

Community Empowerment through the Production of Rosella and Lemon Herbal Tea

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Received:
20.07.2026

Revised:
12.08.2026

Accepted:
18.08.2026

Available online:
04.09.2026

Abstract: Public awareness of the importance of healthy lifestyles has increased the need for education about the use of herbal plants as health products and business opportunities. This community service activity aimed to improve the knowledge and skills of the people of Watutulis Village, Prambon District, in producing antioxidant herbal tea made from rosella and lemon. The methods used included material presentation, demonstrations, direct practice, pre-test and post-test assessments, and participatory observation during the workshop activities. The workshop was attended by 25 participants. Pre-test and post-test results showed an average knowledge score increase from 52.4 to 81.6 (an improvement of 55.7%), and 22 out of 25 participants (88%) were able to independently practice making herbal tea. The enthusiasm and active participation of the community became indicators of the program's success. In addition to providing health benefits, rosella and lemon herbal tea also has the potential to be developed as a home-based business that can improve the economic value of the Watutulis Village community.

Keywords: Antioxidant, Herbal tea, Lemon, Rosella, Workshop

Abstrak: Kesadaran masyarakat terhadap pentingnya minuman sehat berbahan alami mendorong perlunya edukasi mengenai pemanfaatan tanaman herbal sebagai produk kesehatan dan peluang usaha. Kegiatan pengabdian masyarakat ini bertujuan meningkatkan pengetahuan dan keterampilan masyarakat Desa Watutulis, Kecamatan Prambon dalam pembuatan teh antioksidan berbahan rosella dan lemon. Metode yang digunakan meliputi penyampaian materi, demonstrasi, praktik langsung, pre-test dan post-test, serta observasi partisipatif masyarakat selama workshop berlangsung. Kegiatan diikuti oleh 25 peserta. Hasil pre-test dan post-test menunjukkan peningkatan rata-rata nilai pengetahuan dari 52,4 menjadi 81,6 (peningkatan sebesar 55,7%), dan sebanyak 22 dari 25 peserta (88%) mampu mempraktikkan pembuatan teh herbal secara mandiri. Antusiasme dan keterlibatan aktif masyarakat selama kegiatan menjadi indikator keberhasilan program. Selain memberikan manfaat kesehatan, produk teh herbal rosella dan lemon berpotensi dikembangkan sebagai usaha rumahan yang dapat meningkatkan nilai ekonomi masyarakat Desa Watutulis

Kata Kunci: Antioksidan, Lemon, Pemberdayaan, Rosella, Teh herbal

1. INTRODUCTION

Public awareness of the importance of a healthy lifestyle continues to increase, especially in the choice of foods and beverages that are beneficial for health. Herbal drinks made from natural ingredients are becoming increasingly popular because they are considered safer and contain bioactive compounds that are beneficial to the body. One herbal plant with great potential to be developed as a health drink is rosella flower (*Hibiscus sabdariffa*). Rosella is known to contain anthocyanins, flavonoids, phenolic compounds, and vitamin C, which act as natural antioxidants (Maulida et al., 2024). Those antioxidant compounds function to help neutralize free radicals that can cause various health problems (Hamrita et al., 2022).

In addition to rosella, lemon (*Citrus limon*) is also known as a fruit rich in vitamin C and flavonoids that can help boost the body's immune system. The bioactive compounds in lemon are known to have good antioxidant and antibacterial activities beneficial for health (Zahr et al., 2023). The combination of rosella and lemon has the potential to produce a herbal drink that not only has a distinctive flavor, but also provides health benefits for the community (Monita et al., 2023; Suhastra et al., 2024).

Several studies have shown that rosella has great potential as a functional beverage ingredient. Research conducted by Fardani et al., (2023) indicates that rosella extract has high antioxidant activity. Moreover, rosella is also known to help lower blood pressure and support heart health due to its anthocyanin content. According to Rohani et al., (2024), rosella plants are also easy to cultivate, making them promising for development as community-based herbal products. The development of herbal products based on rosella can also become an economically valuable alternative for home-based businesses.

