

## UTILIZATION OF TOFU DREGS WASTE INTO ECONOMICALLY VALUABLE NUGGETS IN PURWOASRI VILLAGE

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### ABSTRACT

The observation results reveal that the residents of Purwoasri, the majority of whom work as tofu makers, have not yet optimally utilized tofu dregs waste. Tofu dregs are only used as animal feed and oncom ingredients, despite their high nutritional content, especially protein. This community service initiative introduces an innovation in processing tofu dregs into economically valuable nuggets by adding simple ingredients such as chicken, carrots, and scallions. This innovation is expected to enhance the usability of waste, maximize local resources, and support the local community's businesses.

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## INTRODUCTION

The community service activities in Purwoasri Village serve as a means to develop students' creativity in addressing various societal issues, particularly those related to entrepreneurial potential. Additionally, this initiative allows us to contribute to existing activities by providing alternative development strategies to revitalize community groups in Purwoasri Village. This effort also opens opportunities for greater awareness of scientific and technological advancements. According to observations, many residents of Purwoasri Village choose to become entrepreneurs, one of which is in the tofu-making business. This is primarily due to the high demand for tofu among the locals and the affordability of its main ingredient, soybeans. Tofu, a food product made from soybeans, is widely popular due to its low cost and high nutritional value.

The tofu production process generates both liquid and solid waste. The solid waste, commonly known as tofu dregs, is often underutilized due to limited knowledge among the community (Anggraini, 2023; Saim, 2024). Residents of Purwoasri Village generally perceive tofu dregs as useful only for animal feed and oncom production. However, tofu dregs contain significant nutritional elements, particularly protein. For instance, 100 grams of tofu dregs contain approximately 26.6 grams of protein, which is significantly higher than the 7.8 grams found in tofu itself. In comparison, 100 grams of soybeans contain about 34.9 grams of protein (Pembayun et al., 2024) Additionally, tofu dregs also contain 17.6% carbohydrates and 2.4% fat (Pardimin et al., 2022).

Several studies and community service related to the utilization of tofu dregs waste, namely the use of different types of protein and fillers in making tofu dregs nuggets (Inarest et al., 2014), substitution of tofu dregs flour in making nuggets (Sari, 2012), utilization of tofu dregs waste into innovative products "tofu dregs nuggets" (Kuncoro et al., 2022), making nuggets from

tofu dregs to improve the economy of the Sumbermulyo village community (Ferdiansyah, 2022), making nuggets from tofu dregs to improve the economy of the community in Cempaka Putih Village, Anyar Village - Banten (Hidayah et al., 2022), Mixing Tofu Dregs Flour and Wheat Flour as a Binder for the Quality of Carrot Nuggets (Melisa, 2011), processing tofu dregs waste into frozen food nuggets in Kotaraja Village (Abimanyu et al., 2023), making various processed tofu dregs waste for home industry actors (Pangerang et al., 2023), utilization of tofu dregs waste as a food product fit for consumption (Mawardi et al., 2019), utilization of tofu dregs waste into food products in Ngasinan Etan village (Haryanto et al., 2020), making cookies from tofu dregs for the Ardirejo village community as an effort to utilize solid waste from tofu making (Yekti & Suryaningsih, 2017), utilization of tofu dregs waste and banana peel waste into environmentally friendly paper (Sinaga et al., 2020), utilization of tofu dregs into tofstick snacks as an effort to utilize tofu dregs waste in Oi Mbo village, Bima city (Ernawati et al., 2024), utilization of tofu dregs waste into innovative tofu dregs sausage products to increase the income of the Baratan village community (Kurniawan et al., 2023), training in drying tofu dregs waste to increase the economic value of tofu dregs (Pepadu et al., 2023), processing of tofu dregs waste into processed food products (vegetarian tofu dregs) in Sugihmanik village (Broto et al., 2021), utilization of tofu dregs into contemporary snacks as an effort to utilize tofu dregs waste in Lewirato sub-district (Ismunandar et al., 2024), utilization of tofu dregs for processed food from tofu industry processing waste in Tunggulwulung sub-district, Malang city (Wirawan et al., 2017)

Therefore, initiated by the community service team from Universitas Muhammadiyah Metro, an innovation was introduced to transform tofu dregs waste into an economically valuable food product nuggets. It is expected that utilizing tofu dregs as a raw material for nugget production will enhance both the economic and nutritional value of the product. This is achieved by incorporating additional ingredients such as chicken, carrots, and scallions in the processing. The preparation of tofu dregs nuggets is accessible to all community members since the ingredients are easy to obtain, and the processing method is relatively simple.

