







Training on Making Roll-On Aromatherapy of Calamansi Orange Essential Oil in Pondok Kubang Sub-District, Central Bengkulu

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Article Information:

Received October 01, 2023

Revised October 25, 2023

Accepted October 31, 2023

Keywords:

Aromatherapy; Calamansi
Orange; Roll-on

Abstract

Calamansi orange (*Citrofortunella microcarpa*) is one of the commodities that has been developed and processed into calamansi orange syrup. One of the by-products of the calamansi orange syrup industry is peel. Calamansi orange peel contains a lot of essential oils, the use of which can be made in the form of aromatherapy roll-on preparations. One of the essential oil contents of calamansi orange is decanal. Decanal in aromatherapy causes a feeling of relaxation. The aim of this service is to train the community on how to make calamansi orange essential oil aromatherapy in roll on packaging form at MSMEs Bukit Bengkulu, Pondok Kubang Sub-District, Central Bengkulu. The community service method is in the form of training on making essential oil from Calamansi orange peel and making preparations in the form of roll-on for aromatherapy using leaflets, tools and materials that have been prepared, the number of participants is 15 peoples. The service team carried out a demonstration and then were given the opportunity to demonstrate one by one. The results of this training show that the participants have the skills to make calamansi essential oil with an average score of 83 and have the skills to make roll on essential oil for calamansi orange peel, namely an average score of 87, exceeding the target of 80. The results of this training show an increase in participants's skills in making essential oils and calamansi orange peel aromatherapy roll-on which can be used as aromatherapy and increase community income through MSMEs.

A. Introduction

One of the commodities created and processed into orange syrup is the calamansi orange (*Citrofortunella macrocarpa*) (Sinambela et al., 2017). The community has not made the best use of the peel, pulp, seeds, and sedimented liquid that are byproducts of the calamansi orange syrup business (Tutuarima et al., 2018). There are several applications for the essential oils found in calamansi orange peel, including lip balm, peel-off masks, and roll-on aromatherapy (Elmitra & Noviyanti, 2020; Purnama et al., 2022), however the benefits of using essential oils as aromatherapy have not been explored in the community (Tabatabaiechehr & Mortazavi, 2020).

The results of research from the community service team (Purnama et al., 2022) show that one of the essential oil contents of calamansi orange is decanal with a score of 86.68 and a retention time of 8.353 minutes. The content of calamansi decanal essential oil (C₁₂H₂₄O) is the name as the content of Sunkist orange peel essential oil. In addition used as a fragrance, this decanal compound is an organic substance

How to Cite : Retnaningsih, Y., Waryana, & Wijanarka, A. (2023). Nutritional Fulfillment of The first 1000 Days Based on Local Food Ingredients as A Strategy for Handling the Stunting Problem. *Jurnal Ilmiah Pengabdian Masyarakat Bidang Kesehatan*, 1(3), 114–119. <https://doi.org/10.58723/abdigermas.v1i3.97>

ISSN : 2986-2698

Published By : CV Media Inti Teknologi

that helps to relax the nervous system and soothe everyone who inhales it (Venkatachalam et al., 2023). Decanal in aromatherapy causes feelings of relaxation (Elmitra & Noviyanti, 2020; Saleh et al., 2021; Soraya, 2021). The olfactory system and the body's circulation are the two physiological mechanisms that enable aromatherapy to function in the human body. Fragrances can have an impact on a person's emotions, memories, and psychological state (Razola-Díaz et al., 2021; Xin et al., 2022).

The community service team's organoleptic test results also showed that the majority of respondents liked aromatherapy (intervention group) and other citrus aromatherapy (control group) showed a significant difference in pain levels in the control and intervention groups after being given treatment in 1st posttest and 2nd posttest with the mean rank in the intervention group being lower, namely 21.62 and 26.45. Meanwhile, in the 3rd posttest, it was found that the mean rank of labor pain in the intervention group was also lower (27.50) compared to the control group (33.50), so it can be concluded that the use of calamansi orange aromatherapy roll-on can help mothers feel more relaxed and comfortable, thereby reducing the intensity of labor pain during the first active phase, especially at 4-7 cm cervix dilatation (Purnama et al., 2023).

Aromatherapy can also be used to reduce other discomforts (Ghiasi et al., 2019; Kaya et al., 2023). The essential oil composition of calamansi is nearly identical to that of other citrus fruits, including decanal, which is beneficial for balancing the nervous system and inducing a relaxing effect in those who inhale it (Choirunni'mah et al., 2023).

Health workers, especially midwives and pharmacists, as the spearhead in providing health services in the community, have the responsibility to provide individual and group services in the community, including the ability to provide assistance and empower the community in utilizing the untapped by-products of calamansi oranges so that they can help improve the economy and public health (Harianingsih et al., 2022; Palisoc et al., 2021).

