



The Values of Islamic Education and Science Learning in the Tradition of Jeleng Minyak 1000 Hajat

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Received: November 22, 2022

Revised: January 10, 2023

Accepted: January 25, 2023

Published: January 31, 2023

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DOI: [10.29303/jppipa.v9i1.2913](https://doi.org/10.29303/jppipa.v9i1.2913)

Abstract: The purpose of this research is to find out the values of Islamic education and science learning is integrated in the 1000 Hajat oil Jeleng tradition at the Thohir Yasin Islamic Boarding School Lendang Nangka, East Lombok, West Nusa Tenggara. This research is qualitative research. The selected informants are the chairman of the foundation and the perpetrators of making oil jars and have directly experienced the effects of complementary medicine using oil jars. Data collection techniques are observation, in-depth interviews, and documentary studies. Observations were made on the activity of making Jeleng oil among Thohir Yasin Islamic boarding schools. The results of the research show that during the manufacture of Jeleng oil accompanied by readings that are adjusted according to the stages, then continue reading the prayers. From the start of the warm-up until it finishes reading the letters are Yasin, Assajadah, Addukhan, and Almulk which are read continuously. Science lessons that can be obtained from the process of making Jeleng Oil are from the materials used containing various chemical substances and there are physical changes in its manufacture. Jeleng oil has also been shown to be able to treat various diseases based on the effectiveness of chemical compounds from various ingredients, namely coconut, senna leaves, and saffron.

Keywords: Jeleng Oil; Islamic education; Science Education

Introduction

In the course of the Islamic boarding school educational institution, it has played a significant role in the times it has passed. Both as educational institutions and the development of Islamic teachings, as strongholds of Islamic defense, as institutions of struggle and da'wah, as well as institutions of empowerment and community service.

In general, pesantren or Pondok are defined as "Islamic educational institutions with a dormitory system, the kyai as the central figure and the mosque as the center point for animating it." As an institution that integrates all educational centers, Islamic boarding school education is total, covering all fields of student skills; spiritual, intellectual, and moral-emotional. The process of organizing education and teaching in the world of Islamic boarding schools is examined in more depth and then tried to be read using a more modern

learning paradigm as formulated in UNESCO's four visions of education towards the 21st century.

Thohir Yasin Modern Salaf Islamic Boarding School is a foundation established in October 1990 and oversees formal Islamic boarding schools under PPSM Thohir Yasin, namely PPSM Wustha Thohir Yasin, PPSM Ulya Thohir Yasin, PDF Ulya Thohir Yasin, and Ma'had Aly Thohir Yasin equipped with basic facilities and infrastructure in the form of a building to supporting facilities including a health polyclinic, which is part of the awareness of the Islamic boarding school community regarding health which is implemented through a culture of healthy living in various ways such as; maintain a diet, maintain the cleanliness and health of the environment around Islamic boarding schools, and by improving health through healthy living behaviors.

Problems related to cleanliness in Islamic terminology are called al-Thaharat. According to Imam Al-Suyuti, and Abd Al-Hamid AlQudaht, maintaining a

How to Cite:

Al Idrus, S.A.J., Herlina, L., & Mashuri, M.T. (2023). The Values of Islamic Education and Science Learning in the Tradition of Jeleng Minyak 1000 Hajat. *Jurnal Penelitian Pendidikan IPA*, 9(1), 126-132. <https://doi.org/10.29303/jppipa.v9i1.2913>

clean and healthy life includes worship. The healthy perception according to the santri is if an individual has a healthy body or body and spirit, is not diseased, can carry out activities, and is spiritually healthy.

