



Economic Empowerment of Residents of Al-Hidayah Kalumbuk Padang Orphanage by Utilizing Virgin Coconut Oil Manufacturing Waste into Nata de Coco Beverage Products as Additional Income

Pemberdayaan Ekonomi Warga Panti Asuhan Al-Hidayah Kalumbuk Padang dengan Pemanfaatan Limbah Pembuatan Minyak Kelapa Murni Menjadi Produk Minuman Nata de Coco Sebagai Penghasilan Tambahan

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Article History: Received: 28 August 2024 Revised: 1 September 2024 Accepted: 7 September 2024 Published: 8 September 2024	Abstract <p>The "Al-Hidayah" orphanage, established in Kalumbuk, Padang City, in 1987, by the Al-Hidayah Foundation. The establishment of this orphanage is because in the Kalumbuk area there are many orphans and orphans, who are economically deprived. They struggle with the cost of living and the cost of education. The number of them at the beginning of the establishment was 35 men, and 15 women. Those who live in the orphanage are boys, while women live with their parents, in houses around the orphanage. The current economic situation of the orphanage is still in shortage, because it still depends on government assistance and donations from the community. Meanwhile, orphanage children have potential, especially high school and junior high school students who number 26 people. If directed to fill their free time with activities that can generate additional income, it will help the economy of the orphanage. Previously, the children of this orphanage had been trained, how to make a VCO by the service team chaired by Prof. Dr. Suryani MSi, at their own expense. In the process of making VCO, the waste, which is in the form of coconut water, is wasted. Partners do not have knowledge about the use of coconut water waste into Nata de coco, as well as used as food and beverages that can be sold and make money. The purpose of the service is to utilize the waste produced by VCO, namely coconut water into Nata de coco and its drinks, to improve the economy of the orphanage. This service program is carried out through training in making Nata de Coco from coconut water and making drinks from Nata de Coco. As a result, Mitra has marketed its products, by serving orders for the procurement of drinks from Nata de Coco at the Wedding Party. So that it has generated an average monthly income of Rp. 6,750,000. This program has succeeded in increasing Partners' income</p> <p>Keywords: VCO production waste, Nata de coco, coconut water.</p> Abstrak <p>Panti asuhan "Al-Hidayah", didirikan di Kalumbuk, Kota Padang, tahun 1987, oleh Yayasan Al-Hidayah. Didirikannya Panti Asuhan ini, karena didaerah Kalumbuk banyak anak yatim dan piatu, yang kekurangan secara ekonomi.</p>
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Mereka kesulitan dengan biaya hidup dan biaya pendidikan. Jumlah mereka pada awal berdiri sebanyak 35 orang laki-laki, dan 15 orang perempuan. Yang tinggal di Panti adalah anak laki-laki, sementara perempuan tinggal bersama orangtuanya, di rumah sekitar panti. Keadaan perekonomian Panti Asuhan sekarang masih dalam kekurangan, karena masih bergantung pada bantuan Pemerintah dan sumbangan dari Masyarakat. Sementara anak-anak panti mempunyai potensi, terutama yang SMA dan SMP yang berjumlah 26 orang. Bila diarahkan untuk mengisi waktu luang nya pada kegiatan yang dapat menghasilkan pendapatan tambahan maka akan membantu perekonomian Panti. Sebelum ini anak-anak Panti Asuhan ini sudah dilatih, bagaimana membuat VCO oleh Tim pengabdian yang diketuai oleh Prof. Dr. Suryani MSi, dengan biaya mandiri. Pada proses pembuatan VCO, limbahnya yang berupa air kelapa, terbuang percuma. Mitra belum mempunyai pengetahuan tentang penggunaan limbah air kelapa menjadi Nata de coco, serta dijadikan makanan dan minuman yang dapat dijual dan menghasilkan uang. Tujuan Pengabdian adalah memanfaatkan limbah produksi VCO yaitu air kelapa menjadi Nata de coco dan minuman nya, untuk meningkatkan perekonomian Panti Asuhan. Program pengabdian ini dilakukan melalui pelatihan pembuatan Nata de Coco dari air kelapa dan pembuatan minuman dari Nata de Coco. Hasilnya Mitra sudah memasarkan produknya, dengan melayani pesanan pengadaan minuman dari Nata de Coco pada Pesta Perkawinan. Sehingga sudah menghasilkan pendapatan rata-rata sebulan Rp. 6.750.000. Program ini berhasil menambah pendapatan Mitra.

Kata kunci: Limbah produksi VCO, Nata de coco, air kelapa.

1. INTRODUCTION

Partners of the PMP Service Program entitled "Empowerment at the "Al-Hidayah" Kalumbuk Orphanage, Padang with the treatment of VCO Manufacturing Waste into various processed de Nata de Coco". The state of the economy of this orphanage is still in a shortage, because it still depends on the government's assistance that is not much and donations from the community. Meanwhile, orphanage children have potential, especially high school and junior high school students, which when added up are 26 people. If directed to fill their free time with activities that can generate additional income, it will help the economy of the orphanage. In addition, the children of this orphanage have also been trained from October to December 2023, how to make a VCO (1), (2), (3), by the service team chaired by Prof. Dr. Suryani MSi, at independent expense.