Thus, this initiative aims to raise awareness about the potential of local food resources and encourage the community to develop food production businesses that utilize tofu dregs. The primary goal of this activity is to enhance understanding of how to transform tofu dregs into a nutritious and economically valuable food product in the form of nuggets.

## **IMPLEMENTATION METHOD**

The implementation of the community service program follows these stages:

### **1. Planning Stage**

Activities carried out during the planning stage include:

- a. Informing and obtaining permission from the community of Purwoasri Village, Metro Utara.
- b. Coordinating to discuss the technical aspects of the program implementation.
- c. Conducting socialization on the utilization of tofu dregs into an economically valuable food product in the form of nuggets.

### **2. Action Implementation Stage**

Activities conducted in the action implementation stage include:

- a. Introducing the community to the benefits of utilizing tofu dregs as a food product.
- b. Providing training on how to process tofu dregs into an economically valuable food product, namely nuggets.
- c. Offering direct assistance in the processing of tofu dregs into nuggets.

### **3. Evaluation Stage**

The evaluation stage is conducted after the socialization and training on tofu dregs utilization. This evaluation assesses the effectiveness of the activities carried out, identifies any shortcomings in the training process, and determines areas for improvement to enhance future implementation.

### **4. Reflection Stage**

Reflection is conducted to assess the strengths and weaknesses of the activities, with the goal of formulating recommendations for the sustainability or further development of the program.

#### Partner Participation in the Community Service Program

1. Partners play an active and constructive role in the socialization of the work plan and in establishing the agreed-upon realization of the program's success.
2. Partners are directly involved in every step or stage of implementing solutions to the specific problems they face.
3. Partners actively participate in the training process, which enhances their skills and understanding.

## RESULTS AND DISCUSSION

This community service activity consists of two types of activities: 1) Conducting socialization on the utilization of tofu dregs into an economically valuable food product in the form of nuggets; 2) Conducting practical training on processing tofu dregs into an economically valuable food product in the form of nuggets. Both activities were carried out on Saturday, October 26, 2024, together with the community of Purwoasri Village, Metro Utara. The first socialization activity is presented in Figure 1.



**Figure 1.** Socialization activities for the use of tofu dregs

The next activity is practicing the process of transforming tofu dregs into an economically valuable food product in the form of nuggets. The following are the steps for processing tofu dregs into nuggets.

1. Preparing the necessary tools and ingredients

The tools and ingredients for processing tofu dregs into nuggets can be seen in the Figure 2.



**Figure 2.** Required Ingredients

#### **Tools:**

- a. Mixing bowl
- b. Ladle
- c. Chopper
- d. Stove
- e. Dry cloth
- f. Baking tray
- g. Steamer pot
- h. Knife
- i. Spoon
- j. Frying strainer

#### **Ingredients:**

- a. Tofu dregs
- b. Minced garlic
- c. Ground chicken
- d. Scallions
- e. Salt
- f. Broth powder
- g. Ground pepper
- h. Cooking oil
- i. Eggs
- j. Flour

- k. Spatula
  - l. Cutting board
  - m. Frying pan
  - k. Breadcrumbs
  - l. Carrots
2. The process of squeezing tofu dregs using a dry cloth to reduce its water content.



**Figure 3.** Process of squeezing tofu dregs

3. Put the tofu dregs, ground chicken, eggs, carrots, scallions, minced garlic, ground pepper, broth powder, salt, and flour into a bowl, then mix until well combined.



