



Herbal soap and dish soap training for women prisoners: Building self-confidence and entrepreneurship readiness

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ARTICLE INFO	ABSTRACT
<p>Article history Received: 2025-09-04 Revised: 2025-11-17 Accepted: 2025-11-21 Published: 2025-11-24</p> <p>Keywords Body wash Herbal oil Herbal soap Mentoring</p>	<p>This activity aims to increase the capacity and independence of inmates through training in making herbal oil and soap, strengthening their knowledge of natural ingredients, production skills, and post-incarceration economic preparedness. Herbal oil is an herbal extract in oil that is an effective combination of nutrients, antioxidants, and biostimulants that utilizes the active compounds of herbal plants and oils. That is effective in utilizing the active compounds of herbal plants and the oil itself. Herbal oil, apart from being a medicine and cosmetic, can also be used as raw material for making herbal soap. Herbal oil and herbal soap are potential products that can be developed to improve the skills of prisoners to be independent, creative, and productive after serving their sentence. Productive after serving a criminal period. Herbs are extracted in coconut oil and olive oil with the hot maceration method using a double boiler. Soap herbal soap is made by the cold process method and the hot process method into solid soap. The results of the service showed the transfer of knowledge, skills, and affection in making herbal oil and soap. affection of making herbal oil and herbal soap through appropriate technology. The production of herbal oil and soap from this assistance is still for internal use. internal use of prisons, but prisoners are expected to be able to increase the production of herbal soaps that can increase the economy of prisoners. improve the economy of prisoners</p>
<p>Kata Kunci Herbal oil Pendampingan Sabun herbal Sabun mandi</p>	<p>Pelatihan sabun herbal dan sabun cuci piring untuk narapidana wanita: Membangun rasa percaya diri dan kesiapan berwirausaha. Kegiatan ini bertujuan untuk meningkatkan kapasitas dan kemandirian warga binaan pemasyarakatan melalui pelatihan pembuatan minyak herbal dan sabun, penguatan pengetahuan tentang bahan alam, keterampilan produksi, dan kesiapan ekonomi pasca pemasyarakatan. Herbal oil adalah ekstrak herbal dalam minyak yang merupakan kombinasi nutrisi, antioksidan, dan biostimulan yang efektif dalam memanfaatkan senyawa aktif dari tanaman herbal dan minyak itu sendiri. Herbal oil selain sebagai obat dan kosmetik juga bisa digunakan sebagai bahan baku pembuatan sabun herbal. Herbal oil dan sabun herbal merupakan produk potensial yang dapat dikembangkan untuk meningkatkan ketrampilan warga binaan agar mandiri, kreatif, dan produktif setelah menjalani masa pidana. Herbal diekstrak dalam minyak kelapa dan minyak zaitun dengan metode hot maserasi menggunakan double boiler. Sabun herbal dibuat dengan metode cold process method dan hot process method menjadi sabun padat. Hasil pengabdian menunjukkan transfernya pengetahuan, ketrampilan, dan afeksi pembuatan herbal oil, dan sabun herbal melalui teknologi yang tepat guna. Produksi hebal oil dan sabun dari pendampingan ini masih bersifat penggunaan internal lapas, namun warga binaan diharapkan mampu meningkatkan produksi sabun herbal yang dapat meningkatkan ekonomi warga binaan.</p>

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INTRODUCTION

Correctional institutions are legal institutions that help convicts grow both physically and spiritually. Correctional institutions serve as coaching facilities, helping offenders improve their quality of life. Comprehensive entrepreneurial training frameworks within correctional systems have been shown to enhance prisoners' personal development and employability (Akhtar, 2021). Prisoners are trained here to recognize their faults, better themselves, and avoid making the same mistakes in the future. After leaving the penal facility, individuals are supposed to be embraced by the

community (Dahrison, 2022) Once with the ultimate goal of the criminal law system, which is to re-socialize offenders, prevent crime, and improve social welfare. This is mandated by Law Number 12 of 1995 concerning corrections; in Article 1, Paragraph 1, "Guidance is an activity to improve the quality of devotion to God Almighty, intellectual attitudes and behavior, professional, physical, and spiritual health of prisoners and correctional students."

