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Training And Certification of Competency Assessment Of Forest Plant Seed Quality

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Abstract

Forest plant seeds can be in the form of generative or vegetative used to breed forest plants. Sources of seeds come from stands inside and outside the forest area to produce quality seeds. The availability of quality forest plant seeds is still limited. The Faculty of Forestry, Winaya Mukti University, is interested in providing community service to partners in the form of training and certification of expertise in determining the quality of forest plant seeds to prepare group members with a nationally recognized BNSP certificate. This community service (PKM) has three partner groups: the Jingkang Village group, Tanjungmedar District, Sumedang Regency, Loa Village Group, Paseh District, and Bandung Regency Forest Village Community Institution (LMDH) Cempaka Bentang and Laksana Village, Ibun District, Kabupaten Bandung. Bandung called the Forest Farmers Group (KTH) Kamojang. The method begins with training on seed handling and quality inspection of forest plant seeds which includes how to take seed samples, analyze seed purity, determine the weight of a thousand grains, determine water content, and test germination. Skill competency certification activities refer to the International Seed Testing Association (ISTA). The seeds used are Sengon, Gmelina, Suren, and Trembesi seeds. All partner groups welcome this activity and hope that this activity can continue to improve the knowledge and skills of participants in supporting superior human resources and forestry professionals to support the community's economy.
Keywords: Community service, training and certification, seed quality

INTRODUCTION

Seedling of forest plants is related to developing genetic resources, restoration of forest plants, procurement of seeds and seedlings, distribution of seeds and seedlings, and certification. Plant seeds are in the form of generative or vegetative used to reproduce forest plants. Seeds that are sown and have germinated will go through the growth and development of young plants called seedlings. Sources of seeds from stands inside and outside the forest area to produce quality seeds (Peraturan Menteri Kehutanan, 2009).

The availability of quality forest plant seeds is still limited. This condition is due to the little knowledge of the community in determining quality forest plant seeds. Seed quality from seed production techniques, seed handling, and seed sources (genetic markers) plays a vital role in multiplying plants that can grow well at high productivity levels (Sudrajat et al., 2015). These good quality seeds will grow into quality seeds. Quality seeds are critical, especially in land rehabilitation efforts. The crucial land area in 2018-2020 is still high, reaching ± 14 million hectares. The site consists of 4.55 million ha of critical land and 9.45 million hectares of necessary land (Kementerian Lingkungan Hidup dan Kehutanan (KLHK), 2020). Based on this, the sustainability of forest and land rehabilitation activities requires the availability of quality seeds and seedlings to increase the success of forest and land rehabilitation. The results of this activity will create an excellent, fresh, comfortable, and healthy environment (Nizar et al., 2019).

The initial step to providing these superior seeds and seedlings is to conduct training and certification to determine the quality of forest plant seeds. The training activity aims to improve the ability of participants to assess the quality of forest plant seeds. The certificate of expertise, in this case, is an acknowledgment of the participant's ability to determine the quality of forest plant seeds. Seed quality certification requires test standards and seed quality standards. The test standard refers to the International Seed Testing Association (ISTA). This activity is to prepare

qualified group members certified by the National Professional Certification Agency (BNSP) applicable at the national level.

METHOD

The training and certification participants are partner groups of the Faculty of Forestry, Winaya Mukti University, totaling three groups. The three groups are a group of residents of Jingkang Village, Tanjungmedar District, Sumedang Regency, the Cempaka Bentang Forest Village Community Institution (LMDH) Group in Loa Village, Paseh District, Bandung Regency, and the Forest Farmers Group (KTH) Kamojang from Laksana Village, Ibun District, Regency of North Sumatra. Bandung. Each group consists of 20 people. Training activities and certification of expertise competencies in seed handling schemes and quality inspection of forest plant seeds include: how to take seed samples, analyze seed purity, determine the weight of a thousand sources, determine water content, and test germination. The seeds used include Sengon, Gmelina, Suren, and Trembesi seeds. The service is The training and certification participants were on June 7-10, 2022.