**Figure 4.** Mixing tofu dregs and chicken nugget batter

4. Pour the mixture into a baking tray that has been greased with cooking oil to prevent sticking.



**Figure 5.** Pouring the mixture into a greased baking tray

5. Place the tray with the mixture into a steamer. The nuggets are steamed for approximately 50 minutes.



**Figure 6.** Steaming the tofu-chicken nugget mixture

6. After the mixture is cooked and cooled, cut it into pieces with the desired thickness.



**Figure 7.** Cutting the cooked nugget mixture into pieces

7. Coat the sliced mixture with diluted flour.



**Figure 8.** sliced mixture with diluted flour

8. Next, coat the nuggets with breadcrumbs.



**Figure 9.** Coat the nuggets with breadcrumbs

9. Fry the nuggets until they turn golden brown.



**Figure 10.** Fry the nuggets

10. Tofu dregs nuggets are ready to be enjoyed.



**Figure 11.** Tofu dregs nuggets

Based on the results of the socialization and training on processing tofu dregs into an economically valuable food product in the form of nuggets, the activity received a positive response from the residents of Purwoasri Village, Metro Utara (Figure 3). Additionally, the community showed great enthusiasm in participating, as the process can be practiced at home to

prepare school meals for their children. This community service activity resulted in a high-protein and economically valuable nugget product.



**Figure 12.** Nugget Making Activity

A community service initiative in Purwoasri Village demonstrated a practical and innovative approach to utilizing tofu dregs underutilized by-product of tofu production into a nutritious and economically valuable food product. By involving local residents in outreach and hands-on training, the program successfully raised awareness of the high nutritional value of tofu dregs, particularly its high protein content. The addition of additional ingredients such as chicken, carrots, and spring onions not only enhanced the taste and texture of the nuggets but also increased their market appeal (Situmorang et al., 2024; Kim et al., 2025; Zhao, 2024). The method introduced was accessible and simple, making it ideal for replication at the household level, especially for home-based food production or small-scale business ventures.

The program results showed enthusiastic participation from the community, with many residents expressing interest in using the recipe to prepare healthier and more affordable school meals for their children. This demonstrates the potential for tofu dregs nugget production to become a sustainable micro-enterprise in the village. Furthermore, the program supports local food security and waste management by transforming what was previously considered waste into a value-added product. Overall, this initiative serves as a model for other rural areas seeking to empower communities through creative use of local resources and simple food innovations.

## CONCLUSIONS AND SUGGESTIONS

The Community Service Program in Purwoasri Village has successfully identified the issue of suboptimal utilization of tofu dregs waste. Through the innovation of processing tofu dregs into nuggets, students have provided a solution that not only increases the economic value of this waste but also empowers the community to make better use of local resources. This innovation supports the growth of small businesses within the community while also educating them on the importance of utilizing nutrient-rich waste.

The recommendations provided include: Conducting continuous training on processing tofu dregs into nuggets so that the community can continuously improve their skills; Encouraging the community to experiment with other tofu dregs-based products to expand the market and increase income; Providing further assistance in product marketing, both locally and through digital platforms, to enhance product recognition; Collaborating with private sectors or local government to help develop this business, particularly in terms of funding and product distribution.

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## REFERENCES

Abimanyu, A. M., Jaibu, R. E., Insaniyah, L., Utami, E., Sopiyan, D., Astuti, Y., Septia, S. B. R., Ramadhani, F. B. S., Grantoro, R. M., & Varian Milenio, D. (2023). Pengolahan Limbah Ampas Tahu Menjadi Nugget Frozen Food di Desa Kotaraja. *Prosiding Seminar Nasional Gelar*

