

Socialization of Eco Enzyme Utilization for Environmental Health in Gapoktan Seputih Raman, Lampung

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Article Info

Volume 2 Issue 2
June 2024

Article History

Submission: 06-06-2024

Revised: 14-06-2024

Accepted: 15-06-2024

Published: 16-06-2024

Keywords:

Eco enzyme, blessing waste, seputih raman

Kata Kunci:

Eco enzyme, sampah berkah, seputih raman



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Abstract

Eco enzymes have tremendous benefits for family health, the environment, agriculture, and livestock. However, in general, farmers and breeders have not maximally utilized eco-enzymes made from fruit and vegetable peels. This PKM activity aims to socialize how to make and use eco enzymes for various purposes, namely, environmental health, personal and family health, and utilization for purposes in the fields of animal husbandry and agriculture. The PKM method is a meeting for socialization and sharing sessions, a demonstration plot for making eco enzymes, and assistance, accompanied by an evaluation of the results of the demonstration plot in the WA group. The results of this PKM activity have been able to enlighten participants, provide direct experience of making eco enzymes, and provide an understanding that the use of eco enzymes, which are environmentally friendly, can reduce the use of chemical fertilizers. Chemical fertilizers, besides being expensive, can damage the environment in the long run by removing soil nutrients. Further sharing sessions were conducted through the WA group channel. The PKM results also provide an understanding that waste can bring blessings.

Abstrak

Eco enzyme memiliki manfaat luar biasa untuk kesehatan keluarga, lingkungan, untuk pertanian dan peternakan. Namun, secara umum para petani dan peternak belum memanfaatkan eco enzyme yang terbuat dari kulit buah dan sayur ini secara maksimal. Kegiatan PKM ini bertujuan untuk mensosialisasikan cara pembuatan dan pemanfaatan eco enzyme untuk berbagai keperluan yaitu, kesehatan lingkungan, kesehatan pribadi dan keluarga serta pemanfaatan untuk keperluan di bidang peternakan dan pertanian. Metode PKM adalah pertemuan untuk sosialisasi dan sharing sessions, demplot pembuatan eco enzyme dan pendampingan diiringi evaluasi hasil demplot dalam group WA. Hasil kegiatan PKM ini telah mampu mencerahkan peserta, memberikan pengalaman pembuatan eco enzyme secara langsung, memberikan pemahaman bahwa penggunaan eco enzyme yang ramah lingkungan, dapat mengurangi penggunaan pupuk kimia. Pupuk kimia, selain mahal, dalam jangka panjang dapat merusak lingkungan, yaitu menghilangkan unsure hara tanah. Sharing session lanjutan dilakukan dengan saluran WA group. Hasil PKM juga memberi pemahaman, bahwa sampah dapat membawa berkah.

1. INTRODUCTION

Eco-enzyme has long been known to some environmental activists. Eco enzyme, which is usually abbreviated as ezy, is made from household organic waste materials, namely fruit peels and vegetable peels that are usually wasted. Making eco-enzyme, as an environmentally friendly appropriate technology material, is very cheap and young. Eco enzyme, discovered by

Dr. Rosukon Poompanvong, from Thailand, is known as a multi-benefit magic liquid (Noviyanti & Muliarta, 2021). With a composition of 1-3-10, namely 1 part brown sugar, 3 parts fruit peel, and 10 parts water, Fruit peels and vegetable skins that have been wasted can become enzymes that are rich in benefits. The process is a fermentation process that is tightly closed so that it is anaerobic without oxygen entering to avoid the growth of harmful fungi and interfere with fermentation.

Ecoenzyme, which is made from various fruit skins, has many benefits, both for human health and for agriculture, and is even able to eliminate hazardous materials scattered in the air (Mardhiyah et al., 2021). Ezy as a substitute and alternative for fertilizers and eliminates nuisance plant pests. Appropriate technology that utilizes natural ingredients with this anaerobic process, does not require expensive costs and the materials for making it, are cheap and easily available in the household, even the remains and fruit peels that are often discarded (Wikaningrum & El Dabo, 2022). With proper mixing and dilution using water, the utilization of eco enzyme becomes very broad and becomes an enlightening alternative. Easy waste management by making it a useful resource for life, as a source of energy that is useful for humans, makes waste upscale. This paradigm must continue to be promoted in order to increase the usability of waste in society (Septiani et al., 2003). Waste is no longer seen as a harmful and disgusting material, useless and needs to be avoided.

The benefits of eco enzyme (Ezy), are numerous. Benefits for health, for environmental health and for agriculture as an environmentally friendly natural fertilizer. Personally, Ezy can be utilized as a means of treating symptoms of skin diseases, such as psoriasis and reducing the growth of bacteria that cause boils and acne (Ramadani et al., 2022). Ezy liquid can also be used as a preservative and reduce spoilage in fruits that have been pre-treated with this eco enzyme (Nurlaela et al., 2022).