As a modern Islamic boarding school, the Thohir Yasin Islamic Boarding School has a distinctive culture in health development, namely the manufacture of Jeleng oil which is produced annually on the first night of the month of Rajab with the aim as a medicinal oil to help underprivileged members of society in the medical and non-medical fields. This oil is the result of filtration of various natural ingredients which are believed to be able to cure various diseases. Indonesia as an agricultural country with the growth of various types of plants that can be utilized in various fields including the health sector is supported by research by Widianingrum et al., (2019) showed that the use of coconut oil as a complementary therapy in the health sector is a complementary non-conventional treatment aimed at improving the degree of public health including promotive, preventive, curative and rehabilitative efforts that can be carried out invasively and non-invasively, one of which is the use of refined oil. It can be given in oral or topical therapy. This study aims to determine the benefits of making coconut oil based on the effectiveness of the active compounds used in making coconut oil. To prove that Jeleng oil can be applied as a complementary therapy to the community at the Thohir Yasin Islamic Boarding School in particular, as well as the wider community in general. and rehabilitative can be done invasively and non-invasively, one of which is the use of oil which can be given in oral or topical therapy. This study aims to determine the benefits of making coconut oil based on the effectiveness of the active compounds used in making coconut oil. To prove that Jeleng oil can be applied as a complementary therapy to the community at the Thohir Yasin Islamic Boarding School in particular, as well as the wider community in general.

Pesantren is a unique life, as can be concluded from other descriptions. Pesantren is a complex with locations that are generally separated from the life around it. Factors of physical health, often only in an essential sense. Health factors are often only at the essential level. Initially, Islamic boarding schools were better known as educational institutions aimed at teaching and developing the Islamic religion as well as places to study

Islam. The religion of Islam does not only regulate the practice of worship of God Almighty, but also on behavior and personality towards fellow human beings and the surrounding natural environment. The ability of Islamic boarding schools is not only in the personal development of Muslims, but also in efforts to make social and societal changes and improvements.

In the process of transforming society outside of it culturally, Islamic boarding schools are involved in the creation of a special class in society, which is usually called the "student group" or "community society" or "kauman". Initially created in the community as a support for the life of the pesantren, then the santri group developed into a cultural group that stands alone, with its own aspirations and orientation in life. There are at least two groups of students, namely rural students and urban students. The majority of rural santri tend to maintain the pesantren with material support and provide prospective students who will study at the pesantren.

Society understands health not only as a physical problem but also related to non-physical problems such as mental and personality. Physical health is also related to psychological health, environmental health, and others, much associated with socio-cultural conditions in a society. What's more, the various healing efforts turned out to vary greatly from one community to another.

The Jeleng Minyak is one of the local wisdom cultures from the Thohir Yasin Islamic Boarding School which is believed to be able to cure various diseases. This oil is also called Hifziah oil, or 1000 wish oil because it is made on the first night of the month of Rajab after carrying out the Hifziah prayer, and is believed to be able to answer the many wishes of the congregation in its use, this oil is believed to be able to cure several diseases including wound treatment, heart treatment, kidney, mild stroke, toothache, canker sores, as well as assisting the delivery process with application orally and topically. Basically, Jeleng oil processing can be used as a business that is quite profitable, if the quality is in accordance with market tastes and is carried out in an integrated manner with the processing of the sampled product.

Method

The research location was set at the Thohir Yasin Modern Salaf Islamic Boarding School in East Lombok Regency. The location selection was based on several reasons, namely first, it is a modern salaf pesantren with an existence in the community. Second, the culture of making oil jelly is always done every year. This research is qualitative research with a case study approach that focuses on making Jeleng oil as a complementary

therapy among modern Salaf Islamic boarding schools, especially in the cultural system of the community.

The selected informants are the chairman of the foundation and the perpetrators of making oil jars and have directly experienced the effects of complementary medicine using oil jars. For data collection purposes in this study, as the approach used is qualitative, the techniques used are observation, in-depth interviews, and documentary studies.

Observations were made on the activity of making Jeleng oil among Thohir Yasin Islamic boarding schools. This activity is intended to directly observe the activity of making Jeleng oil starting from the tools and materials, processing, and application. The documentary method is used to obtain written data such as manuscripts or archives which are used as study material and the process of checking and checking information from informants.

Result and Discussion

History of Thohir Yasin Islamic Boarding School Lendang Nangka East Lombok, West Nusa Tenggara

In 1888 AD, the Colonial Minister refused to provide subsidies to Islamic schools because of "the intervention of the Governor General who did not want to sacrifice state finances for these schools which in the end only succeeded in developing an education system that was actually not profitable for our influence and authority". This policy did not help the development of Islamic education in Indonesia, finally, Islamic schools since then have taken their own path, separated from the governor, sticking to their own traditions, but also open to changes in these traditions. Since then education has developed its own educational model which is different and separate from the Dutch education system, as well as the National Education system.

