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CULTIVATION AND PLANTING OF RED GINGER (ZINGIBER OFFICINALE VAR.RUBRUM) USING BAG CULTURE TECHNOLOGY DURING THE NEW NORMAL PERIOD IN MEASLES VILLAGE KADUHEJO DISTRICT PANDEGLANG

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ABSTRACT

As a solutive effort in dealing with the impact of the covid-19 pandemic by using land in measles villages. Red ginger cultivation is one of the alternatives in efforts to improve the economy of Small and Medium Micro Enterprises in the countryside. Ginger plants can be used as antibacterial, antioxidant and herbal medicinal ingredients or made immunity-enhancing drinks. The purpose of this devotional activity is to provide counseling of cultivation and processing of red ginger plants. The method is done by cultivating and processing red ginger plants using bag culture technology, planted in polybags. The cultivation of red ginger plants is carried out by students who conduct independent work lectures in partnership with Karang Taruna Desa Measles.
Keywords: *Red Ginger;Bag Culture;health;*

INTRODUCTION

The Covid-19 pandemic poses significant challenges to human life globally. One of the most affected sectors is the economy of the community. Global economists predict that no country will achieve positive economic growth targets this year due to faltering production and decreased consumption due to limited community activities to prevent Covid-19 transmission.

Therefore, the community must take advantage of the potential and business opportunities that exist today. One of the business opportunities that can be utilized is related to increasing endurance both conventionally and traditionally. Traditionally, one natural immune enhancer is consuming rhizomes containing curcuminas essential oils' main component. One of the natural ingredients that contain curcumin is red ginger.

Ginger plant (Zingiber officinale) can be used as an antibacterial, antioxidant and herbal medicine ingredient or made a drink. Ginger rhizomes contain essential oils and oleoresin. Active substances in essential oils include shagaol, gingerol, zingeron and other natural antioxidant substances. While oleoresin is one of the compounds of ginger content as a spicy and bitter taste. In recent decades, gingers studied extensively in medicine contain various bioactive compounds such as tannins, flavonoids, glycosides, essential oils, furostanol, spirostanol, saponins, phytosterols, amides, and alkaloids. As an ingredient in herbal medicine, ginger has cough medicine, body warmers, appetite enhancers, and low body stamina (immune system).

Red ginger with the Latin name Zingiber officinale var. Rubrum has an essential oil content of 2.58 - 2.72%. In addition, the content of active chemical

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compounds gingerol, zingeron, shogaol, gingerol and zingiberen in red ginger causes red ginger to have excellent properties for health (Triyono &Sumarni, 2018) Therefore, red ginger becomes one of the most sought after herbal plants because it is believed to be efficacious to strengthen immunity or endurance. This has an impact on the high demand for red ginger in the market. Increasing market demand, farmers are also required to more optimally increase planting area to cover the demand.

Based on reasonable conditions, the cultivation and processing of red ginger plants in Measles Village can meet the demand for red ginger in the market. Cultivation of ginger plants is done using bag culture technology by using a planted system in polybags. Cultivation and processing of red ginger is also carried out to foster community spirit in developing and optimizing the use of home yards. In addition, there are still many people who do not understand the opportunity of red ginger in the market today so that people in Measles Village are not too interested in cultivating red ginger plants and processing them into products that are ready to be sold in the market. Therefore, it is necessary to hold community service that can provide an understanding of it.

Based on the results of the analysis of the situation of Measles Village obtained the following partner problems:

1. Lack of complete information about the benefits of red ginger plants during the Covid-19 pandemic.
2. The majority of measles villagers are farmers and on average own land but have not maximized the use of such land to cultivate crops of economic value.
3. Targets and exteriors of Community Service activities on Resilience Schemes

Pangan (PbM-KP) is a community in Measles Village kaduhejo district of Pandeglang regency able to cultivate red ginger plants using bagtechnology.

The expected contribution of this community service activity is to improve the community's economy and the body's resilience to face this new normal situation. This activity is also expected to help residents overcome the problem of land limitations to grow ginger, because with the introduction of this bag culture technique, the community can take advantage of existing land

METHOD

The results of field studies and interviews of 56 group student work lectures with partners are used as follow-up material to assess problems owned by partners. Based on the results of the problem study, the main priority of the partner's problem is how to cultivate and process red ginger plants using bag culture technology during the new normal in Measles Village of Kaduhejo District of Pandeglang Regency as an effort to maximize land use to grow crops of economic value.

The bag culture system is the cultivation of plants using a planted system in a polybag. This ginger cultivation system in sacks has been developed in Hawaii since 2004(Hepperly dan Francis, 2017). In Indonesia itself cultivation in this way has been done by several parties, both institutions and individuals, one of which is by the Spice and Medicinal Plant Research Center (Balittro). Compared to conventional planting systems, this bag culture system has several advantages, including; it can be done on limited land, save money in water use, there is no need to regulate drainage systems, soil conditions are more controlled, because each plant is in a different sack, to minimize pest and disease attacks, and production is higher.

