**JCSAS**

**Journal of Community Service and Application of Science**
ISSN:2962- 2263, Vol. 2, No. 1, Juni, 2023,

# Pengembangan Trichokompos Dalam Pemberdayaan Kelompok Tani Mekar Tani Di Nagari Piobang, Kabupaten Lima Puluh Kota, Sumatera Barat

# Development Of Trichokompos In Empowering Mekar Tani Farmer Groups In Nagari Piobang, Lima Puluh Kota Regency, West Sumatra

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**Article History:**
Received:
24-05-2023
Revised:
18-06-2023
Accepted:
29-06-2023
Published:
29- 06-2023

**Abstract**

Farmer Group "Mekar Tani" is one of the farmer groups in Jorong Gando, Nagari Piobang, Payakumbuh District, Lima Puluh Kota Regency, West Sumatra with 20 members. The scarcity of subsidized inorganic fertilizers and farmers' dependence on the use of inorganic fertilizers are problems in efforts to increase the production of group agricultural products. In early 2023, this farmer group is determined to start producing compost on a small scale. Due to limited knowledge and skills, members of this farmer group are still not proficient in producing quality compost. As in the procurement of raw materials and decomposers, almost entirely purchased it requires high production costs. In making compost can utilize the resources around these partners, such as husks, cocoa skins, and cow/chicken dung which are agricultural and livestock waste from members of this group. In addition, the production entirely uses manual equipment so the results are also not optimal. So community service activities were carried out in the form of training and assistance in making Trichocompost. Trichokompos is a compost containing Trichoderma sp mushrooms, which was developed as an alternative to environmentally friendly fertilizers in increasing productivity independently and increasing partner skills. This training can improve the knowledge and skills of Mekar Tani farmer groups on making Trichocompost as measured through questionnaires to achieve an increase of 87%.

**Keywords:** Farmer empowerment, Mentoring, Trichocompost, Trichoderma sp
.

**Abstrak**

Kelompok Tani “Mekar Tani” merupakan salah satu kelompok tani di Jorong Gando, Nagari Piobang, Kecamatan Payakumbuh, Kabupaten Lima Puluh Kota, Sumatera Barat yang beranggotakan 20 orang. Kelangkaan pupuk anorganik bersubsidi dan ketergantungan petani terhadap pemakaian pupuk anorganik menjadi masalah dalam upaya peningkatan produksi hasil pertanian kelompok. Pada awal tahun 2023, kelompok tani ini bertekat untuk memulai memproduksi pupuk kompos dalam skala kecil. Karena keterbatasan pengetahuan dan keterampilan, anggota kelompok tani ini masih belum mahir dalam memproduksi pupuk kompos yang berkualitas. Seperti halnya dalam pengadaan bahan baku dan biodekomposer masih hampir seluruhnya dibeli sehingga membutuhkan biaya produksi yang tinggi. Padahal dalam pembuatan kompos dapat memanfaatkan sumber daya yang ada disekitar mitra tersebut, seperti sekam, kulit kakao, kotoran sapi/ayam yang merupakan limbah pertanian dan peternakan dari anggota kelompok ini. Selain itu, dalam produksi seluruhnya menggunakan peralatan yang manual sehingga hasilnya pun juga belum maksimal.

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Journal of Community Service and Application of Science
ISSN:2962- 2263, Vol. 2, No. 1, Juni, 2023,

Maka dilakukanlah kegiatan pengabdian kepada Masyarakat berupa pelatihan dan pendampingan pembuatan Trichokompos. Trichokompos merupakan kompos yang mengandung jamur *Trichoderma* sp, yang dikembangkan sebagai alternatif pupuk ramah lingkungan dalam meningkatkan produktivitas secara mandiri dan menambah keterampilan mitra. Pelatihan ini dapat meningkatkan pengetahuan dan keterampilan kelompok tani Mekar Tani tentang pembuatan Trichokompos yang diukur melalui kuisioner mencapai peningkatan sebesar 87%.