Watutulis Village, Prambon Sub-district, Sidoarjo Regency, is one of the areas that has quite good agricultural and home-yard potential. Some residents use their yard land to grow herbal plants and household food crops. However, the use of rosella as a processed product is still very limited. In general, the community is not yet aware of the benefits of rosella and lemon as ingredients for health drinks or of the business opportunities from processing herbal products. This condition indicates the need for educational activities and training for the community on utilizing herbal plants to create economically valuable products (Suriati et al., 2024).

The use of herbal plants as household health products has quite good economic potential, especially as community interest in natural products continues to increase (Chua & Nicholas, 2023). In addition to providing health benefits, processing herbal plants into drinks can also help improve community skills and open up new business opportunities. According to Jungsi et al., (2025), herbal products with high antioxidant content have great potential to be developed as functional beverages and health-based MSME (UMKM) products.

This condition shows the need to improve the community's knowledge and skills in processing herbal plants into useful and marketable products. The main problems faced by the people of Watutulis Village include a lack of understanding about the benefits of rosella and lemon as natural sources of antioxidants, limited skills in processing herbal products, and the absence of innovative herbal drink products that can be developed into home based businesses.

Based on the problems identified above, this community service activity was conducted in the form of a workshop on making antioxidant tea from rosella and lemon, with a scope covering Watutulis Village, Prambon District, Sidoarjo Regency. The specific problems addressed were: (1) the lack of community knowledge regarding the health benefits of rosella and lemon as natural antioxidant sources; (2) the absence of practical skills in processing herbal plants into marketable products; and (3) the limited awareness of herbal product development as a potential home-based business opportunity. The objectives of this activity were: (1) to improve participants' knowledge about the benefits of rosella and lemon as natural antioxidants; (2) to enhance participants' practical skills in independently producing herbal tea from rosella and lemon; and (3) to encourage the development of home-based business opportunities based on healthy herbal beverage products. Through this activity, it is expected that the people of Watutulis Village will be able to utilize local potential optimally, thereby increasing the community's economic value through the production and sale of antioxidant herbal tea.

2. METHODS

This community service activity was conducted in Watutulis Village, Prambon District, Sidoarjo Regency on May 16, 2026, in the form of a workshop on making antioxidant tea made from rosella and lemon. The activity was attended by 25 participants consisting of local residents, predominantly housewives from RT 03 RW 04, Watutulis Village. The method used in this activity was participatory education through presentations, demonstrations, hands-on practice, pre-test and post-test assessments, and activity observation.

Preparation Stage

At the preparation stage, the community service team coordinated with the Watutulis Village authorities regarding the implementation of the activity. In addition, the team prepared the tools and materials and developed educational materials about the benefits of rosella and lemon as

natural sources of antioxidants and their potential development as economically valuable herbal products.

Workshop Implementation Stage

The workshop began with a presentation on the health benefits of rosella and lemon, as well as the potential for developing herbal products as home-based businesses. After the presentation, participants took part in demonstrations and hands-on practice in making herbal tea, starting from the drying process, mixing the ingredients, and packaging the product.

Evaluation Stage

The evaluation of the activity was conducted using a mixed approach, combining quantitative and qualitative methods. Quantitatively, a pre-test was administered before the presentation to assess participants' baseline knowledge of the health benefits of rosella and lemon, and a post-test was conducted after all sessions concluded to measure knowledge improvement. Each test consisted of 10 multiple-choice questions covering the content of antioxidants, herbal plant processing, and business potential of herbal products. The success criteria for the knowledge component were set at a minimum average post-test score of 70 and a minimum knowledge increase of 20% compared to the pre-test score. Qualitatively, the evaluation was conducted descriptively through observation of participants' activeness and participation during the workshop. The evaluation tools included observation sheets, activity documentation, and short interviews with participants. The practical success of the activity was also measured by the number of participants who were able to independently practice making herbal tea during the workshop session, with a target of at least 80% of participants successfully completing the practice. The overall success of the activity was determined by the fulfilment of both the knowledge improvement criteria and the practical skills target.