In providing guidance to prisoners in an empowerment is needed to get better and more useful changes. In Indonesia, coaching efforts in correctional institutions are carried out through skills training provided by the central and regional governments. However, without adequate guidance, many inmates return to crime after being into crime after release and can even increase their criminal skills (Habibi et al., 2013). Entrepreneurship material is provided to and motivates prisoners to develop themselves in creative economic ventures (Santoso et al., 2022). Similar findings were observed in Nigeria, where entrepreneurship programs empowered inmates and reduced reoffending rates (Nisa et al., 2025). Prisons have a great responsibility in guiding prisoners to remain productive while serving their sentences. remain productive while serving their sentence. Various positive programs are arranged to equip them with skills that make them superior, creative, and competitive human resources in society (Nafiah et al., 2021). Prisons also play a role in preparing prisoners to return to society with better behavior, according to society with better behavior, according to the prevailing norms (Khuswatun, 2019).

One of the coaching services provided to prisoners by the Women's Correctional Institution Class IIA Malang is skills services. In the skills service, the Women's Correctional Institution Class IIA Malang has the ability to collaborate with other institutions, namely universities, which can contribute through Community Service activities. Therefore, this service design activity provides skills development efforts to the prisoners of the Women's Correctional Institution Class IIA Malang. This activity is expected to prepare prisoners who are independent, creative, and productive after serving their criminal period.

The use of herbs in making herbal oil can involve various types of herbs, such as turmeric and moringa leaves. The research we have done is to make herbal oil from turmeric and moringa leaves. Herbs infused with oil are an effective method of combining active compounds from herbal plants and the oil itself. The curcumin content in turmeric has been shown to have antibacterial, anti-inflammatory, and antioxidant properties, and functions as an acne and wound healing agent on the skin (Susanto et al., 2023; Waghmare et al., 2017). Turmeric extract virgin coconut oil (VCO) has high levels of curcumin (Mahmudah, Nada, et al., 2023a). Turmeric olive oil extract has the ability to be an antibacterial in inhibiting *Staphylococcus aureus* and *Propionibacterium acne* bacteria. Phytochemical tests on moringa leaf extract in VCO and Extra Virgin Olive Oil (EVOO) showed positive results for compounds such as phenolics, alkaloids, terpenoids, tannins, steroids, and flavonoids (Rofiki, 2021). The herbal oil has a significant effect on antioxidant activity, curcumin, carotenoids, and total phenol levels compared to just olive oil and virgin coconut oil (Mahmudah, Nada, et al., 2023b); (Mahmudah et al., 2024); (Mahmudah et al., 2025). Total phenol levels in moringa leaf extract in vegetable oil show potential as an antioxidant product (Mahmudah, Muslimah, et al., 2023; Sakhi et al., 2025). The extraction method and surfactants used in making herbal oil affect the resulting concentration of secondary metabolites (Azhar et al., 2024).

The herbal oil produced can later be used as a cosmetic body and hair oil product, and even used as a raw material for herbal soap. Based on the background that the community service activities carried out are based on the implementation of scientific development and expertise of the research team, we chose the theme Empowerment of Prisoners of Class IIA Malang Women's Correctional Institution Through Making Herbal Oil and Herbal Soap. This activity aims to increase the capacity and independence of inmates through training in making herbal oil and soap, strengthening their knowledge of natural ingredients, production skills, and post-incarceration economic preparedness. This activity transfers economically valuable skills, opens micro-business opportunities, supports social reintegration, and applies the research team's expertise in applied chemistry. This effort aligns with SDG 4 (Quality Education) through technical and vocational training for vulnerable groups to promote economic independence and sustainability.

METHOD

The implementation method uses a Participatory Action Research (PAR) approach whose process aims for learning in overcoming problems and meeting the practical needs of the community, the production of science, and the process of social religious change.