- Wicara, 1(April), 23–24.
- Anggraeni, S. (2023). *Implementasi Peraturan Daerah Kabupaten Kebumen Nomor 8 Tahun 2013 Tentang Perlindungan dan Pengelolaan Lingkungan Hidup Terkait Permasalahan Pembuangan Limbah Industri Tahu di Desa Jatimalang Kecamatan Klirong Kabupaten Kebumen* (Doctoral dissertation, Universitas Islam Sultan Agung Semarang).
- Broto, W. R., Arifan, F., Supriyo, E., Pudjihastuti, I., Aldi, V., & Aldo, G. (2021). Pengolahan Limbah Ampas Tahu Menjadi Produk Olahan Pangan (Vegetarian Ampas Tahu) Di Desa Sugihmanik. *Jurnal Pengabdian Vokasi*, 2(2), 136–140.
- Ernawati, S., Faturrahman, M., Adwiyah, R., Wulandari, P., & Dwiaryanti, R. (2024). Pemanfaatan Ampas Tahu Menjadi Snack Tofstick Sebagai Usaha untuk Pemanfaatan Limbah Ampas Tahu di Kelurahan Oi Mbo Kota Bima. *IRA Jurnal Pengabdian Kepada Masyarakat (IRA/JPkM)*, 2(3), 93–99.
- Ferdiansyah, 2022. (2022). Pembuatan Nugget Dari Ampas Tahu Untuk Meningkatkan Ekonomi Masyarakat Desa Sumbermulyo Kecamatan Jogoroto Kabupaten Jombang *Jurnal Pengabdian Kepada Masyarakat Universitas Darul Ulum. Jurnal Pengabdian Masyarakat Darul Ulum.*, 0085, 105–111.
- Haryanto, A. T., Dewi, S. N., & Riyadi, J. S. (2020). Pemanfaatan Limbah Ampas Tahu menjadi Produk Pangan di Desa Ngasinan Etan, Gebang Masaran, Sragen. *Jurnal Ilmu Ekonomi Adi Unggu Bhirawa Surakarta*, 1(1), 1–6.
- Hidayah, A. N., Listiawati, L., Fadillah, R. I., Suneni, S., & Indah, S. (2022). Sosialisasi Dan Pembuatan Nugget Dari Ampas Tahu Untuk Meningkatkan Ekonomi Masyarakat Di Kampung Cempaka Putih Desa Anyar – Banten. *JIPAM : Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 1(3), 148–152. <https://doi.org/10.55883/jipam.v1i3.26>
- Inarest, A., Fathonah, S., & Rosidah. (2014). Pengaruh penggunaan jenis protein dan jenis filler yang berbeda dalam pembuatan nugget ampas tahu. *Food Science and Culinary Education Journal*, 3(1), 56–62. <https://journal.unnes.ac.id/sju/index.php/fsce/article/download/7808/5387>
- Ismunandar, Mulyadin, & Lewirato. (2024). Pemanfaatan Ampas Tahu Menjadi Jajanan Kekinian Sebagai Usaha Untuk Pemanfaatan Limbah Ampas Tahu Di Kelurahan Lewirato. *ARDHI : Jurnal Pengabdian Dalam Negri*, 2(1).
- Kim, J. S., Park, J., Han, D., Choi, Y., Park, J. W., Lee, J., ... & Hur, S. J. (2025). *An Investigation of the Status of Commercial Meat Analogs and Their Ingredients: Worldwide and South Korea*. *Food science of animal resources*, 45(1), 31.
- Kuncoro, S., Abdurrahim, M., Gisavana, F., Alifiantoro, N. S., Saputri, D. R., Damayanti, V. W., Febrianti, P., Tunang, I. P., Anindyaguna, A., Rizani, J. P., & Haq, F. R. (2022). Pemanfaatan Limbah Ampas Tahu Menjadi Produk Inovatif “Nugget Ampas Tahu” Untuk Menambah Pendapatan Ekonomi Masyarakat Pedukuhan Siluwok Lor. *Buguh: Jurnal Pengabdian Kepada Masyarakat*, 2(2), 92–97. <https://doi.org/10.23960/buguh.v2n2.1069>
- Kurniawan, A., Imaniah, L., Abdillah, Z. J., & Mukhlis, M. (2023). Pemanfaatan Limbah Ampas Tahu Menjadi Produk Inovatif Sosis Ampas Tahu untuk Meningkatkan Pendapatan Masyarakat Kelurahan Baratan. *Jurnal Pengabdian Kepada Masyarakat Nusantara (JPkMN)*, 4(3), 2801–2807.
- Mawardi, Sarjani, T. M., & Fadilah. (2019). Pelatihan pemanfaatan limbah ampas tahu sebagai produk pangan layak konsumsi di desa meurandeh dayah. *Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 1(1), 40–44.
- Melisa, N. (2011). *Pengaruh Pencampuran Tepung Ampas Tahu dan Tepung Terigu Sebagai Bahan Pengikat Terhadap Mutu Nugget Wortel (Daucus Carota L)*. UNIVERSITAS ANDALAS.
- Pangerang, F., Rusyanti, N., Syahdan, S., Sulaiman, D., Arif, A., & Sari, A. L. R. (2023). Pelatihan Pembuatan Aneka Olahan Limbah Ampas Tahu Bagi Pelaku Home Industri. *Jurnal Benuanta*, 2(2), 14–19.
- Pardimin, Ghozali, I., Susanto, E., Ratri, W. S., Saputra, B., Rahadi, Kusumastuti, W., Gunawan, H., & Abaidah, F. J. (2022). Peningkatan Kapasitas Rumah Maggot Barepan Bangkit melalui Program Komunitas Kampung Bangkit menuju Desa Tahan Pangan. *Jurnal Ilmiah Padma Sri Kreshnam*, 4(2), 1–9.