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To achieve the expected target, this partnership program is carried out through the following implementation methods:

1. The preparatory stage is planning a devotional program that includes: (a) conducting field surveys and (b) selecting seedlings.

2. The implementation stage is in the form of red ginger plant cultivation activities using bag culture technology to increase public knowledge about the efficacy of ginger, procedures for growing red ginger to meet the demand for red ginger in the market, and improving people's skills in processing red ginger in order to take advantage of red ginger opportunities on the market today Community service activities in the form of cultivation and processing of ginger plants using bag culture technology as an effort to maximize land use to grow crops of economic value In detail the stages are described as follows:

1. Workshops and socialization

The first stage begins by providing information to the public about cultivating red ginger with a bag culturesystem, which includes the characteristics of the red ginger plant, efficacy or usefulness, post-harvest processing and business opportunities.

2. Breeding and seeding

The second stage is the nursery, which begins with selecting or selecting red ginger rhizomes. The red ginger rhizome to be selected has specific criteria, including large and complex size, no cuts orscratches, and clean from pests in the form of white patches(Rahman, 2009). The red ginger rhizome selected comes from red ginger that is approximately one year old. After selection, the red ginger rhizome is washed thoroughly and soaked in a solution of fungicides and bactericides for 30 minutes (Supriyanti, 2015).

This process aims to prevent the growth of pathogens that often attack, such as: Ralstonia solanacearum, Erwinia, Fusarium,and various other pathogens (St.Irling, 200 2; Inden, 1988).

Furthermore, the red ginger rhizome is cut into pieces as much as 3 segments or about 2.5-5 cm, each piece of rhizome piece must have a bulge of the white shoot's eye (Bahret, 2008; Geta, 2011).

The rhizome pieces are then planted in a pot-tray. Previously in the pot-tray has been added planting media consisting of fiber / moss, burning husks, and compost with a ratio of 1: 1: 1. Pieces of rhizomes that have been planted in pot-trays are maintained in green houses or shaded places.

This nursery activity is carried out for approximately 30 days until the rhizome ginger Raise buds with a length of about 15 cm During that period, seedlings should be maintained by doing regular watering and regular planting.

3. Maintenance

The third stage, after the seeding process, red ginger seeds will enter the maintenance stage by moving red ginger seeds from the pot-tray into polybags. This stage starts from the seed selection process first. Seedlings are separated based on the size and condition of the shoots because not all shoots grow equally (Supriyanti, 2015). Then, the seedlings are removed from the pot-tray and transferred into a polybag that has contained planting media. The planting medium used in the maintenance stage consists of humus, soil and chaff with 1:1:1.

4. Planting in Polybag

The last stage of red ginger cultivation is the process of planting ginger seedlings in polybags. The first step to do is to prepare the polybag to be used. The soil used in the polybag has been mixed with sndang fertilizer, cocopeat and wood

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powder first. Roll the sack to a height that corresponds to the red ginger seedlings. The process of planting red ginger at the beginning of planting requires high rainfall so that the optimal time of planting begins in the middle or end of the rainy season(Geta, 2011). The process of watering manually can also help this. Whereas if the age of red ginger has stepped on 5 months, irrigation should be reduced and vice versa propagated sunlight, because at this age red ginger focuses the growth of rhizomes. During planting until the harvest period, ginger plants should be treated and routinely embroidered, weededing, and growing. The yield for the harvest of red ginger is estimated between 8-12 months. Embroidery is done by replacing and getting rid of red ginger seeds that do not grow, damage, or die. Weeding red ginger plants is done by removing weeds and other plants that can interfere with plant growth. On the other hand, it is also done by growing and raising the soils that fall or landslides from existing beds. This aims to re-close the base of the plant stem so that the plant becomes stronger. In addition, it is also necessary to do watering and fertilization regularly

RESULTS

This community service activity can be described through two activities, namely the preparatory stage and the implementation stage. The preparatory stage is the planning stage of the devotion program, which consists of:

1. Conduct field surveys
   The field survey was conducted to coordinate with the village of Measles Pandeglang Regency. Coordination is carried out with Mr. Adad Suganda and Mr. Raya and Karang cadets willing to become partners. The village supports the devotional activities carried out by the devotional team.
2. Determination of location and planting time
   Based on the coordination results with partners, redgingercultivation was implemented on Sunday, August 1, 2021. In Monggor Village

After the preparation stage, it is followed by the implementation stage. At the implementation stage. Cultivating red ginger plants using *bag culture* technology during the *new normal* in Measles Village of Pandeglang Regency was held on Sunday, August 1, 2021 in Tanah Bapak Raya.

Processing advice The benefits of red ginger can be obtained by various means of processing. Starting from being processed into ginger drinks, added to food, made into ginger shots, to used as essential oils. Now many red ginger drinks have been processed into ready-brewed drinks.

According to the 56 most popular processed, gingerrhizomes are raw materials of drinks, such as ginger wedang, sekoteng, bandrek, herbal medicine,and others.