In terms of terminology, it can be explained that pesantren education originates from Indian history. Prior to the spread of Islam in Indonesia, this system was generally used for the education and teaching of Hinduism in Java. After Islam entered and spread in Java, the education system was taken over by Islam. The term pesantren means reciting the Koran, not from the Arabic term, but from India. Likewise, the terms pondok, langgar in Java, surau in Minangkabau and rongkang in Aceh. The issue of the origins of the pesantren cannot be completely resolved without considering the arrival of Islam in Indonesia and the changes in Islam in Indonesia since the early 20th century AD.

There were several factors driving the importance of changing Islam in Indonesia in the early 20th century, including in the 1900s, there was a desire to return to the teachings of the Qur'an and Sunnah which became the basis of religion and culture that rejected taqlid. In

addition, national resistance against Dutch colonialism was characterized by Pan-Islamism and popular organizations such as Sarekat Islam. The efforts of Muslims to strengthen their organization in the socio-economic field, both for their own interests and for the interests of the people at large, as well as the renewal of Islamic education which originated from dissatisfaction with traditional methods of studying the Qur'an and Islamic religious studies.

In the latest developments in the development of Islamic boarding schools in Indonesia, there has been a change in the system, namely the change in the pesantren system to madrasah, and the development from traditional methods to classical education. This is a form of convergence and synthesis in the field of education, in which madrasas gain a position as a balancing institution between Eastern and Western education, Islamic boarding schools and schools, secular and religious subjects. The current development is more toward the general education model that is applied throughout Indonesia.

Tohir Yasin Modern Salaf Islamic Boarding School is a modern Islamic boarding school that combines two types of educational curricula, namely general education and Islamic education. At the beginning of its establishment, Thohir Yasin's Modern Salaf Islamic Boarding School was still in the form of a small halaqah centered at TGH's residence. Ismail Thohir then developed into taklim assemblies that spread across cities, then formed coaching and regeneration institutions. In October 1990, the establishment of the Thohir Yasin Islamic boarding school foundation continued until it was transformed into the Thohir Yasin Modern Salaf Diniyah Madrasah or (Known with PPSM) Thohir Yasin which was commanded by Ust. Ahmad Patoni, M.Pd. with the blessing of the chairman, TGKH. Isma'il Thohir developed to establish several formal institutions namely TK Thohir Yasin, Madrasah Ibtidaiyah Thohir Yasin, M.Ts Banin Thohir Yasin, M.Ts Banat Thohir Yasin, MA Banin Thohir Yasin, and MA Banat Thohir Yasin in 2018. Furthermore, in 2020 PPSM Thohir Yasin established a marhalah ula (graduate) Islamic boarding school college called Ma'had Aly Thohir Yasin (university level) by opening the Fiqh and Ushul Fikih majors. Until now, the modern Salafiyah Islamic boarding school, Thor Yasin, has been running for approximately 32 years.

As an Islamic educational institution, the curriculum developed by PPSM Thohir Yasim is the integration of the pesantren curriculum with the curriculum of the ministry of religion with an emphasis on developing yellow book mastery in Islamic religious disciplines as well as the application of foreign languages and skills. Among the fields of Islamic studies taught at this school are Monotheism, Morals, Interpretation, Hadith, Quran Hadith, Fiqh, Islamic

History, and reading and writing the Koran. For the field of Arabic studies, it consists of Muhadatsah (conversations), Muthalaah (readings), Mahfuzat (beautiful words), Nahwu & Sharf (Arabic grammar), Balaghah (poetic sentences), and Insha' (composing). The teaching and learning process is carried out dynamically, and formally with modern salaf nuances in a classical manner and there are halaqahs.

Awareness of health in the Thohir Yasin PPSM environmental community is supported by a variety of physical activities carried out by the Pondok community, of course, supported by the existing facilities and infrastructure at Thohir Yasin PPSM in the form of open spaces, sports facilities, and the existence of a health polyclinic. The habit of the Pondok community in the use of complementary therapy using jeleng oil for generations is a characteristic of Thohir Yasin's PPSM.