Through this activity, it is expected that the people of Watutulis Village will improve their knowledge and skills in processing herbal plants and be able to develop rosella and lemon herbal tea as a product with economic value.

3. RESULTS AND DISCUSSION

The community service activity in the form of a workshop on making antioxidant tea from rosella and lemon was conducted in Watutulis Village, Prambon District, Sidoarjo Regency, on May 16, 2026. This activity aimed to improve the community's knowledge and skills in utilizing herbal plants to produce healthy beverage products with economic value. The workshop was attended by 25 participants consisting of local residents, especially housewives and community members from RT 03 RW 04 of Watutulis Village who were interested in processing herbal products.

The implementation of the activity began with a presentation on the benefits of rosella flowers and lemon as natural sources of antioxidants. Participants were given explanations about the vitamin C, flavonoid, and anthocyanin content found in rosella and lemon, as well as their benefits for human health. After the presentation session, the activity continued with demonstrations and hands-on practice in making herbal tea. Participants were taught the stages of selecting ingredients, drying rosella flowers, mixing the ingredients, and packaging the herbal tea products to make them more attractive and marketable.

The objectives of this community service activity were considered achieved based on both the pre-test and post-test assessment results and direct observation during the workshop. The pre-test results showed an average participant knowledge score of 52.4 out of 100, which increased to 81.6 in the post-test, representing a knowledge improvement of approximately 55.7%. This increase exceeded the predetermined success criterion of a minimum 20% improvement. Furthermore, 22 out of 25 participants (88%) were able to independently complete the herbal tea production practice, surpassing the target of 80%. The participants were actively involved in discussions, asked questions, and directly participated in the product-making practice. In addition, the participants also showed strong interest in the opportunity to develop herbal tea as a home-based business product.

One of the advantages of this activity is that the raw materials, rosella and lemon, are easy to obtain, and the production process is relatively simple, making it suitable for rural communities. Herbal tea products also provide health benefits and can serve as an alternative healthy beverage for the community. From an economic perspective, rosella and lemon herbal tea has the potential to be developed into a small-scale business product because the production costs are relatively affordable.



Figure 1. (a) Presentation Session and Workshop, (b) Registration of Community Service Participants, (c) Group Photo with the Participants.

However, this activity also faced several challenges. Some community members were still not familiar with the proper drying and packaging processes, so further assistance is needed to improve product quality. In addition, the limited availability of simple production equipment became one of the obstacles in developing the product on a larger scale. Nevertheless, the opportunity to develop rosella and lemon herbal tea products in Watutulis Village is quite promising. The high public interest in herbal products and healthy beverages can become a valuable business opportunity for the local community. With further training in packaging, marketing, and product development, rosella and lemon herbal tea has the potential to become one of the leading products of the Watutulis Village community, Prambon District, Sidoarjo Regency.

4. CONCLUSION

The community service activity through a workshop on making antioxidant tea from rosella and lemon in Watutulis Village, Prambon District, was successfully carried out and was able to improve the community's knowledge and skills in processing herbal plants into healthy beverage products. The success of the activity was reflected in the enthusiasm and active participation of the participants during both the presentation sessions and the hands-on practice of making herbal tea.

The advantages of this activity include the use of raw materials that are easy to obtain, a simple production process, and the potential of the product to provide both health benefits and economic value. In addition, rosella and lemon herbal tea products can be developed as home-based business opportunities for the local community. However, this activity still had several limitations, including the lack of production equipment and the community's limited experience in creating more attractive and hygienic product packaging. Therefore, further assistance is needed in marketing,

packaging, and product development so that rosella and lemon herbal tea can become a leading product of the Watutulis Village community.

ACKNOWLEDGMENTS

The Institute for Research and Community Service of Mitra Sehat Mandiri Pharmacy Academy Sidoarjo would like to express its gratitude to the Head of Neighborhood Unit (RT 03 RW 04) of Watutulis Village for providing the opportunity, support, and facilities during the community service activity. Appreciation is also extended to all students who assisted in the implementation of the activity, enabling the workshop to run smoothly and provide benefits to the community of Watutulis Village, Prambon District, Sidoarjo Regency.

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