RESULTS

This community service activity was attended by 60 people, consisting of 20 people from Jingkang Village, Tanjungmedar District, Sumedang Regency, Loa Village, Paseh District, Bandung Regency and Laksana Village, Ibun District, Bandung Regency. Participants in the activity consisted of adult women and men.

Counseling for seed is carried out using lecture, discussion, question, answer methods, and direct practice. The training results showed an increase in group members' understanding and skills before and after seeding. The evaluation results showed that almost 90% of group members understand seed and how to improve seed quality. This means that all group members understand the material and practice that the speaker has conveyed. Therefore, it is hoped that group members can improve their seed and seed quality skills to improve the family economy.

DISCUSSION

Seed handling activities aim to obtain forest plant seeds of physical and physiological quality. Seeds that have not reached the perfect level of maturity must cure. If the source is ripe, but the embryo has not developed, further cooking is done (after ripening), so the origin becomes fully mature. Seeds not requiring additional handling, such as curing, can immediately be seed extracted (Figure 1). The extracted roots were then cleaned, selected, and sorted (seed sorting) based on the weight and size of the seeds (Figure 2). The sorted seeds are dried to reduce the moisture content in the roots. Drying is done by drying or drying in the sun. The dried seeds are stored in plastic and labeled.

Seeds are a national and international trade commodity for planting, tree breeding, and resource conservation programs, so information on seed quality is essential. Seed quality testing based on standardized testing standards is helpful to ensure consistent results when testing a group of seeds (seed lots) by other parties or certification bodies and as a reference for the application of seed legality. The activity of checking the quality of forest plant seeds using the International Seed Testing Association (ISTA) method. This training and certification scheme aims to regulate the training and provide certificates of test results for seeds certified by the National Professional Certification Agency (BNSP). The initial stage of checking the quality of seeds is checking the uniformity of the seed group. The next activity is to determine the water content. Moisture content is the weight lost when the seeds dry using a specific method (Agustin & Prananda, 2017). The purpose of determining seed moisture content is to define and regulate the appropriate seed moisture content during storage. The method used is oven drying at a temperature of 103°C 2 for 17 hours 1. The next step is to analyze the purity of the seeds by separating the seeds from seed dirt, empty seeds, and other types of seeds (Figure 3). This purity analysis aims to determine the Sample's percentage composition to identify various seeds and seed impurities in the seed sample (Sudrajat et al., 2015). After that, the stage of determining the

Seeds' weight is like in Figure 4. Use thousand-seed weight determination when measuring the constant weight of seeds to facilitate thousand-seed weight determination in grams and convert it to determine seed requirements in kilograms (kg) of seed per hectare.

The last step is to test germination. Germination occurs in pure seeds, pure seeds are whole seeds, and seed pieces have the size of half whole seeds according to ISTA. Germination occurs from seeds in the soil absorbing water to activate embryonic cells to produce new plants (Ai & Ballo, 2010). After carrying out all stages of the activity, the last activity is certification of expertise competency by checking the quality of forest plant seeds by BNSP to improve the human resource skills of partner groups (Figure 5).

CONCLUSIONS AND RECOMMENDATIONS

Community service activities, namely: Jingkang Village group, Tanjungmedar District, Sumedang Regency, Loa Village Group, Paseh District, Bandung Regency, and the Laksana village group, Ibun District, Bandung Regency, have finished carrying out the stages of Handling Forest Plant Seeds and Quality Checking Forest Plant Seeds including how to take sample seeds, analyze seed purity, thousand-seed weight determination, determine moisture content and test germination. In general, all partner groups welcomed the activity well and hoped that this activity could continue. This activity aims to increase knowledge and skills in supporting superior and professional human resources in the forestry sector to improve the community's economy.

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APPENDIX

Figure 1. Seed Extraction

Figure 2. Seed Sortation

Figure 3. Seed Purity

Figure 4. Thousand-Seed Weight Deermination

Figure 4. Certification Activities