Islamic Values in Making Jeleng Oil

The production of this oil uses natural materials divided into several production groups, namely 1) 44 or 99 old green coconuts, 2) 10 liters of water which have been prayed for by Almukarrom Mr. Tuan Guru H. Ismail Thohir, 3) swallow nests, 4) samamaki, 5) saffron 6) Liver and wings of white free-range chicken and, 7) single garlic. This material will be processed using special tools with traditional manual use consisting of peelers, graters, special containers that are only used when making oil jars, cloth for squeezing coconut milk, as well as large frying pans/large cauldrons/pots and stoves. burning.

Processing starts from making yeast which is carried out on the first Wednesday of the month of Rajab (1 day before the selengan process) by first roasting each spice and then mashing it until smooth and mixing it in one plate for one group with a size of approximately 300 gr and adding two white free-range chicken wings and liver. Furthermore, on the first Thursday of the month of Rajab which starts in the afternoon until the evening is the time for making oil. Some of these procedures are carried out routinely every year accompanied by readings that are adjusted based on the stages of peeling to making coconut milk, then reciting sholawat-sholawat. At the start of the warm-up until it finishes reading the letters are Yasin, Assajadah, Addukhan, Almulk which are read continuously.

After it becomes oil, it is then separated between the oil and the dregs, and the results of making this oil in each group approximately amounting to approximately 5 liters which are packed in certain containers which will be distributed as mementos or as gifts to certain people and members The organizers of the medicine for the medicine are given a label with the name "oil of the drug hifziyah" which includes the date of manufacture. The 150 ml container was awarded to VIP invited guests or

certain people, then the 50 ml container was given to the main committee and Foundation management, while the 5 ml container was given to the organizing committee and the community around PPSM Thohir Yasin who needed it.

The manufacture of extraction and filtration of the materials used, especially coconuts, must be considered in order to avoid the decomposition of high-value compounds (Ng et al., 2021). During the manufacturing process, of traditional oil extraction, the challenges faced by both processes are the low oil yield and the heating process in the hot extraction technique will cause a decrease in the antioxidant properties of the oil (Meng et al., 2019). Crude coconut oil reaches its boiling point at 170°C while virgin coconut oil reaches its boiling point at 232°C (Ströher et al., 2020). As it is known that, coconut oil has the characteristic smell of coconut only when it is not refined, bleached, or deodorized (Silalahi et al., 2019). Coconut oil will form a white homogeneous mixture when mixed with water and stirred. Without stirring, coconut oil will not dissolve in water (Famurewa et al., 2020). It is known that when it is in the solid state, there is little specific change in the temperature of the oil because the molecular weight varies. It's just that, in the process of making oil jelly at PPSM Thohir Yasin, the temperature at the boiling point of the cooked coconut cannot be ascertained.

Science Learning in the Process of Making Jeleng Oil

Some of the ingredients used in the manufacture of jelly oil include coconut fruit which has antibacterial and immunomodulatory activity against staphylococcus aureus, virgin coconut oil can damage the surface of S. aureus cell walls, has antiviral, antifungal, antiprotozoal properties, and can also boost the immune system (Widianingrum et al., 2019; Hwang et al., 2021) essential oil content as anti-inflammatory and analgesic (Sungpu et al., 2020; Alatawi & Alshubaily, 2021). In addition, virgin coconut oil on diclofenac-induced oxidative nephrotoxicity is associated with antioxidant and anti-inflammatory effects (Sinaga et al., 2019) hyperglycemia and hyperlipidemia in diabetes mellitus patients (Alatawi & Alshubaily, 2021). In addition, the swallow's nest contains nutrients water 15.90%, Alanine 1.31%, Arginine 3.93%, Amino Acid 4.56, Aspartic Acid 6.34%, Glutamic Acid 9.61%, Sialic Acid 9%, Phenylalanine 4.49%, Fucose 0.7%, Galactose 16.9%, Galactosamine 7.2%, Glycine 1.87%, Glucosamine 5.3%, Histidine 2.31%, Isoleucine 1.80%, Carbohydrates 22.28%, Fat 0, 67%, Leucine 3.84%, Lysine 5.44%, Methionine 0.48%, Proline 3.64%, Protein 58.55%, Serine 4.56%, Tyrosine 3.92%, Threonine 3.82%, Valine 3.93% has properties Anti-inflammatory (Novenda & Nuroini, 2019) as well as antioxidants (Courtois et al., 2021). Senna leaves have anti-inflammatory activity, oxidative stress (Nayan et al., 2021; Szymanski & Majerz, 2021) as

well as antioxidants (Senna et al., 2022) and anti-infective (Alshehri et al., 2022). Saffron as an anti-convulsant, anti-depressant, anti-inflammatory, anti-tumor, free radical scavenger, and improves memory (Ashktorab et al., 2019; Zeinali et al., 2019).