- Pembayun, B. M., Romadhoni, I. F., Sulandari, L., & Astuti, N. (2024). Inovasi Pasta Farfalle dengan Pemanfaatan Tepung Kedelai Mocaf dan Daun Jelatang (*Urtica dioica* L). *Lencana: Jurnal Inovasi Ilmu Pendidikan*, 2(4), 367–379. <https://doi.org/10.55606/lencana.v2i4.4095>
- Pepadu, J., Rahayu, T. I., Ariyana, M. D., Amaro, M., Handayani, B. R., & Widyastuti, S. (2023). Pelatihan Pengeringan Limbah Ampas Tahu Untuk Meningkatkan Nilai Ekonomis Ampas Tahu. *Jurnal Pepadu*, 4(1), 142–146. <https://doi.org/10.29303/pepadu.v4i1.2265>
- Salim, A. (2024). *Analisis Kelayakan Pengelolaan Usaha Industri Tahu Di Sungai Rongkong Kota Palopo Dalam Perspektif Ekonomi Islam* (Doctoral dissertation, IAIN Palopo).
- Sari, D. I. (2012). *Pengaruh Substitusi Tepung Ampas Tahu Dalam Pembuatan Nugget Terhadap Kadar Protein Dan Daya Terima Konsumen*. Universitas Muhammadiyah Surakarta.
- Sinaga, E. M., Supartiningsih, & Sitorus, E. (2020). Edukasi Pemanfaatan Limbah Ampas Tahu Dan Limbah Kulit Pisang Kepok Menjadi Kertas Ramah Lingkungan. *Jurnal Abdimas Mutiara*, 01(01), 195–200. <https://ojs.stiesa.ac.id/index.php/prisma>
- Situmorang, T. R. D., Sadeli, A., & Budi, U. (2024). Addition of Carrot Juice (*Daucus carota*) to the Shelf Life and Organoleptic of Turkey Meatballs. *Jurnal Peternakan Integratif*, 12(3), 112-117.
- Wirawan, Suliana, G., & Iskandar, T. (2017). Pemanfaatan Ampas Tahu untuk Olahan Pangan dari Limbah Pengolahan Industri Tahu di Kelurahan Tunggulwulung Kota Malang. *Jurnal Akses Pengabdian Indonesia*, 1(2), 64–70.
- Yekti, G. I. A., & Suryaningsih, Y. (2017). Pelatihan Pembuatan Cookies dari Ampas Tahu bagi Masyarakat Kelurahan Ardirejo sebagai Upaya Pemanfaatan Limbah Padat Pembuatan Tahu. *Jurnal Paradharma*, 1(1), 28–34.
- Zhao, Y. (2024). Development of a High Pressure Processed, Clean-Label Dressing Product Using Upcycled Yogurt Acid Whey as a Main Ingredient.