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(BORING SEN) CHERRY LEAF DRIED SPONGE IS BENEFICIAL IN MAINTAINING CHOLESTEROL LEVELS AND HIGH BLOOD PRESSURE

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ABSTRACT

The myocardium is a layer of heart muscle that is responsible for pumping the heart and supplying the entire body with blood. Cherry leaf extract that can be used are: 100 ml of water with a water content of 22.63%; Reducing sugar 3.8173%; 2.43% ash content; Texture (physical) 15.52%; 17.60% brightness; 8.796% protein; Flavor 4.30%; Fragrance 4.15%; Color 4.75%; Texture 4.75%. Cherry leaves have properties to protect liver cells from damage caused by free radicals, the content of sponins, and flavonoids in cherry leaves. The benefits of these leaves provide an innovation for the author in making snacks in the form of dry sponge cakes that can provide benefits in regulating cholesterol levels and high blood pressure. The price of the BORING SEN product for a weight of 250 grams is Rp. 15,000, - and is quite cheap and affordable for the general public. The target of this BORING SEN product is for people who have cholesterol and high blood pressure problems. The flavor variants of this product are: Original, Lime Leaves, Pandanus, and Chocolate.

Keywords: Cherry Leaves, Cholesterol, Dry Sponge Cake, High Blood Pressure

1. INTRODUCTION

1.1 Background

Snacks are foods that are not the main menu consumed by the community [1]. The snack in question is food to relieve someone's hunger temporarily and can provide a little energy supply to the body or is something that is eaten to enjoy the taste [2]. Usually snacks in the form of dry sponge, cake, bread and chips. In addition to temporarily eliminating hunger, snacks can also be used as friends to drink tea or coffee [3].

In the general public, one of the snacks that are very popular is dry sponge. Sponge is a pastry made from flour, sugar, eggs and vanilla [4]. Dried sponge usually has a sweet taste and a crunchy texture [5]. There are many dry sponges on the market, but the dry cakes found in the market generally only use pandan leaves as a colorant and aroma enhancer [6]. In this case the author wants to add a variety of other raw materials in the manufacture of dry sponge cake, but it has great benefits [7]. Seri, Cheri or Kersen which has the Latin name Muntingia calabura is a kind of tree that also has small fruit, bright red color and has a sweet taste [8]. In addition to the fruit, it turns out that cherry fruit leaves also contain flavonoid compounds, tannins, triterpenoids, saponins, and polyphenols that show antioxidant and antimicrobial activity [9]. Cherry leaves also have Efficacy to protect liver cells from damage caused by free radicals, the content of sponins and flavonoids in

cherry leaves also has the benefit of reducing cholesterol synthesis and helps reduce fat accumulation in blood vessels. In addition, cherry leaves also have benefits for preventing high blood pressure [10]. Cherry leaves can also protect the myocardium [11]. The myocardium is a layer of heart muscle that is responsible for pumping the heart and supplying the entire body with blood [12]. Regular consumption of cherry leaves results in a significant reduction in the restriction of enzyme leakage from the myocardium, thus enabling the heart to stay healthy [13]. The best cherry leaf extract is 100 grams: 100 ml Water with a water content of 22.63%; Reducing sugar 3.8173%; Ash content 2.43% ; Texture (physical) 15.52%; 17.60% brightness ; 8.796% protein; Taste 4.30% ; Aroma 4.15% ; Color 4.75% ; Texture 4.75% [14-22].

Based on this background, the author has an innovation to process cherry leaves into dried sponge with the benefits of regulating cholesterol levels and high blood pressure and has a selling value with the name BORING SEN [23].

1.2 Formulation of the problem

The formulation of the problem in this proposal is as follows:

a) How is the process of processing BORING SEN dry sponge as a food business made from cherry leaves which has the benefit of regulating cholesterol levels and high blood pressure?
b) How is the marketing process of BORING SEN dry sponge as a food business made from cherry leaves which has the benefit of regulating cholesterol levels and high blood pressure?