ABCD is one strategy employed. Asset Based Community Development (ABCD Method) is an aid technique that seeks community development from the start by educating individuals about their skills, potential, and assets that may be leveraged. The ABCD strategy leads to the awareness and internalization of assets, potential, and strength, as well as their independence and maximum exploitation.

This activity began with in-depth interviews and focus group discussions (FGDs). Based on the formulation of the problem and interviews with assistants and residents of the Class IIA Women's Correctional Institution, Malang, it is known that the problems in the field are as follows.

Table 1. The Problems in The Field

Current condition	Problem solving
The necessary cooperation involves the involvement of social organizations and educational institutions, such as universities, in supporting the skills service development program through the implementation of Community Service activities.	<ul style="list-style-type: none"> • Providing efforts to foster skills services for residents of the Class IIA Women's Correctional Institution • Organizing entrepreneurship training to provide basic skills in making herbal oil and herbal soap. • Build training modules that are in accordance with the level of understanding and needs of the prisoners.
The fostered residents still need skill development that fulfills the potential of the fostered residents.	<ul style="list-style-type: none"> • Providing material related to making Herbal Oil and Herbal Soap so that it can be used as entrepreneurial potential. • Provide direct support throughout the manufacture of herbal oil and soap.

The design of this program assessment began with the combination of pre-test and post-test data from extension and training activities, followed by data selection, tabulation, and description. Next, the feedback received during the training activities was analyzed. Monitoring the participants' success in making herbal oil and herbal soap was carried out by referring to the physicochemical test of the soap, as well as evaluating the results obtained. Furthermore, the role of the Class IIA Malang Women's Correctional Institution in the program's execution was carefully evaluated.

RESULTS AND DISCUSSION

The implementation of the activities began with a series of stages, namely surveys, coordination, licensing, trials, counseling and training, and monitoring and evaluation. At the end of the activity, a post-test in the form of a questionnaire was conducted to evaluate the impact of the program. An initial survey was conducted to obtain an overview of the real conditions of the service targets. Problem mapping and surveys were carried out at Class IIA Prison in Malang through discussions with Mrs. Erna Yulianti and Mrs. Endah Wahyuni, as assistants from members of the Work Activities Sie, as well as several prisoners.

During the discussion, it was found that the prison has organized various mentoring and product-making activities, such as food and skills (e.g., soy sauce, chips, tablecloths, and clothing). However, activities related to the manufacture of cleaning products, such as soap, have never been carried out. When the team offered assistance in making herbal oil and soap, the prison and prisoners showed high enthusiasm, considering that this activity had never been carried out before.

Ms. Erna gave a suggestion to include assistance in making dish soap, given the importance of cleaning products, both bath soap and dish soap, in daily needs. This idea received a positive response and approval from the community. The hope of Ms. Erna and the fostered residents is that later the fostered residents can produce soap independently, which can not only be used by themselves but also has the potential to be marketed as a commercial product.

The trial of making herbal oil, herbal soap made from moringa, turmeric, lemongrass, and dish soap was carried out in the Chemistry Laboratory of the Faculty of Science and Technology UIN Malang with the help of two students who were also working on a thesis with a similar theme. The purpose of this trial is to ensure that the herbal oil and soap products produced are of good quality, suitable for use, and can be traded. Thus, the products produced meet the required quality standards both for personal use and for the market.

Herbal Oil Moringa Extract Vegetable Oil

The results of the extraction of moringa leaf samples in vegetable oil are dark green due to the diffusion process of the moringa leaves with the oil solvent, which damages the cell membrane and forces secondary metabolites in the cytoplasm to escape and dissolve in the oil solvent. The results of the moringa leaf extraction in VCO can be seen in the image below. The green coloration of the extract indicates the diffusion of bioactive compounds, such as phenolics and flavonoids, into the oil medium. These secondary metabolites are known to dissolve effectively in lipid-based solvents due to their semi-polar characteristics (Rohman et al., 2021).