On the other hand, our communities, especially farmers and ranchers in rural areas, have not been enlightened. This happens due to limited access to information and proximity to environmental activists, because enlightenment is still not open to them. This causes the utilization of eco enzyme has not been well implemented. The unaffordability and awareness to utilize, make and apply eco enzyme, is still covered by the advertisement of the massive use of fertilizers and chemicals that have been used for decades. This causes our farmers, not yet open to the willingness to start switching to the manufacture and utilization of this eco enzyme.

On the other hand, the potential of agriculture and animal husbandry in Indonesian farming families is very large. This potential should be directed to the development of sustainable agriculture that is environmentally friendly and cheap, in order to anticipate the soaring prices of fertilizers and pesticides that are often complained about by farmers. The use of environmentally friendly fertilizers such as this ezy liquid, can increase the empowerment of farmers from an economic perspective, because it is cost-effective and does not damage the environment. Massive efforts are needed, collaboration between educational institutions and communities and community economic empowerment institutions, (Waeno et al., 2024) so that people are increasingly aware and empowered. Thus, the community becomes independent and no longer dependent on other sectors, which are often financially burdensome.

The farmer group in Seputih Raman area, Central Lampung, has received counseling on the benefits of eco enzyme, previously by eco enzyme activists. However, the families of this farmer group in general have not been moved to start making and utilizing their knowledge about eco enzyme for agriculture as well as for personal health, the environment and the livestock pen area. In a meeting with several farmer groups, some farmer groups felt that they had received counseling from environmental activists. However, only one person was willing to make his own or practice making eco enzyme as he had learned.

This PKM activity is carried out to provide further action, more comprehensive knowledge as well as training and demonstration of making eco enzyme for various purposes. Real examples in the sense of making eco enzyme demonstration plots, will provide practical examples of how to make good eco enzyme as the theory made by the team. This PKM team in providing material for making eco enzyme even provides the equipment needed to make eco enzyme. In addition to making eco enzyme demonstration plots, the material provided includes how to use eco enzyme for family health, environmental health and for agricultural use and the health of livestock cages. Overall, the PKM material is also about the utilization of TOGA around the house, because questions related to health will also be related to the utilization of TOGA (family medicinal plants) around. This will have a more positive impact on improving the health of our farming families (Suharti et al., 2021).

The utilization of TOGA itself, for the families of the Seputih Raman farmer group, is not new. They are used to utilizing TOGA as an alternative ingredient for health problems. Some Gapoktan women have also produced herbal powder to be marketed. It can be said that the herbal tradition has become an Indonesian tradition and culture from generation to generation, so that herbal talk is no longer foreign as a healthy and healthy conversation material (Kartika & Suharti, 2023).

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This PKM activity aims to provide a real example in the form of a demonstration plot for making eco enzyme and its utilization for family health, environmental maintenance and its utilization for agriculture and environmental health of cages and livestock. With the background of the Seputih Raman farmer group members who all own agricultural land and raise livestock, this PKM activity is very much needed by the participants, namely farmer group members and families of the Seputih Raman farmer group, Central Lampung.

2. METHOD

This PKM activity was carried out by socializing the making and benefits of eco enzyme, demonstration plot for making eco enzyme, and discussion on the use of eco enzyme for family health, agriculture and animal husbandry. PKM activities also provide opportunities for participants to experience the benefits and utilization of eco enzyme and its dregs for health. An example of the use of eco enzyme is directly practiced, namely during the demonstration plot

process, one of the PKM team suffered a knife cut, so it can be smeared with eco enzyme liquid. The continuation of the activity is monitoring and sharing information about the benefits of eco enzyme through the WA group forum.

The following is the flow of PKM activities made in the form of a chart as follows:

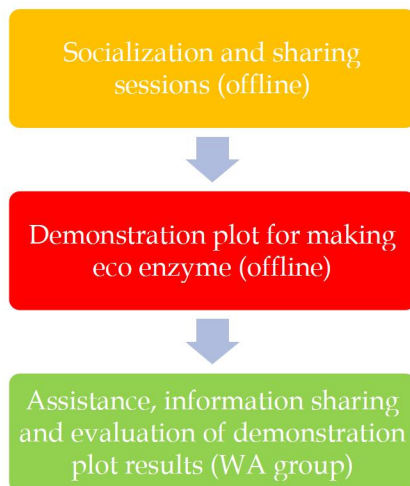


Chart 1. PKM Activities Flow

3. RESULT AND DISCUSSION

The implementation of this PKM activity went through 3 stages. Starting with a pre-survey of the participants' situation, an agreement on the implementation of PKM activities with the farmer groups and GaPokTan Seputih Raman, Lampung and the implementation of PKM activities.