The problem is that Partners do not have knowledge of how to produce waste from making VCO such as coconut water made into nata de coco, and various products made from nata de coco.(4), (5), (6).

The purpose of the service is to utilize the waste produced by VCO, namely coconut water into Nata de coco and its drinks, to improve the economy of the orphanage. This service program is carried out through training in making Nata de Coco from coconut water and



making drinks from Nata de Coco. The method is by holding Training/Workshop. Making Nata de Coco from coconut water.

METHOD

The method used is to carry out the following stages:

1. Socialization of the use of virgin coconut oil production waste, namely coconut water can be made into Nata de Coco and drinks can be made from nata de coco

Before the implementation of socialization, a PreTest was carried out with 10 questions about Partners' knowledge about the use of coconut water waste, which can be used as Nata de coco. **After the implementation of socialization** , a Post Test was carried out with the same questions, so that it can be measured how much the Partner's knowledge has increased.

2. Implementation of training on the utilization of waste from the production of VCO (Virgin Coconut Oil), namely coconut water into Nata de coco and Drinks from Nata de coco.

3. **Monitoring and Evaluation.**

After training the Partners, the Partners are evaluated both in terms of knowledge and skills in producing Nata and Nata de Coconya drinks. Partners always make Nata de coco products and drinks from Nata de Coco. Furthermore, it is accompanied in terms of product marketing.

4. **Assistance for business sustainability.**

The team assists Partners in running the Nata de coco and Minumam nata de coco production businesses. Assistance is carried out by registering businesses with related agencies such as the Disperindag, as well as the Cooperative Office.

RESULTS AND DISCUSSION .

The results of this service program are presented in accordance with the following stages

1. **Socialization of the use of waste from making Virgin Coconut Oil into Nata de Coco**

Before the implementation of the Socialization on the utilization of waste from making Virgin Coconut Oil into Nata de Coco, a PreTest was carried out first by providing 10 questions related to training. After the implementation, a Post Test was also carried out where, the Pre Test and Post Test Results can be seen in the following Table 1,



Table 1. Results of Knowledge Test Before and After Socialization Activities .

No	Respondent's Name	Knowledge Before Extension (number of questions answered correctly) %	Knowledge After Extension (number of questions answered correctly) %
1	Aditya Afdel	20	80
2	Fahri	10	70
3	Arpandi	30	90
4	Ripaldo	20	80
5	Safriyanto	30	80
6	Syndi Syafitri	30	90
7	Syabil	20	70
8	Farhan	10	80
9	Farel	30	90
10	Zakki	40	90
11	Radit	10	70
12	Rafa	10	80
13	Pratama	30	90
14	Riko	20	70
15	Aril	20	90
16	Renaldo	40	70
17	Nand	10	80
18	Kevin	30	70
19	Osi	20	80
20	Anggun	20	70
21	Aurel	40	80
22	Salman	40	70
23	Jiko	20	80
24	Halimah	20	70
25	Ghifa	30	80
26	Ardila	10	90
27	Puteri	40	80
	Average	24,07%	79,25%

Among the questions given to find out the extent of Partner's knowledge are such as,

1. Nata de coco is actually a layer
 - a. Coconut pulp
 - b. Sellusosa
 - c. Agar
 - d. Jelly

The correct answer is **b. Cellulose**, but there are many who **answer the wrong one, namely a. coconut pulp.**

2. The production of Nata de coco from VCO production waste, namely coconut water that is fermented using
 - a. Bacteria Acetobagter Xylinum

- b. Nata seeds, namely sea gelatin
- c. Bacteria pathogen

From Table 1, it can be explained that the knowledge about Nata de coco in Partners is very minimal with an average knowledge percentage of only 24.07%. Meanwhile, after socialization, the knowledge increased to an average of 79.25%. This is like a service program that has also been implemented (7), (8), (9), (6).

2. Training Implementation

Training on the utilization of waste from making VCO (Virgin Coconut Oil), namely coconut water into Nata de coco and Drinks from Nata de coco, has been carried out. There were 27 participants, the ingredients used were kelapa water, in addition to sugar, stater or nata seeds were *Acetobacter Xylinum* bacteria, vinegar as an ingredient to condition coconut water into acid, ZA to eat the bacteria. In this training, plastic containers were used for the fermentation containers, sterilized newspaper to close the fermentation containers during the process. Stove to heat coconut water. and plastic cups to package ready-made nata drinks. The tools provided during the training are such as picture 1 as follows,



Figure 1. Among the tools provided by the Service Team.