The use of oil jelly can be drunk directly or mixed into coffee or tea that is drunk and rubbed on the body that is sick. The environmental community of PPSM Thohir Yasin believes that Jeleng oil can help treat wounds, stomach aches, heart disease, kidney disease, minor strokes, treat toothaches, treat canker sores, help with childbirth, treat sprains, treat back pain, increase energy, treat complaints non-medical diseases, as well as helping fulfill the wishes of those who use it.

Complementary therapy is a field of health science that aims to treat various diseases with traditional techniques, which are also known as alternative medicine. Complementary therapy is not carried out with surgical procedures and mass-produced commercial drugs, but usually uses various types of therapy and herbal medicines. Complementary therapy is of more interest to the public, apart from the easy and cheap income process, it also has minimal side effects. In making Jeleng oil by PPSM Thohir Yasin, it is believed that it is capable treating wounds, stomach aches, heart disease, kidney disease, mild stroke, treating toothache, treating canker sores, assisting in childbirth, treating sprains, treating back pain, energy booster.

Research reveals that coconut essential oil is a naturally volatile compound that exhibits a strong odor and is produced as a secondary metabolite by aromatic plants. Historically, essential oils have been used for a variety of medicinal purposes, ranging from skin problems to cancer treatment, and are known for their antimicrobial, anti-inflammatory, sedative, and analgesic properties, thus helping the inflammatory process in various types of wounds throughout the body.

Several biological activities such as anticancer, antimicrobial, analgesic, antipyretic, and anti-inflammatory properties, and antioxidants have also been proven that coconut oil is able to change the expression of several genes related to inflammatory responses as well as several effects on skin treatment. In addition, in the treatment of kidney disease, the activity of coconut oil also works as a serum marker for kidney damage evaluated for evaluation of kidney toxicity, treating ulcers, and a high-fat diet (Meng et al., 2019) Inflammation occurs in response to stimuli such as infection and tissue injury. However, uncontrolled or sustained inflammation triggers several pathophysiological conditions such as bacterial sepsis, rheumatoid arthritis, and skin inflammation so that coconut oil is able to inhibit the rate of pathogenic bacteria with its properties (Alatawi & Alshubaily, 2021). Coconut oil's medicinal uses include benefits in

skin care, hair care, stress relief, weight loss, maintenance of cholesterol levels, immunomodulatory effects, cardiovascular use, and more recently, in Alzheimer's disease (Ströher et al., 2020)

In addition, the content of senna maki daen ingredients, namely flavonoid compounds, is proven to be able to treat ulcers, constipation, yaws, high blood pressure, eyes, and intestinal worms in a traditional way (Marpaung, 2020; Killeit, 2021; Morvaridzadeh et al., 2021). While saffron helps sleep quality (Trials, 2021) helps reduce sexual dysfunction (Ranjbar & Ashrafizaveh, 2019) and cancer treatment (Shakeri et al., 2020) so it is true that Jeleng oil is empirically proven to be able to treat various diseases based on the ingredients used in the manufacturing process.

Conclusion

Based on the research result, it can be concluded that during the manufacture of Jeleng oil accompanied by readings that are adjusted according to the stages, then continue reading the prayers. From the start of the warm-up until finishes reading the letters are Yasin, Assajadah, Addukhan, and Almulk which are read continuously. Science lessons that can be obtained from the process of making Jeleng Oil are from the materials used containing various chemical substances and there are physical changes in its manufacture. Jeleng oil has also been shown to be able to treat various diseases based on the effectiveness of chemical compounds from various ingredients, namely coconut, senna leaves, and saffron.