**Kata Kunci***: Pemberdayaan petani, Pendampingan, Trichokompos, Trichoderma sp***.**

## INTRODUCTION

Nagari Piobang has an area of 9.83 km$^2$ consisting of 3 jorongs, namely Jorong Piobang, Gando, and Ampang. The livelihood of the population is generally farmers, which is supported by a large agricultural area. Jorong Gando has seven Farmer Groups, one of which is the "Mekar Tani" Farmer Group which was established in 2012. The businesses developed by the farmer group in the previous 10 years were rice fields, dryland farming, and animal husbandry. In 2023, the 'Mekar Tani' Farmer Group will begin to add its activities, namely in the use of Compost, this activity begins with training facilitated by Walinagari Piobang in 2022. The compost-making training that was followed lasted for one day, but until now there has been no continuous assistance carried out in making this compost. In early 2023, the farmer group "Mekar Tani" began to commit to applying knowledge and developing innovations to increase the group's income. Members of this farmer group began to try to make compost on a small scale using manual and makeshift equipment. However, because they are still beginners, the compost production carried out by this farmer group is still not optimal. In terms of material procurement, almost all materials used are purchased, so it requires quite a lot of capital. Even with the existing potential of this region, this farmer group has the availability of materials needed as basic materials for processing surrounding materials into compost from agricultural waste and livestock waste of this farmer group, such as cocoa fruit skins, and rice husk charcoal. The purpose of this service is to empower farmer groups to improve skills in making Trichocompost, through mentoring.

Compost as organic matter is a good fertilizer because it is a source of nutrients needed by plants to develop. *Trichoderma* sp which effectively inhibits the development of soil-borne pathogens so that plants avoid disease. The combination of the two is known as Trichocompost. Trichocompost is a compost containing the fungus *Trichoderma* sp, which was developed as an environmentally friendly fertilizer alternative for increasing agricultural productivity [1]. The use of Trichocompost has also been applied to several plants in increasing productivity, such as lettuce [2], lettuce [3], sweet corn[4], garlic [5], and shallots [6].

## METHOD

The method used in this community service activity is providing assistance and training in making Trichocompost fertilizer. This activity began with a Focus Group discussion to discuss technical activities and tools and materials to be prepared. The raw materials used in making Trichocompost are cocoa skin waste, chicken manure, husk, husk charcoal, dolomite, rice bran, EM4 as a decomposer, and *Trichoderma harzianum* mushroom culture. The tools used are compost shredding machines, thermometers, plastic compost covers, hoes, shovels, drills, and scales.

The practice of making Trichocompost, is carried out with the following stages: Agricultural waste such as cocoa peels are chopped, added dried chicken manure, husk charcoal, husk, dolomite, and pestle are stirred evenly. Next, sprinkled rice bran, on the upper surface and then watered with EM4 solution evenly. After a week added mushroom culture *Trichoderma harzianum*. Then stirred well, stirring continues at intervals for 3 weeks until the waste is completely decomposed. After composting is complete, it is done so that the compost particles are finer and more uniform.

In this training activity, an initial evaluation was carried out to measure the ability of the level of knowledge and skills regarding the workshop material provided. Evaluation activities were carried out by Pre-test and *Post-test*

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Journal of Community Service and Application of Science
ISSN:2962- 2263, Vol. 2, No. 1, Juni, 2023,

on members of the Mekar Tani farmer group using questionnaires. Furthermore, the questionnaire data was processed to see what percentage increase in knowledge and skills of partners in Trichocompost production.

