy. The same results were obtained by Arianti et al. (2020) who also showed the results of a questionnaire that the majority of farmers in Batu Ampar Village, Bengkulu, believe that cultivating shallots provides economic benefits, and can increase the good perception and desire of farmers to adopt shallots as a superior economic source.

4. CONCLUSION

The series of community service program activities related to shallot cultivation in Gampong Ladang Village showed good results as evidenced by the enthusiasm of the community in participating in all shallot cultivation activities. The results of this service also answer the goal, namely that the community has the ability to determine quality and non-quality seeds and is able to carry out shallot cultivation activities on cultivated land.

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