1.3 Aim

The aims of this proposal are as follows:

a) To find out how the process of making BORING SEN dry sponge as a food business made from cherry leaves which has the benefit of regulating cholesterol levels and high blood pressure.
b) To find out the marketing process of BORING SEN dry sponge as a food business made from cherry leaves which has the benefit of regulating cholesterol levels and high blood pressure.

1.4 Benefit

The expected benefits from this business activity are as follows:

a) Creating dry sponge products with new basic ingredients with the benefits of regulating cholesterol levels and high blood pressure.
b) Increase the selling value of cherry leaves by processing them into nutritious food.
c) Increase innovation in finding works that can be used as promising business opportunities.
d) As an alternative to create jobs to reduce unemployment.
e) Provide references and considerations for the community in utilizing and processing cherry leaves into products that have higher benefits and selling value.

1.5 Outside

The expected outcomes of this program are as follows:

a) The creation of dry sponge products with very high benefits.
b) Creating new jobs based on Small and Medium Enterprises (UMK) so as to reduce unemployment.
c) Publication of scientific articles.
d) Business progress report.
e) Business final report.
f) Publication in mass media.

2. LITERATURE REVIEW

2.1 SME Vision and Mission

2.1.1 Vision

Turning the cherry leaf dry feather business into a Small Medium Enterprise (UMK) which has great benefits for regulating cholesterol levels and high blood pressure.

2.1.2 Mission

The mission of this business activity is:

a. Creating product innovations with attractive and environmentally friendly packaging.
b. Creating competitive value and also of course having an economic selling value that is in demand by the whole community.
c. Prioritizing hygienic production quality, maintaining the nutritional value and benefits contained in the product.
d. Evaluating products by collecting data related to consumer assessments of the products offered.

2.2 General Condition of Business Activity Environment

The general condition of the strategic business environment is because sources of raw materials are easy to obtain. The raw material used is cherry leaf obtained from the community around the city of Padang, especially the Padang State University area. This business was opened in the Padang State University area, making it easy for consumers to reach.

2.3 Product Overview

2.3.1 Product

BORING SEN is a healthy food business in the form of dry sponge which is processed from environmentally friendly raw materials, namely cherry leaves [24]. Cherry leaves are leaves that usually only become waste when they turn yellow and fall from the stem, so they are only thrown away or used as compost [25-26]. Cherry leaves are processed into dried sponge which is beneficial for health [27-28]. In addition, cherry leaves also contain sponins and flavonoids which have the benefit of reducing cholesterol synthesis and reducing fat accumulation in the blood vessels [29]. Cherry leaf dried sponge has an economical price and has many health benefits. Has a high market opportunity, because competing products sold in the market do not have the benefit of regulating cholesterol levels and blood pressure [30].

2.3.2 Price

The unit price of a product weighing 250 grams is Rp. 15,000,-

2.4 Potential Resources and Market Opportunities

2.4.1 Resource Potential

2.4.1.1 Organizational Structure and Personnel of the Business

The job descriptions are as follows:

a) Chief Executive Officer (CEO): Manage the running of the business, Coordination with financial and Administration managers as well as each division, Verification of Planning and Business Development.
b) Financial Manager: Prepare financial and administrative needs, Create financial reports, Coordinate to serve consumers.
c) Research and Development Manager: As the person in charge of product development research and other renewal activities.
d) Marketing Manager: Conceptualize and determine appropriate promotional strategies, conduct research on consumer satisfaction and other effectiveness, prepare promotional media.
e) Administration Manager: Management of business cooperation towards the consumer network, reporting cooperation to the general manager.