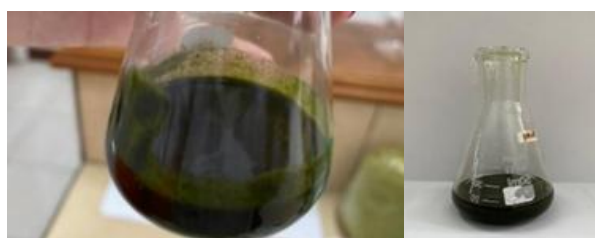


Figure 1 Results of extracting moringa leaf powder in VCO

After separating the sediment, the resulting filtrate can be used as body and hair oil and as a raw material for soap making. The resulting sediment can be used for masks and soap ingredients (Kibasa et al., 2025). There are two soap-making techniques: the hot process and the cold process. In the hot process, the soap is heated for an hour or more to accelerate saponification, allowing it to be used immediately after molding. In contrast, the cold process does not require heating and requires a curing period of 4–6 weeks before the soap is ready for use. The cold process is often chosen due to its simplicity and cost-effectiveness (Mahmudah & Shofiah, 2023). The sediment extracted during herbal oil production can be used as an additive in soap making, in addition to the filtrate, which is the main ingredient.



Figure 2. Herbal oil-based soap.

Based on the results of Table 2, it shows that moringa leaf extract with virgin coconut oil and virgin olive oil contains positive alkaloid, tannin, phenolic, flavonoid, steroid, and terpenoid compounds, and is negative for saponins. Based on the concept of like dissolves like, non-polar compounds will dissolve in non-polar solvents (Saini et al., 2016). Alkaloids are also called secondary metabolite compounds that are semi-polar, so polar and non-polar solvents easily extract the sample (Nadeem & Imran, 2016). Steroids are a group of compounds that have four integrated rings and also the basic framework of cyclopentanoperhydrophenanthrene. While Triterpenoids are compounds whose carbon skeleton comes from six isoprene units and are biosynthetically derived from acyclic hydrocarbons, namely squalene. This compound has a complicated cyclic structure, mostly in the form of alcohols, aldehydes, or carboxylic acids, which are nonpolar. So it is very easily extracted in solvents that are also non-polar. Some flavonoid compounds tend to dissolve easily in nonpolar compounds such as flavones, isoflavones, and flavanones. Negative results for the saponin test because saponin compounds tend to have polar properties, as they are generally in the form of sapogenins and glycosides so that they are easily extracted in polar solvents as well. The concentration of Moringa leaves does not affect the results of photochemical tests of secondary metabolite compounds.

Table 2. Phytochemical Test Results of Moringa Leaf Extract in VCO and EVOO

Phytochemical test	Concentration of Moringa Leaves									
	Virgin Coconut Oil					Extra Virgin Olive Oil				
	0%	10%	20%	30%	40%	0%	10%	20%	30%	40%
Phenolic	+	+	+	+	+	+	+	+	+	+
terpenoids	+	+	+	+	+	+	+	+	+	+
Steroids	+	+	+	+	+	+	+	+	+	+
Alkaloids (Mayer)	+	+	+	+	+	+	+	+	+	+
Alkaloids (Dragendoff)	-	+	+	+	+	-	+	+	+	+
Saponins	-	-	-	-	-	-	-	-	-	-
tannins	+	+	+	+	+	+	+	+	+	+
Flavonoids	+	+	+	+	+	+	+	+	+	+

Note: Sign -: no color or foam is formed
sign +: light color or slightly foamy

The counseling and training were held in the multipurpose room of the Class IIA Malang Correctional Facility, beginning with remarks from Ms. Rif'atul Mahmudah and Ms. Ratih Sulistyorini, Plt. Section Head of Correctional Facility Work Activities. In these remarks, the objectives and expectations of this mentoring program were explained. The training materials include how to make herbal oil, herbal soap, and dish soap, including how to obtain ingredients, calculation of production costs, as well as the benefits and economic potential of these products. After the training,

materials and equipment were given to the mentees so that they could try to make the products independently. Similar training based on herbal ingredients has been proven effective in improving the entrepreneurial skills of female inmates (Dewi et al., 2024). Evaluation of the activity was carried out one week after the mentoring through a questionnaire to measure the participants' understanding of the material and assess the results of the products they made independently.