Based on an initial survey conducted by the service team at Micro, Small and Medium Enterprises (MSMEs) Bukit Bengkulu, Dusun Baru village, Pondok Kubang Sub-District, Central Bengkulu, calamansi orange peel has not yet been utilized as a by-product of making calamansi syrup. So far, the by-product in the form of calamansi orange peel has been left alone until it rots. Calamansi orange peel should be used as aromatherapy with a much-loved fragrance. The activity team is interested in training the community around the Micro, Small and Medium Enterprises (MSMEs) Bukit Bengkulu, Dusun Baru village, Pondok Kubang Sub-District, Central Bengkulu to utilize calamansi orange peel into aromatherapy essential oil in the form of roll-on packaging so that it can be used by the community as a product that has sales value to increase society's income and can be used in everyday life as aromatherapy (Harianingsih et al., 2022).

The aim of this service activity is to increase participants' knowledge about other uses of calamansi orange peel waste and increase community skills in making essential oils and roll-on aromatherapy calamansi orange peel which is used as aromatherapy and has a selling value to increase community income through MSMEs (Mohsin et al., 2021; Rahayu et al., 2023).

B. Research Methods

The method used in this community service is to provide training to the target group. The participants for implementing the activity are 15 members including residents around Micro, Small and Medium Enterprises (MSMEs) Bukit Bengkulu, Dusun Baru village, Pondok Kubang Sub-District, Central Bengkulu. The time for community service will be carried out from 23 to 24 September 2023.

The implementation stage was carried out using lecture techniques, questions and answers, leaflet media, then the community service team carried out a demonstration on making essential oil from calamansi bark according to the applicable SOP. Then, one by one, participants were given the opportunity to demonstrate their skills in making calamansi orange essential oil and making calamansi orange aromatherapy roll-on by monitoring the available checklist with a target participant average score of above 80. The results of this community service were analyzed univariately which produced a picture of the average score of the training participants.

C. Result and Discussion

After going through a series of training stages, it was found that the participants had good skills in making calamansi orange peel essential oil, namely an average score of 83 and had good skills in making calamansi orange aromatherapy roll-on, namely an average score of 87, exceeding the target of 80. These results show

that the participants appearance and skills in making roll-on are good or competent. The training is an implementation of community service results on making roll-on essential oil from calamansi orange peel.

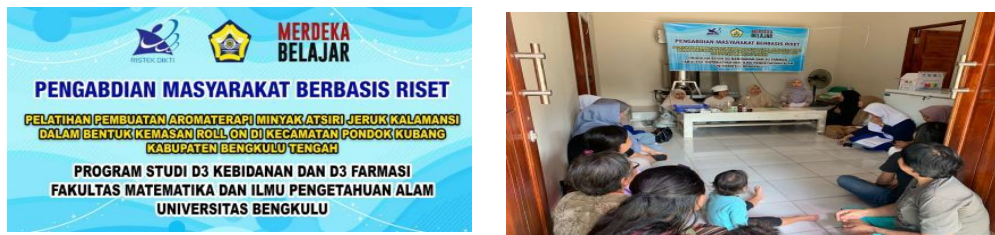


Figure 1. Opening Event For Community Service Activities



Figure 2. Demonstration of Making Roll-On Aromatherapy from Calamansi Orange Peel by the Community Service Team



Figure 3. Redemonstration of Making Roll-on Aromatherapy by the MSMEs and Participants

Utilization of calamansi orange peel as a by-product of making calamansi syrup. So far, the by-product in the form of calamansi orange peel has been left alone until it rots. Calamansi orange peel should be used as aromatherapy with a much-loved fragrance. The community service team is interested in training the MSMEs Bukit Bengkulu, Dusun Baru village, Pondok Kubang Sub-District, Central Bengkulu to use the calamansi orange peel. Calamansi orange is made into aromatherapy essential oil in the form of roll-on packaging so that it can be used by the community as a product that has sales value to increase society's income and can be used in everyday life as aromatherapy (Harianingsih et al., 2022).

The results of community service team show that one of the essential oil contents of calamansi orange is decanal with a score of 86.68 and a retention time of 8.353 minutes (Purnama et al., 2022). The content of calamansi decanal essential oil ($C_{12}H_{24}O$) is the same as the content of Sunkist orange peel essential oil. In addition to being a popular fragrance, this decanal compound helps to balance the neurological system, which helps anyone inhaling it feel calmer. In aromatherapy, decanal compound as well as promotes calm (Elmitra & Noviyanti, 2020; Saleh et al., 2021; Soraya, 2021). The working mechanism of aromatherapy in the human body occurs through two physiological systems, namely the body's circulation and the olfactory system. Fragrances can effect a person's psychological condition, memory, and emotions (Razola-Díaz et al., 2021; Xin et al., 2022).