Monitoring and evaluation of the activities were carried out informally. Monitoring is carried out through communication in the WA group, because the distance between the participants and the PKM team is very far. The success of making eco enzyme is done through remote monitoring, in the WA group. Questions about eco enzyme and flyers about the benefits of eco enzyme were also sent in the WA group. This is to continue to establish communication with the participants, in case there are things that have not been understood or not understood by the participants.



Picture 1. Demonstration plot of making Eco enzyme by PKM team to GaPokTan

To explain in detail the implementation of this PKM activity, it is necessary to make more detailed activity charts and tables, so that the depiction is clearer. The following table is made to explain and explain this PKM activity as follows:

Table 1. PKM Activity Table (source: Author's, 2024)

No.	Activity	Treatment	Description
1.	Pre-survey	Describe the needs of the participants, survey the location of the activity	Location visit
2.	Activity implementation agreement	Activity agreement	Agreed between the PKM team leader and the chairman and coordinator of the farmer group
3.	Activity implementation <ul style="list-style-type: none"> - Socialization and sharing sessions - Demonstration plot for making eco enzyme with the composition or formula: 1-3-10 - 1 part brown sugar, 3 parts fruit and vegetable peels, 10 parts water stored in a plastic jar for 3 months (fermented) - Sharing informations, monitoring and evaluations on group WA 	Implementation of demonstration plots, socialization and discussion on the use of eco enzymes for family health, environmental health, agriculture and animal husbandry.	Implemented with tools and equipment for eco enzyme demonstration plot: Materials: fruit and vegetable peels: banana peels, carrot peels, pineapple peels, watermelon peels, apple peels, orange peels, brown sugar and water. Tools: cutting board, cutting scissors, knife, 20 liter plastic jar container,
4.	Evaluation	Informal question and answer	Implemented
5.	Advanced result monitoring	WA group forum: sharing flyers and information on the benefits of eco enzyme, questions and answers on the benefits of eco enzyme, monitoring the results of making eco enzyme in demonstration plots.	The fermentation process of making eco enzyme goes well, because the eco enzyme with the formula 1;3;10 is fail-proof. The results can still be utilized according to the needs and conditions of the eco enzyme.

This PKM activity has been carried out well. The participants who are family farmer groups have understood the benefits of eco enzyme and with the demonstration plot, all ezy making equipment is provided by the PKM team. GaPoktan feels more real seeing the process and the demo the results they will enjoy together and can be used for health and agriculture.

Some things that are important notes in this activity are real examples and support from all parties so that farmers continuously utilize this eco enzyme for various purposes. The use of eco enzyme will support environmental sustainability, reduce the use of expensive chemical fertilizers, reduce the use of chemical pesticides which in the long run can harm the environment and disrupt soil health and nutrients. In addition to the above, ezy can also be used to accelerate the process of making compost fertilizer from livestock manure owned by farmers. This compost fertilizer is abundantly available, and the process is often constrained by time in order to be used as fertilizer. With eco enzyme, the composting process can be shortened (Ramli & Jap, 2021).

To anticipate the decline in the spirit of farming using eco enzyme, flyers and testimonies of the benefits of eco enzyme to overcome health problems and its utilization for agriculture, animal husbandry and environmental care are periodically sent. A healthy and good environment, both social and physical, can increase the spirit of life and the spirit of hard work for the whole family (Mamis et al., 2024).



Picture 2. Utilization of Ezy for various health purposes and other organic fertilizers

It is understandable if our farmers are often entangled in debt, because they are waiting for a long harvest period and the high price of fertilizers, while daily needs cannot be delayed anymore (Suharti, 2021). This PKM activity is also expected to improve the welfare and health of the farmer group families in terms of physical, environmental and economic health (economic improvement) indirectly. The Ezy utilization flyers were taken by the team from the eco enzyme activist group in Indonesia. With the flyers of the benefits of eco enzyme sent through the WA group, it is hoped that it will make it easier and enlighten the benefits of Eco enzyme or Ezy widely.

4. CONCLUSION

The PKM activity of socializing the making of demonstration plots and the use of eco enzyme went well and received a positive response from the participants, namely farmer group families in Central Lampung. There were almost no obstacles in the implementation of the activity. This activity also provides motivation and better understanding, because it is accompanied by monitoring the making of eco enzyme and sharing sessions in the WA group. It is necessary to continue to grow motivation, in order to continue to pump the enthusiasm of the Gapoktan in utilizing eco enzyme, and utilizing household wet waste into useful eco enzyme. Waste is expected to be one of the sources of energy and a source of family economic empowerment, because it is cheap, easy, and abundant. Waste brings abundant blessings. In the future, the cooperation of various elements of society must be mobilized, so that this awareness will produce maximum results. This is a new challenge, and one of the efforts, to socialize the importance of environmental awareness to all elements of the wider community.

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