## RESULTS AND DISCUSSION

The results of the implementation of the PKM program at the Mekar Tani Farmer Group in Jorong Gando, Nagari Piobang are carried out following the stages in solving existing problems, namely:

### 3.1 Results of Focus Group Discussion

The Focus Group Discussion phase will be held on July 6, 2023, at the farmer group secretariat house. In this activity, similarities in perception were carried out between the PMP Team and partners. The result of this FGD meeting was that technical activities were agreed and partners were willing to provide places and raw materials for Trichocompost training. And also Partners are willing to be workshop participants and follow this program until it is completed seriously, and continuously until satisfactory results are achieved.


**Figure 1.** PKM Focus Group Discussion Activities at Mekar Tani Farmer Group

### 3.2 Results of Trichocompost Socialization

The Trichokompos socialization stage will be carried out on Saturday, July 15, 2023, at the secretariat of the Mekar Tani Farmer group. This activity was attended by all members of farmer groups, and the entire PKM Team, by inviting resource persons who are experts in the field of Trichocompost production. This activity began with socialization of how to breed *Trichoderma harzianum* mushrooms which will be used in making Trichocompost fertilizer. Furthermore, followed by socialization on how to make Trichocompost fertilizer and its advantages, and continued with the direct practice of making Trichocompost accompanied by the PKM Team and resource persons. All participants were very diligent and serious in listening to the material from the resource persons and determined to apply the knowledge gained to increase the production and income of the Mekar farmer group.




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ISSN:2962- 2263, Vol. 2, No. 1, Juni, 2023,

**Figure 2.** Trichocompost socialization activities with members of the Mekar Tani Farmer Group

Before the socialization was carried out, an initial questionnaire (pre-test) was distributed to participants containing 10 questions that explored information on the extent of participants' knowledge about trichocompost. The results of filling out the initial questionnaire (pre-test) can be seen in Table 1.

**Tabel 1**. Results of PKM Pre-test for Mekar Tani Farmer Group

| No | Name | Number of questions answered out of 10 Pre-test Questions |
|---|---|---|
| 1 | Roni Yohendra | 5 |
| 2 | Safarudin | 5 |
| 3 | Surtini | 5 |
| 4 | Fitra Hayati | 3 |
| 5 | Elfa Manharto | 5 |
| 6 | Asmi Siswati | 3 |
| 7 | Sabarniati | 4 |
| 8 | Alia Deswita | 3 |
| 9 | Indra Wati | 4 |
| 10 | Osminar | 4 |
| 11 | Darli wati | 4 |
| 12 | Dodi Hendra | 3 |
| 13 | Mawardi | 4 |
| 14 | Deni Petria | 3 |
| 15 | Indra sofia | 4 |
| 16 | Enni Hilda Yetti | 4 |
| 17 | Rida Wahyuni | 5 |
| 18 | Lusi Noveriza | 5 |
| 19 | Mira Deswita | 5 |
| 20 | Ayzus | 4 |
| An average score of a questionnaire (pre-test) | | 4,1 x 100% = 41% |

In Table 1, it can be seen that the participants' knowledge is still very minimal with an average of only 41% answered questions. After distributing the questionnaire, the next stage is training in making Trichocompost. After socialization and training on Trichocompost, participants again filled out a final questionnaire (post-test) to measure the increase in their knowledge about Trichocompost whose results can be seen in Table 2 below:

**Tabel 2.** Hasil Kuisioner Akhir (Post test) PKM Pada Kelompok Tani Mekar Tani

| No | Nama | Jumlah pertanyaan yang terjawab dari 10 Pertanyaan Post-test |
|---|---|---|
| 1 | Roni Yohendra | 10 |
| 2 | Safarudin | 9 |
| 3 | Surtini | 10 |
| 4 | Fitra Hayati | 8 |
| 5 | Elfa Manharto | 9 |
| 6 | Asmi Siswati | 8 |
| 7 | Sabarniati | 9 |
| 8 | Alia Deswita | 8 |
| 9 | Indra Wati | 9 |
| 10 | Osminar | 8 |
| 11 | Darli wati | 8 |
| 12 | Dodi Hendra | 8 |
| 13 | Mawardi | 8 |
| 14 | Deni Petria | 8 |
| 15 | Indra sofia | 8 |
| 16 | Enni Hilda Yetti | 8 |
| 17 | Rida Wahyuni | 9 |
| 18 | Lusi Noveriza | 10 |
| 19 | Mira Deswita | 10 |
| 20 | Ayzus | 9 |