Organoleptic test results on community service also showed that the majority of respondents liked aromatherapy from calamansi orange essential oil. The community service team also developed the manufacture of calamansi orange aromatherapy packaging in roll-on form which is easier to carry and use. The results of research comparing the effectiveness of calamansi orange aromatherapy (intervention group) and other citrus aromatherapy (control group) showed a significant difference in pain levels in the control and intervention group after being given treatment in 1st posttest and 2nd posttest with the mean rank in the

intervention group being lower, namely 21.62 and 26.45. Meanwhile, in the 3rd posttest, it was found that the mean rank of labor pain in the intervention group was also lower (27.50) than the control group (33.50), so it can be concluded that the use of calamansi orange aromatherapy roll-on can help mothers feel more relaxed and comfortable, thereby reducing the intensity of labor pain during the first active phase, especially at 4 - 7 cm cervix dilatation (Purnama et al., 2023).

Aromatherapy can also be used to reduce other discomforts. The essential oil content of calamansi is almost the same as the essential oil from other types of citrus such as decanal which is often used as a fragrance and is useful for stabilizing the nervous system so that it can have a calming effect on anyone who inhales it (Irmawati et al., 2022; Tutuarima, 2017). The results of the evaluation of knowledge and skills increased because the participants were enthusiastic about following and repeating skills carefully based on the SOP that had been distributed. The public felt this activity was very useful in increasing the usefulness of calamansi orange peel waste into roll-on aromatherapy for relaxation (Rahayu et al., 2023; Tabatabaiechehr & Mortazavi, 2020).

D. Conclusion

The results of this training show an increase in community knowledge about other uses of calamansi orange peel waste and increasing community skills in making essential oils and roll on aromatherapy calamansi orange peel which is used as aromatherapy and has a selling value to increase community income through MSMEs.

E. Acknowledgement

Thanks are expressed to the Faculty of Mathematics and Natural Sciences, Bengkulu University, which has funded the implementation of this community service activity with the contract number :1962/UN30.12/HK/2023 and Micro, Small and Medium Enterprises (MSMEs) Bukit Bengkulu, Dusun Baru Village, Pondok Kubang Sub-District, Central Bengkulu.

References

- Choirunni'mah, Z., Purnama, Y., Suriyati, S., Maryani, D., & Slamet, S. (2023). The Effect of Slow Deep Breathing With Aromatherapy of Calamansi Orange Essential Oil (*Citrofortunella Microcarpa*) on Pain After Caesarean Section at bhayangkara Hospital Bengkulu City. *Journal of Midwifery*, *11*(2), 313–321. <https://doi.org/10.37676/jm.v11i2.5119>
- Elmitra, & Noviyanti, Y. (2020). Uji sifat fisik sabun padat transparan dari minyak atsiri jeruk kalamansi (*Citrus microcarpa*). *Jurnal Akademi Farmasi Prayoga*, *5*(1), 40–48. [Google Scholar](https://doi.org/10.30605/jaf.v5i1.1111)
- Ghiasi, A., Bagheri, L., & Haseli, A. (2019). A Systematic Review on the Anxiolytic Effect of Aromatherapy during the First Stage of Labor. *Journal of Caring Sciences*, *8*(1), 51–60. <https://doi.org/10.15171/jcs.2019.008>
- Harianingsih, H., Kusumaningrum, M., Salim, T. S., Putri, D. I., & Sriwijaya, H. A. (2022). Pelatihan Pembuatan Minyak Aromaterapi “Blissie” Dari Kulit Jeruk Pada Dasawisma Matahari. *Dedikasi : Jurnal Pengabdian Kepada Masyarakat*, *3*(1). [Google Scholar](https://doi.org/10.30605/jaf.v3i1.1111)
- Irmawati, Rosdiana, R., & Baharuddin, A. (2022). Pengaruh Aromaterapi Bitter Orange Terhadap Nyeri Persalinan Pada Fase Aktif Kala 1 Di Puskesmas Kulisusu Kabupaten Buton Utara Tahun 2020. *Window of Health : Jurnal Kesehatan*, *04*(02), 151–160. <https://doi.org/10.33096/woh.vi.250>
- Kaya, A., Yeşildere Sağlam, H., Karadağ, E., & Gürsoy, E. (2023). The effectiveness of aromatherapy in the management of labor pain: A meta-analysis. *European Journal of Obstetrics and Gynecology and Reproductive Biology*: *X*, *20*(October), 0–6. <https://doi.org/10.1016/j.eurox.2023.100255>
- Mohsin, A., Hussain, M. H., Zaman, W. Q., Mohsin, M. Z., Zhang, J., Liu, Z., Tian, X., Salin-Ur-Rehman, Khan, I. M., Niazi, S., Zhuang, Y., & Guo, M. (2021). Advances in sustainable approaches utilizing orange peel waste to produce highly value-added bioproducts. *Crit Rev Biotechnol*, *42*(8). <https://doi.org/10.1080/07388551.2021.2002805>
- Palisoc, S. T., Vitto, R. I. M., Noel, M. G., Palisoc, K. T., & Natividad, M. T. (2021). Highly sensitive determination of heavy metals in water prior to and after remediation using *Citrofortunella Microcarpa*. *Scientific Reports*, *11*(1), 1–14. <https://doi.org/10.1038/s41598-020-80672-9>
- Purnama, Y., Dewiani, K., Rahmawati, S., Yusanti, L., Fitriani, N., Sunaryo, M. A., & Yulyani, L. (2022).