2.4.1.2 Product Advantages Offered

The advantages of the products offered are as follows:

a) The resulting product has a very delicious taste and has properties that are good for health.

b) Kersen leaf raw materials contain flavonoid compounds, tannins, triterpenoids, saponins, and polyphenols which exhibit antioxidant and antimicrobial activities which are very beneficial for health.

c) Has a variety of flavors.

d) It has an affordable price, which is 15,000 per 250 grams.

e) Give bonus BORING SEN stickers to buyers who buy more than 2 packs.

f) Receive delivery services for events that are many.

g) The sales location is easy to reach because it is right around the campus.

2.4.2 Market opportunity

Table 1. Business Environment Analysis (SWOT)

<table>
<tr><td colspan="3">STRENGTH</td></tr>
<tr><td>Anti-cholesterol innovation drink, a combination of yogurt with coconut embryo and additional healthy fruit topping variants, as well as products that will maintain nutrition.</td><td>Services:
The existence of additional services and facilities for this business such as competent human resources and the existence of interaction media with customers consumer.</td><td>Selling Price:
Affordable prices and adjusted to market prices.

Uniqueness:
Cup packaging very unique because it is equipped with stickers and motivational words.</td></tr>
<tr><td colspan="3">WEAKNESS</td></tr>
<tr><td colspan="2">Formal legal: Not yet have legal entity status from the from the government, making it difficult to market the product. But it will be anticipated with legality and accountability on behalf of the Institution business owner, namely UNP.</td><td>Publication: Limited costs needed for promotional activities and publications to all target market.</td></tr>
<tr><td colspan="3">OPPORTUNITIES</td></tr>
<tr><td>Market Opportunities:
Seeing the people's habit of consuming unhealthy snacks that can cause cholesterol, this product is very promising because anti-cholesterol properties are needed as a preventive agent and healthy drinks that have high nutritional value, are safe and economical.</td><td>Production: Cost production that inexpeiinsive,

Network: Many Group the people who will be invited communicate and work together for increase promotion media.</td><td>Production:
Cost production

Network: Many group the people who will binvited communicate and work together for increase</td></tr>
<tr><td colspan="3">THREATS</td></tr>
</table>

Capital: No test yet BPOM and halal label. Limited capital for the development of this business in initial business activities so that difficult to develop a business towards professional one.	Competition: Competition for similar businesses may be an obstacle for this business. This obstacle will be overcome by improving and improving the quality and service of our products. Consumption aspect: The product is not durable.

2.5 Marketing strategy

2.5.1 Product Development

The BORING SEN product will continue to be developed, until it reaches marketing expansion outside the city of Padang. In the product, packaging design innovation will be carried out, namely by adding stickers, and motivational words on the packaging. In addition, the BPOM test will be carried out and the nutritional value attachment on the packaging will be carried out.

2.5.2 Marketing and Service Area Development

The marketing of this business is in the West Sumatra area, which will then be developed in the future by expanding the marketing and service area to outside West Sumatra by utilizing IT media and online systems.

2.5.3 Promotion Strategy

Promotional activities are carried out personally to consumers in several ways, such as distributing posters to schools and to campuses around the city of Padang. Then promotion can also be done by participating in bazaar activities or entrepreneurship exhibitions. In addition, promotion through social media can also be done by making videos and photos explaining about BORING SEN products.

2.6 Business Feasibility Analysis

2.6.1 Internal Rate of Return (IRR)

The IRR of the efforts we have made is 78%, meaning that the efforts we will make are feasible to continue. Because the IRR is greater than the bank interest that is owned as an initial business investment fund.

2.6.2 Break Event Points (BEP)

1. Cost Details
   a. Production cost in 3 months (300 kg or 1200 pcs)
      - Consumable costs = Rp. 8,940,000
      - Other costs = IDR 2,310,000 +

        Total cost =IDR 11,250,000

- Cost/month = IDR 3.750.000

b. Cost per pcs

- Total cost / product quantity = IDR 11,250,000 / 1200 pcs
  = IDR 9,375 / rounded up to IDR 9,400

c. Product selling price per pcs

Selling price per pcs – cost price per pcs = Rp. 20,000 – Rp 9,400
= Rp. 10,600

2. Monthly Income Prediction

a. Sales target per day = 15 pcs x Rp 20,000
= IDR 300,000

b. Income per month = IDR 300,000 x 30 days
= IDR 9,000,000

c. Profit per month = Total income-cost per month
= IDR 9,000,000 - IDR 3,750,000
= IDR 5,250,000