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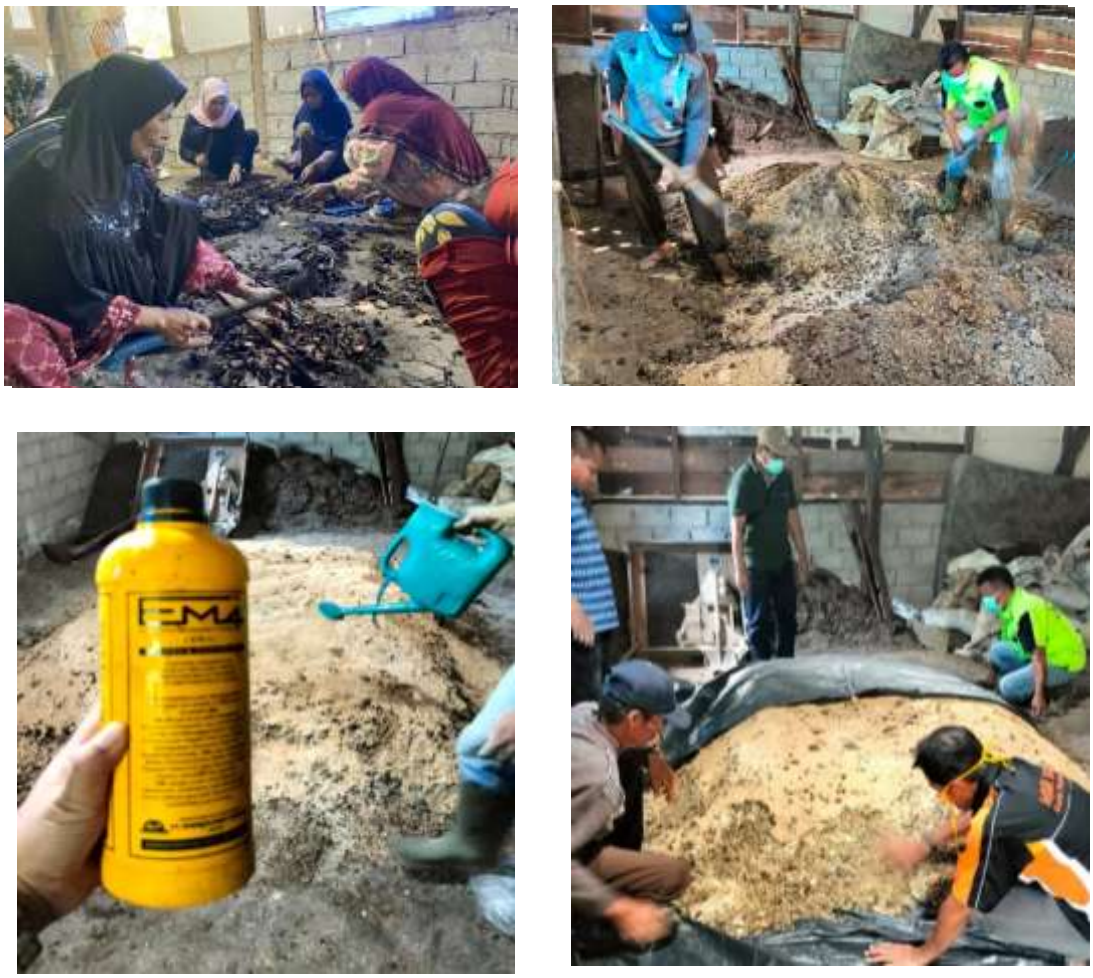
| | |
|---|---|
| An average score of a questionnaire (post-test) | 8,7 x 100 % = 87% |

In Table 2 of the results of the final questionnaire measurement (post-test), the level of understanding of participants towards Trichocompost given after socialization several times. Participants can answer almost any question, participant knowledge increases to 87%.