The atmosphere during the training can be seen from Figure 2 and Figure 3 below,



. Figure 2 The atmosphere during the training is pouring heated coconut water



Figure 3. Atmosphere of the drink-making training from Nata de Coco

3. Monitoring dan Evaluation.

After training on making Nata de Coco from coconut waste, monitoring and evaluation were carried out, sometimes there are those who are not proficient in making Nata de Coco. During this monitoring, discussions and questions and answers were carried out, which can be seen in the following Figure 4,



Figure 4. Q&A atmosphere during Monitoring and evaluation

4. Assistance for business sustainability.

For business sustainability and in order to achieve the goal of being able to increase income, Partners are accompanied in the production of Nata de coco.

The products that can be sold are:

- a. SeedNata de Coco

Sold one bottle Rp. 50.000.



Figure 5. Nata de coco seeds.

b. Nata de coco that has been cut into pieces

Saleable 1 kg Price Rp. 35.000.

c. Drink Nata de Coco



Gambar 6. Minuman Nata de coco

When mentoring, we can see the income obtained as shown in the following Table 2 below:

Table 2. Partner income during mentoring.

No	Description		Month 1 Juni		Month 2 Juli		Month 3 Agustus
1	Seed Nata	10 bottle	500.000	20 bottle	1.000.000.	7 bottle	340.000
2	Nata that has been cut	6 kg	210.000	10 kg	350.000.	10 kg	350.000
3	Nata de coco drink party order	900 cup	4.500.000	1200 cup	6.000.000.	1400 cup	7.000.000.
	Sum		5.210.000		7.350.000.		7.690.000.
	Average						Rp. 6.750.000,-

CONCLUSION

Based on the description that has been presented from this Service Program, it can be concluded that

1. Virgin Coconut Oil Manufacturing Waste, namely coconut water, can be made into Nata de Coco and Beverage Products from Nata de Coco
2. Partners increase their knowledge in terms of the use of VCO production waste (coconut water) can be made into Nata de Coco and drinks from Nata de Coco.



3. The realization of Economic Empowerment of Residents of Al-Hidayah Kalumbuk Padang Orphanage by utilizing Virgin Coconut Oil Manufacturing Waste into Nata de Coco Beverage Products as Additional Income, an average of Rp. 6,750,000,- per month

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REFERENS

1. Suryani Suryani. Virgin Coconut Oil: Bakteri Asam Laktat dan Bakteriosin. 1st ed. 1, editor. Book. Unitomo Press; 2020. 122 p.
2. Suryani, Dharma A, Manjang Y, Arief S, Munaf E, Nasir N. Antimicrobial and antifungal activity of Lactic Acid Bacteria isolated from coconut milk fermentation. *Res J Pharm Biol Chem Sci.* 2014;5(6):1587–95.
3. Suryani S, Sariyani S, Earnestly F, Marganof M, Rahmawati R, Sevindrajuta S, et al. A comparative study of virgin coconut oil, coconut oil and palm oil in terms of their active ingredients. *Processes.* 2020;8(4):1–11.
4. Aminarti S, Ajizah A, Kaspul K. Pelatihan Pembuatan Nata de Coco kepada Siswa SMA Negeri 1 Jorong. *Bubungan Tinggi J Pengabdian Masy.* 2020;1(2):66.
5. Nurhadi B, Angeline A, Sukri N, Masruchin N, Arifin HR, Saputra RA. Characteristics of microcrystalline cellulose from nata de coco: Hydrochloric acid versus maleic acid hydrolysis. *J Appl Polym Sci.* 2022;139(5):1–12.
6. Suryani S, Yermadona H, Nurhaida N, Sari AP, Sabri Y, Rahmawati R, et al. Utilization Of Waste From Vco Production As A Nata De Coco Stater To Increase The Income Of The People Of Kwt “ Bengke Sakato ” . *Pemanfaatan Limbah Pembuatan VCO Menjadi Stater Nata De Coco Journal. J Community Serv Appl Sci.* 2022;1(1):49–57.
7. Suryani Suryani, Akbar Y, Suryani Suryani, Yuliesi Purnawati, Rahmawati Rahmawati, Yustitia Akbar, Desriana Desriana YS. KOSONG KOSAN MAHASISWA SEBAGAI KUMBUNG JAMUR 005 Komplek Perumahan Wisma Universitas Bung Hatta . Lokasi nya di depan gerbang Universitas Bung Hatta seperti dapat dilihat pada Gambar 1 , Universitas Bung Hatta memindahkan lokasi kampus ke tempat yang lebi. 2020;3:61–7.
8. Suryani Suryani. Inovasi Budi Daya Jamur Tiram dengan Pemanfaatan Kamar-kamar Kosong Kos-Kosan Mahasiswa ABSTRAK. In: SEMNAS PKM UNIVERSITAS PASUNDAN. 2018.
9. Suryani Suryani, Yuliesi Purnawati. Creativity of De-Ka kopertis X canteen empowerment through various oyster mushroom processing | *Jurnal Pengabdian dan Pemberdayaan Masyarakat Indonesia. J Pengabdian dan Pemberdaya Masy Indones*



[Internet]. 2021;1(2):67–74.
<https://journal1.ptti.expert/jppmi/article/view/32>

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