Identification of Calamansi Fruit Peel Essential Oil Components From Bengkulu Using Gc-MS. *Proceeding B-ICON*, 1(1), 293–295. <https://doi.org/10.33088/bicon.v1i1.51>

- Purnama, Y., Dewiani, K., Rahmawati, S., Yusanti, L., & Yulyani, L. (2023). The effectiveness of roll-on aromatherapy of calamansi orange peel essential oil (*Citrofortunella microcarpa*) on reducing anxiety and pain in labor. *Bali Medical Journal*, 12(1), 699–703. [Google Scholar](#)
- Rahayu, M. S., Purnama, Y., Rahmawati, S., Dewiani, K., & Ikhsan. (2023). The Relationship of Deep Breath Relaxation Technique With The Aromatherapy of Calamansi Orange (*Citrofortunella Microcarpa*) Essential Oil Towards Dysmenorhea of Students of The Health Vocational Study Program Faculty of Mathematics and Natural Sciences Un. *Journal of Nursing and Public Health*, 11(2), 408–415. <https://doi.org/10.37676/jnph.v11i2.5170>
- Razola-Díaz, M. del C., Guerra-Hernández, E. J., García-Villanova, B., & Verardo, V. (2021). Recent developments in extraction and encapsulation techniques of orange essential oil. *Food Chemistry*, 354(March). <https://doi.org/10.1016/j.foodchem.2021.129575>
- Saleh, F. H. M., Anindya, M., & Weliza, N. P. (2021). *Pembuatan Minyak Aromaterapi dari Kulit Buah Jeruk Sunkist dan Daun Mint Prodi Teknik Kimia Fakultas Teknologi Industri Universitas Islam Indonesia*. [Google Scholar](#)
- Sinambela, N., Kurnia, H. D., & Tuti, T. (2017). *Kajian Concrete Minyak Atsiri Hasil Samping Padatan Industri Sirup Jeruk Kalamansi (Citrofortunella microcarpa) Dengan Metode Maserasi*. [Google Scholar](#)
- Soraya, S. (2021). Pengaruh Pemberian Inhalasi Aromaterapi Lemon Citrus Terhadap Penurunan Nyeri Persalinan Kala I Fase Aktif. *Jurnal Ilmiah Kesehatan*, 13(2), 184–191. [Google Scholar](#)
- Tabatabaiechehr, M., & Mortazavi, H. (2020). The Effectiveness of Aromatherapy in the Management of Labor Pain and Anxiety: A Systematic Review. *Ethiopian Journal of Health Sciences*, 30(3), 449–458. <https://doi.org/10.4314/ejhs.v30i3.16>
- Tutuarima, T. (2017). Physical and Chemical Properties of Marmalade Citrus of Calamondin (*Citrus microcarpa*): Study of Pectin and Sucrose Concentrations. *Section EKSAKTA : Berkala Ilmiah Bidang MIPA*, 18(2). <https://doi.org/10.24036/eksakta/vol18-iss02/73>
- Tutuarima, T., Dewi, K. H., & Sinambela, N. (2018). Optimization of Maceration Process of Byproduct from Calamansi Syrup Industry (*Citrofortunella microcarpa*). *Jurnal Ilmiah Teknologi Pertanian AGROTECHNO*, 3(2), 359–364. <https://doi.org/10.24843/JITPA.2018.v03.i02.p07>
- Venkatachalam, K., Charoenphun, N., Srean, P., Yuvanatemiya, V., Pipatpanukul, C., Pakeechai, K., Parametthanuwat, T., & Wongsu, J. (2023). Phytochemicals, Bioactive Properties and Commercial Potential of Calamondin (*Citrofortunella microcarpa*) Fruits: A Review. *Molecules*, 28(8), 1–18. <https://doi.org/10.3390/molecules28083401>
- Xin, Y. H., Wu, Y. X., Qiao, B., Su, L., Xie, S. Q., & Ling, P. (2022). Evaluation on the phenotypic diversity of Calamansi (*Citrus microcarpa*) germplasm in Hainan island. *Scientific Reports*, 12(1), 1–12. <https://doi.org/10.1038/s41598-021-03775-x>

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