References

- Alatawi, K. A., & Alshubaily, F. A. (2021). Coconut products alleviate hyperglycaemic, hyperlipidemic and nephropathy indices in streptozotocin-induced diabetic wistar rats. *Saudi Journal of Biological Sciences*, 28(8), 4224–4231. <https://doi.org/10.1016/j.sjbs.2021.06.060>
- Alshehri, M. M., Quispe, C., Herrera-Bravo, J., Sharifi-Rad, J., Tutuncu, S., Aydar, E. F., Topkaya, C., Mertdinc, Z., Ozcelik, B., Aital, M., Kumar, N. V. A., Lapava, N., Rajkovic, J., Ertani, A., Nicola, S., Semwal, P., Painuli, S., González-Contreras, C., Martorell, M., ... Cho, W. C. (2022). A Review of Recent Studies on the Antioxidant and Anti-Infectious Properties of Senna Plants. *Oxidative Medicine and Cellular Longevity*, 2022. <https://doi.org/10.1155/2022/6025900>
- Ashktorab, H., Soleimani, A., Singh, G., Amin, A., Tabtabaei, S., Latella, G., Stein, U., Akhondzadeh, S., Solanki, N., Gondr, M. C., Habtezion, A., & Brim, H. (2019). Saffron: The Golden Spice with Therapeutic. *Nutrients*, 11, 1–16.