Figure 3. Photo with the facilitators and the inmates of class II Malang women's prison.

Evaluation of activities is the focus of post-assistance activities in making herbal oil, herbal laundry soap and dish soap. The evaluation was carried out after one week of mentoring. Training in herbal and agricultural skills has also been shown to increase inmates' confidence and readiness for work (Zharkenova, 2020). The evaluation was carried out with a questionnaire related to the 20 participants' understanding of the material and the mentoring process. First, the questionnaire results were obtained regarding whether the participants had heard about making herbal oil, herbal soap.

A total of 95% of respondents had never attended similar training before, while only 5% had. Most of the prisoners had never been exposed to similar training. A similar program in Italy shows that herbal-based activities boost the confidence and independence of women in prison (Policek, 2017). This suggests this training is their first opportunity to gain skills in this area.

Have you ever participated in training on making products such as soap or the like before

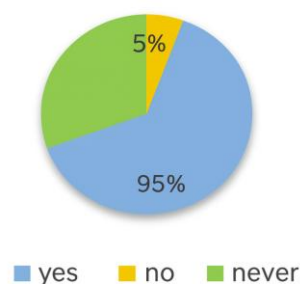


Figure 4. Evaluation of activity 1

A total 55% of respondents were very interested, 25% were interested, and 20% were average. No one was not interested. The majority of respondents showed high interest in learning to make herbal bath soap. This shows great potential to utilize this training to build skills in prisoners that can be applied after detention.

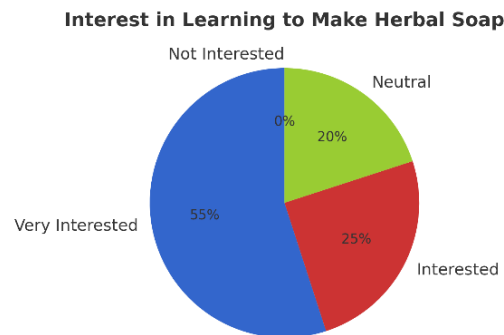


Figure 5. Evaluation of activity 2

A total of 95% of respondents had never attended similar training before, while only 5% had. Most of the prisoners had never been exposed to similar training. This suggests this training is their first opportunity to gain skills in this area.



Figure 6. Evaluation of activity 3

A total of 40% felt very confident, 50% confident, 10% less confident, and no one was not confident. Most of the participants felt confident after the training, indicating the success of the program in providing practical skills and increasing the confidence of the prisoners. This study emphasizes the importance of social context and entrepreneurship training in boosting women's confidence to become entrepreneurs (Gutiérrez-Broncano et al., 2024; Sumiyati et al., 2020). The program is effective in building confidence in prisoners, which is important for their success in applying these skills outside of prison.

A total of 95% of respondents felt no barriers, while 5% indicated barriers. These barriers related to the use of chemical terms for soap-making ingredients. However, the majority of the inmates felt no significant barriers in participating in the training, indicating that the program was well-designed and accessible.

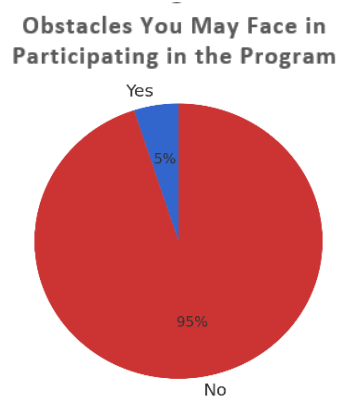


Figure 7. Evaluation of activity 4

Expectations after participating in the herbal soap and dish soap making program cover various aspects. Of the 20 participants, 11 people wanted to add new skills, 3 people hoped to increase self-confidence, 5 people were looking for business opportunities after leaving the institution, and 1 person wanted to increase knowledge. The goals to be achieved through this program vary, including starting a herbal soap business after release, making soap to the maximum and innovating, producing their own herbal soap, looking for new business opportunities, and trying to produce independently at home.