3. BEP Profit and Loss Analysis

It is assumed that the operating profit target in one month is IDR 5,250,000
= Sales per month – Total cost per month
= (450 pcs x IDR 20,000) – IDR 3,750,000
= IDR 9,000,000 – IDR 3,750,000
= IDR 5,250,000

3. EXPERIMENTAL

3.1 Production of BORING SEN

3.1.1 Preparation of Tools anda Materials

In the manufacture of this product requires several ingredients, namely: cherry leaves, sugar, flour, eggs, vanilla, cocoa powder, butter.

Some of the tools used, namely: a large mixer, blender, cake mould, digital scale, basin and jar.

3.1.2 Standard Work Procedure

All processes from production to packaging use Standard Operating Procedures (POB) so as to meet occupational safety, health and safety (K3).

3.2 Manufacture of BORING SEN Produk Products

To produce BORING SEN dry sponge, the following steps are carried out:

1) Prepare tools and materials.
2) Blend 100 grams of cherry leaves with 100 mL of water, then strain.

3) Put 10 eggs and 1 kg of sugar into the mixer, then mix.
4) After expanding, add enough vanilla, then stir again.
5) Then add the cherry leaf water, stir again.
6) After expanding perfectly, take a little dough and mix it with flour until the dough becomes smooth.
7) The dough can be added with cocoa powder if you want to make a cake with a chocolate flavor.
8) Heat the mold, put a little butter into the mold.
9) then enter the dough that has been added flour.
10) Wait until the cake turns golden yellow.
11) Dried sponge is ready to be served in a sterile and attractive packaging.

3.3 Target Market

The target of this business is community groups and all business components that support and carry out business operations inside and outside the city of Padang. This business will continue in line with the level of consumer demand for this product, so that this business is also expected to reach all of Indonesia and abroad, as one of the business expansions that is easy to generate profits so that the wealth of natural and human resources is used optimally.

3.4 Sales and Marketing Strategy

3.4.1 Business execution

Figure 1. Business implementation

3.4.2 Marketing and Service Area Development

The BORING SEN production house located in Padang City allows for the initial stage of the business. For the development of a wider marketing area, management techniques are carried out by utilizing the online market sector and also product storage ranging from small stalls, university offices, supermarkets, to other large shopping centers.

3.4.3 Promotion Strategy

Table 2. Promotion Strategy

Strategy	Activity
Social media Strategi	The promotion system uses social media either through fanpage and accounts with reference to the concept of branding with social media optimization techniques.

Community Media Strategy	It is a combination of promotion through the media community by integrating social media strategy. The community strategy will be involved through collaboration with the PKM Team or through a community that accommodates and at the same time carries out promotions, both personal promotion and promotion community social media.
Web Content Strategy	Website that provides efficiency and effectiveness for consumers in carrying out activities in daily life. This website will apply the concept of branding with SEO (Search Engine Optimization) techniques and tools information.
Marketing Corporation	The PKM team will cooperate with cooperatives, supermarkets, malls and other market sectors around the city of Padang.
Video Content Strategy	Promotional videos that will be distributed through social media websites, launching, exhibitions and personal sharing. The video contains content about consumer testimonials who have subscribed and video advertisements with the concept of emotional content.
Poster/Brosur	Promotion using advertising posters that will be distributed to schools, campuses and institutions that are participating in the promotion main target consumers.