3.3 Training Results of Making Trichocompost Fertilizer

At the Trichocompost making training stage, it was carried out at the secretariat of the Mekar Tani Farmer group. This group already has a shelter for the composting process. All the materials used were prepared by the group members a few days in advance. As for the amount of material prepared to make 500 Kg of Trichocompost fertilizer.



**Gambar 3**. Suasana pelatihan pembuatan Trichokompos

3.4 Results of Monitoring Trichocompost Fertilizer During 3 Weeks of Composting Process

Trichocompost Composting process is carried out for 3 weeks. During this time, the process of stirring, checking temperature, and watering is carried out regularly to get maximum results. Members of this farmer group always report the results of their monitoring regularly to the PKM Team.

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**Figure 4**. Trichocompost fertilizer monitoring activities during the composting process

3.5. Monitoring and Evaluation of Results

After 3 weeks of the composting process, the PKM Team went back to the field to see the results of the Trichocompost fertilizer produced. From the results of the evaluation, the results of the fertilizer produced have matured. The PKM team assessed that this farmer bloom farmer group could already produce this Trichocompost fertilizer.


**Figure 5**. PKM monitoring and evaluation activities in the Mekar Tani farmer group

In this monitoring and evaluation activity, questionnaires were also filled out to measure participants' knowledge and skills after participating in assistance in making Trichocompost fertilizer.

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**Figure 6**. Questionnaire-filling activities for PKM monitoring and evaluation in the Mekar Tani farmer group

3. 6. Compost Chopping Machine Handover

In this PKM activity, a compost shredding machine was also handed over from the PKM Team to the Mekar Tani Farmer Group.

Figure 7. Compost Chopping Machine Tool Handover Activities

## CONCLUSION

Based on the results obtained during PKM activities, it can be concluded from the results of socialization of making Trichocompost, the knowledge of the Mekar Tani Farmer Group on Trichocompost Making which was initially only 41% then increased to 87%. After the training, the Mekar Tani Farmer Group was able to practice the steps of making Trichocompost, starting from the preparation of tools and materials, composting, to the Trichocompost maturation stage. The suggestion from this activity is that it is hoped that this activity can be continued to other Nagari Farmer Groups so that farmers no longer need to worry about the scarcity of subsidized inorganic fertilizers. It is hoped that the sale of Trichocompost fertilizer can continue so that it can increase the income of the Farmer group.

## ACKNOWLEDGEMENTS

This Community Service Program received a lot of assistance from various parties,
Therefore thanks to:

1. Kepada Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi melalui Direktorat Akademik Pendidikan Tinggi Vokasi Direktorat Jenderal Pendidikan Vokasi Tahun Anggaran 2023 telah membiayai kegiatan pengabdian kepada Masyarakat ini dengan bersumber dari DIPA DAPTV Kemendikbud Ristek Nomor SP DIPA-023.18.1.690524/2023 berikut revisinya.
   Dengan Nomor Kontrak Nomor Kontrak Induk : 202/SPK/D.D4/PPK.01.APTV/VI/2023, tanggal 21 Juni 2023. Nomor Kontrak turunan dari LLDIKTI ke LPPM UPERTIS Nomor : 003/LL10/AM-PKM-APTV Tanggal Kontrak Turunan : 22 Juni 2023

2. Universitas Perintis Indonesia which has provided additional funding.
3. Wali Nagari Piobang, Payakumbuh District, Fifty City Regency
4. Mr. Chairman and member of the Mekar Tani Farmer Group, Jorong Gando, Nagari Piobang, Payakumbuh District, Fifty Kota Regency

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