From the expectations and goals conveyed, it appears that this program has a significant impact, especially in the aspect of skills and entrepreneurship. The majority of participants wish to utilize the skills acquired to produce their own products and open a business. The expectation to be economically independent after their incarceration shows that the training not only improves their technical skills but also prepares them for a better future. Herbal-based production or social farming activities have been shown to promote economic independence and social reintegration among ex-convicts (Sullivan, 2019; Tulla et al., 2018). In addition, the desire to create jobs, especially for ex-prisoners, reflects a broader social impact. While most of the objectives are production- and self-employment-oriented, it is important to further emphasize innovation and product development to give prisoners a competitive edge in the market. Collaborative innovation methods with social enterprises have been helpful in increasing inmates' creativity and employability (Miolo et al., 2021). Empirical research suggests that innovation-oriented skill learning improves self-reliance and entrepreneurial adaptation among ex-inmates (Peace & Nnachebe, 2020). Social support is also critical to the success of this program, so organizers need to pay more attention to the support needs of those who feel less supported. Comprehensive rehabilitation frameworks emphasize that constant social support has a substantial impact on post-release career performance (Bin et al., 2021).

Table 3. Indicators of Mentoring Success

No	Criteria	Success Indicator	Evaluation Results
1	Participation of Inmates	Inmates have experience in making herbal oil, herbal soap Participants follow the mentoring with discipline and enthusiasm. They complete the questionnaire regarding the process and post-training evaluation	100% of the inmates showed enthusiasm and interest in participating in the training with discipline. pelatihan dengan tertib
2	Mentoring Process and Practice of Making Herbal Oil, Herbal Soap	The mentoring process of making herbal oil and herbal soap went well, resulting in successful outcomes	100% of the inmates can independently make herbal oil, herbal soap when provided with materials by the mentors.
3	Mentoring Skills	The output is that the participants are able to produce soap independentl, and the outcome is the soap produced by the inmates.	80% of the inmates stated that they successfully produced soap
4	Usability of Herbal Oil and Soap	The soap produced during the training can be used for daily needs within the prison environment.	100% of the inmates reported that the soap they produced was well-formed and usable.

The outputs of this activity that can be measured are the transformation of knowledge, skills, and affection from the service team to the prisoners of class II Malang so that they can form a community that can become facilitators who have an understanding of how to make herbal oil, herbal soap and dish soap. Furthermore, the measurable outcome is the result of herbal oil, herbal soap and dish soap produced. While the outcome of the results of herbal oil, herbal soap and dish soap in the evaluation and monitoring process. From this activity, it is hoped that prisoners can add entrepreneurial skills, become independent, creative, and productive prisoners after serving a criminal period. According to Smith (2021), entrepreneurial training in prisons not only improves abilities but also motivates ex-convicts to change their perspective and business orientation. Practice-based entrepreneurship training models have proven effective in improving the entrepreneurial readiness of prisoners (Arifin et al., 2013). This is consistent with the restorative entrepreneurship concept, which incorporates hands-on learning and rehabilitation through enterprise formation (Wainwright & Muñoz, 2020)

CONCLUSION

The mentoring program for making herbal oil, herbal soap, and dish soap at Class IIA Correctional Institution Malang went well, with enthusiastic participation from prisoners. All stages of the activity, from survey, training, to evaluation, were successfully implemented as planned. The results of this training show that prisoners have successfully mastered the skills of making these products independently, which are not only useful for daily needs, but also have the potential

to become business opportunities after their release. The majority of participants expressed increased confidence and interest in utilizing the skills they acquired to create marketable products.

The implications of this program show that proper skills training can help prisoners become more independent and productive after incarceration. Success in teaching the skills of making useful and marketable products can encourage them to become entrepreneurs, thereby reducing the potential for them to return to criminal behavior.

For future research and training, it is recommended that aspects of innovation and product development be emphasized. In order for the skills taught to continue to be developed and provide sustainable economic impact, it is recommended to develop a community-based business model.

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