- Courtois, È., Garant, D., Pelletier, F., & Bélisle, M. (2021). Nonideal nest box selection by tree swallows breeding in farmlands: Evidence for an ecological trap? *Ecology and Evolution*, *11*(22), 16296–16313. <https://doi.org/10.1002/ece3.8323>
- Famurewa, A. C., Akunna, G. G., Nwafor, J., Chukwu, O. C., Ekeleme-Egedigwe, C. A., & Oluniran, J. N. (2020). Nephroprotective activity of virgin coconut oil on diclofenac-induced oxidative nephrotoxicity is associated with antioxidant and anti-inflammatory effects in rats. *Avicenna Journal of Phytomedicine*, *10*(3), 316–324.
- Hwang, K. N., Tung, H. P., Lu, Y. H., & Shaw, H. M. (2021). Liquid chicken oil could be a healthy dietary oil. *Journal of Oleo Science*, *70*(8), 1157–1164. <https://doi.org/10.5650/jos.ess21053>
- Killeit, U. (2021). Chemical composition and sensory evaluation of saffron. *Deutsche Lebensmittel-Rundschau*, *117*(12), 1–8.
- Marpaung, R. G. (2020). Isolasi Senyawa Kempferol dan Rhamnetin yang Terkandung pada Daun Tumbuhan Senna (*Cassia Angustifolia*). *Jurnal Teknosains Kodepena*, 24–28.
- Meng, J., Chen, T., Zhao, Y., Lu, S., Yu, H., Chang, Y., & Chen, D. (2019). Study of the mechanism of anti-ulcer effects of virgin coconut oil on gastric ulcer-induced rat model. *Archives of Medical Science*, *15*(5), 1329–1335. <https://doi.org/10.5114/aoms.2018.76943>
- Morvaridzadeh, M., Agah, S., Dulce Estêvão, M., Hosseini, A. S., Heydari, H., Toupchian, O., Abdollahi, S., Persad, E., Abu-Zaid, A., Rezamand, G., & Heshmati, J. (2021). Effect of saffron supplementation on oxidative stress parameters: A systematic review and meta-analysis of randomized placebo-controlled trials. *Food Science and Nutrition*, *9*(10), 5809–5819. <https://doi.org/10.1002/fsn3.2463>
- Nayan, S. I., Chowdhury, F. I., Akter, N., Rahman, M. M., Selim, S., Saffoon, N., Khan, F., Subhan, N., Hossain, M., Shahin Ahmed, K., Hossain, H., Haque, M. A., & Alam, M. A. (2021). Leaf powder supplementation of *Senna alexandrina* ameliorates oxidative stress, inflammation, and hepatic steatosis in high-fat diet-fed obese rats. *PLoS ONE*, *16*(4 April), 1–25. <https://doi.org/10.1371/journal.pone.0250261>
- Ng, Y. J., Tham, P. E., Khoo, K. S., Cheng, C. K., Chew, K. W., & Show, P. L. (2021). A comprehensive review on the techniques for coconut oil extraction and its application. *Bioprocess and Biosystems Engineering*, *44*(9), 1807–1818. <https://doi.org/10.1007/s00449-021-02577-9>
- Novenda, O., & Nuroini, F. (2019). Uji Efektifitas Anti Inflamasi Ekstrak Akuosa Sarang Walet (*Collocalia fuciphaga* Thunberg) Terhadap Kadar C-Reaktif Protein Pada Tikus Putih (*Rattus norvegicus*). *Prosiding Mahasiswa Seminar Nasional Unimus*, *2*(2654-766X), 252–256.
- Ranjbar, H., & Ashrafzaveh, A. (2019). Effects of saffron (*Crocus sativus*) on sexual dysfunction among men and women: A systematic review and meta-analysis. *Avicenna Journal of Phytomedicine*, *9*(5), 419–427.
- Senna, C., Hplc-uv, A. P., Analysis, A., & Alqahtani, A. S. (2022). Response Surface Methodology (RSM) - Based Optimization of. *Molecules*, *27*, 298. <https://doi.org/10.3390/molecules27010298>
- Shakeri, M., Tayer, A. H., Shakeri, H., Jahromi, A. S., Moradzadeh, M., & Hojjat-Farsangi, M. (2020). Toxicity of saffron extracts on cancer and normal cells: A review article. *Asian Pacific Journal of Cancer Prevention*, *21*(7), 1867–1875. <https://doi.org/10.31557/APJCP.2020.21.7.1867>
- Silalahi, J., Yuandani, Y., Meliala, D. I. P. B., Margata, L., & Satria, D. (2019). The activity of hydrolyzed virgin coconut oil to increase proliferation and cyclooxygenase-2 expression towards on nih 3t3 cell line in wound healing process. *Open Access Macedonian Journal of Medical Sciences*, *7*(19), 3164–3168. <https://doi.org/10.3889/oamjms.2019.804>
- Sinaga, F. A., Harahap, U., Silalahi, J., & Sipahutar, H. (2019). Antioxidant effect of virgin coconut oil on urea and creatinine levels on maximum physical activity. *Open Access Macedonian Journal of Medical Sciences*, *7*(22), 3781–3785. <https://doi.org/10.3889/oamjms.2019.503>
- Ströher, D. J., De Oliveira, M. F., Martinez-Oliveira, P., Pilar, B. C., Cattelan, M. D. P., Rodrigues, E., Bertolin, K., Gonçalves, P. B. D., Piccoli, J. D. C. E., & Manfredini, V. (2020). Virgin Coconut Oil Associated with High-Fat Diet Induces Metabolic Dysfunctions, Adipose Inflammation, and Hepatic Lipid Accumulation. *Journal of Medicinal Food*, *23*(7), 689–698. <https://doi.org/10.1089/jmf.2019.0172>
- Sungpud, C., Panpipat, W., Sae Yoon, A., & Chaijan, M. (2020). Ultrasonic-assisted virgin coconut oil based extraction for maximizing polyphenol recovery and bioactivities of mangosteen peels. *Journal of Food Science and Technology*, *57*(11), 4032–4043. <https://doi.org/10.1007/s13197-020-04436-z>
- Szymanski, S., & Majerz, I. (2021). In silico studies on sennidines – natural dianthrones from senna. *Biology*, *10*(6). <https://doi.org/10.3390/biology10060468>
- Trial, D. C. C. (2021). Effects of Saffron Extract on Sleep Quality: A Randomized. *Nutrients*, *13*(1473), 1–11. Retrieved from <https://doi.org/10.3390/nu13051473>

- Widianingrum, D. C., Noviandi, C. T., & Salasia, S. I. O. (2019). Antibacterial and immunomodulator activities of virgin coconut oil (VCO) against *Staphylococcus aureus*. *Heliyon*, 5(10), e02612. <https://doi.org/10.1016/j.heliyon.2019.e02612>
- Zeinali, M., Zirak, M. R., Rezaee, S. A., Karimi, G., & Hosseinzadeh, H. (2019). Immunoregulatory and anti-inflammatory properties of *Crocus sativus* (Saffron) and its main active constituents: A review. *Iranian Journal of Basic Medical Sciences*, 22(4), 334–344. <https://doi.org/10.22038/ijbms.2019.34365.8158>