One way of processing it is made into ginger wedang. How to make it is as follows: Prepare ingredients in 400 ml of water, 100 grams of ginger,1 cinnamon finger segment, 1 stem of lemongrass, and 3 tablespoons of java sugar (comb). Take the lemongrass stems and geprek. Prepare the cinnamon. Bring the water to a boil, put in the lemongrass ginger, cinnamon. Cook over low heat, put in the java sugar. Check the taste and serve.

Meanwhile, if you want to try to process a piece of ginger, here are the stages:

Prepare 1 liter of water, 2 tbsp brown sugar, coarse comb, 2 segments of red ginger that have been shaken or defiled,2 stems of lemongrass that have

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been defiled,and2 sheets of pandan leaves tied in knots. Then prepare 1 handful of roasted peanuts that have been discarded skin 50 grams of boiled green beans, 1 sheet of bread fresh wheat diced, kolang-kaling that has been boiled, and a pinch of salt. Boil the water until it boils. Put in the ginger,lemongrass, and pandan leaves. Cook until the aroma comes out. Add the brown sugar and salt. Stir until all the ingredients are evenly mixed or the sugar dissolves. Strain the water to separate the ginger,lemongrass, and pandan leaves. Place the boiled water in a container. Add toppings such as roasted peanuts, kolang-kaling,and freshbread. Sekoteng is ready to be enjoyed while warm. Also Read: Herbs and Seeds **Stepsof red ginger** cultivation **using** bag culture **technology.** Cultivating red ginger using bag culture technology or planting ginger in polybags or sacks is considered more practical because it does not require the manufacture of beds and does not spend much space or land used. In addition, the planting of ginger in *polybags /sacks* causes the growth of ginger faster than in the field / on the moors while the planting steps begin with sowing ginger seedlings to quickly grow, prepare planting media, plant ginger, do maintenance and harvest.

CONCLUSION

Overall, planting red ginger using bag culture technology during the new normal in Measles Village of Pandeglang Regency " can be excellent and successful. This activity is a breakthrough in outsmarting the limitations of land for farming and efforts to increase the endurance of the community in the Covid-19 pandemic. In addition, this activity can encourage the economic independence of partners by providing knowledge in the cultivation of red ginger plants of high economic value. Partners give a very positive response to the activities carried out and assess these activities are very beneficial.

REFERENCES

Muhibah Siti, 2020 PEMAANFAATAN JAHE MERAH (Zingiberofficinalevarrubrum) DALAM MENINGKATKAN IMUN TUBUH DI MASA PANDEMI COVID-19

PADA MASYARAKAT KELURAHAN DERINGO KOTA CILEGON. Jurnal Pengabdian Dinamika, Edisi 7 Volume 1_November 2020

Nana, 2020. Budidaya dan Pengolahan Jahe Merah (Zingiber officinale var.rubrum) Menggunakan Teknologi Bag Culture Pada Masa New Normal di Desa Darmaraja Kecamatan Lumbung Kabupaten Ciamis. Abdimas Umtas: Jurnal Pengabdian Kepada Masyarakat LPPM-Universitas Muhammadiyah Tasikmalaya Volume: 4 Nomor: 1 E-ISSN: 2614 - 8544

Bahret, M., Steinberg, C. 2008. Spice Up YourSummer Greenhouse with Ginger. Tomatero Publication Inc.

BPS Kab. Ciamis. 2016. Lumbung Dalam Angka 2016. Lumbung: BPS Kab. Ciamis

Geta, E., Kifle, A. 2011. Production, Processing and Marketing of Ginger in Southern Ethiopia. Journal of Horticulture and Forestry. 3 (7): 207-213.

Inden, H., Asahira, T. and Hirano, A. 1988. Micropropagation of ginger. Acta Hort. 230:177184

Paul R. H, Francis Z. Boron. 2017. Calcium Deficiency causes Ginger Zingiber officinale Roscoe Diebackin Hawaii. Agri Res & Tech: Open Access J; 9(1): 555755. DOI:
10.19080/ARTOAJ.2017.09.555755.

Rahman, H., Kishore, K., Denzongpa, R. 2009. Traditional Practices of Ginger Cultivation in Northeast India. Indian Journal of Traditional Knowledge. 8 (1): 23-28.

Stirling, A.M. 2002. Erwinia chrysanthemi, the cause of soft rot in ginger (Zingiber officinale) in Australia. Australasian Plant Pathology. 31(4):419-420.

Supriyanti, H. 2015. Untung Besar Budidaya Jahe Merah. Yogyakarta: Araska.

Triyono K, Sumarmi. 2018. Budidaya Tanaman Jahe di Desa Plesungan Kecamatan Gondangrejo Kab. Karanganyar Provinsi Jawa Tengah. ADIWIDYA, 2 (2) – November 2018.

Zuhro, F., & Sukamto, D. S. 2018. Pengaruh Teknik Pemangkasan Batang Terhadap Produktivitas Jahe Gajah (Zingiber Officinale Var. Officinale) dengan Sistem Penanaman Bag Culture. Bioma: Jurnal Biologi dan Pembelajaran Biologi, 3(1).