4. RESULTS AND DISCUSSION

4.1 Submission Process

The journal operates an online submission and peer review system that allows authors to submit articles online and track their progress via a web interface. Articles that are prepared referring to this template should be controlled according to submission checklist given in "Guide f Authors". Editor handles submitted articles to primarily in order to control in terms of compatibility to aims and scope of Journal. Articles passed this control are checked for grammatical and template structures. If article passes this control too, then reviewers are assigned to article and Editor gives a reference number to paper. Authors registered to online submission system can track all these phases. Editor also informs authors about processes of submitted article by e-mail. Each author may also apply to Editor via online submission system to review papers related to their study areas. Peer review is a critical element of publication, and one of the major cornerstones of the scientific process. Peer Review serves two key functions:

- Acts as a filter: Ensures research is properly verified before being published
- Improves the quality of the research

5. CONCLUSION

BORING SEN is a healthy food business in the form of dry sponge which is processed from environmentally friendly raw materials, namely cherry leaves. Cherry leaves are leaves that usually only become waste when they turn yellow and fall from the stem, so they are only thrown away or used as compost . Cherry leaves are processed into dried sponge which is beneficial for health . In addition, cherry leaves also contain sponins and flavonoids which have the benefit of reducing cholesterol synthesis and reducing fat accumulation in the blood vessels. Cherry leaf dried sponge has an economical price and has many health benefits. Has a high market opportunity, because competing products sold in the market do not have the benefit of regulating cholesterol levels and blood pressure. The unit price of a product weighing 250 grams is Rp. 15,000,-. The target of this business is community groups and all business components that support and carry out business operations inside and outside the city of Padang. This business will continue in line with the level of consumer demand for this product, so that this business is also expected to reach all of Indonesia and abroad, as one of the business expansions that is easy to generate profits so that the wealth of natural and human resources is used optimally

REFERENCES

[1] Emilia, E., Juliarti, J., & Akmal, N. 2021. ANALISIS KONSUMSI MAKANAN JAJANAN TERHADAP PEMENUHAN GIZI REMAJA. JURNAL GIZI DAN KULINER (JOURNAL OF NUTRITION AND CULINARY), 1(1), 23-30.

[2] Perdhana, T. S., Untari, D. T., & Satria, B. (2022). Comunnity Interest of Betawi Traditional Culinary in Bekasi, West Java; an evidence-based approach. *Asia Pacific Journal of Business Economics and Technology*, *2*(01), 24-29.

http://apjbet.com/index.php/apjbet/article/view/17

[3] Sari, L. A., Ningsih, C., & Turgarini, D. (2021). Trial Offer Snack Menu of Consumer Buying Interest of Kereta Api Indonesia Passengers.

[4] Anggraeni, E., Suprihartini, C., & Kartika, S. C. (2021). The Effect of Green Bean Flour Proportion (Vigna Radiate L.) on Acceptance, Water Content, and Fiber Content on Purple Sweet (Ipomea Batatas L. Poir) Sponge Cakes. *Journal for Quality in Public Health*, *5*(1), 315-322.

DOI: https://doi.org/10.30994/jqph.v5i1.278

[5] Yulizar, Y., Apriandanu, D. O. B., & Surya, R. M. (2022). Fabrication of novel SnWO4/ZnO using Muntingia calabura L. leaf extract with enhanced photocatalytic methylene blue degradation under visible light irradiation. *Ceramics International*, *48*(3), 3564-3577.

https://doi.org/10.1016/j.ceramint.2021.10.135

[6] Zolkeflee, N. K. Z., Ramli, N. S., Azlan, A., & Abas, F. (2022). In Vitro Anti-Diabetic Activities and UHPLC-ESI-MS/MS Profile of Muntingia calabura Leaves Extract. *Molecules*, *27*(1), 287.

https://doi.org/10.3390/molecules27010287

[7] Silviani, D., Marliyati, S. A., & Kustiyah, L. (2022). Pengaruh Pemanfaatan Tepung Buah Kersen (Muntingia calabura L.) dan Substitusi Gula terhadap Kandungan Gizi, Antioksidan dan Organoleptik Biskuit The Effect of Calabura Fruit (Muntingia calabura L.) Flour Utilization and Sugar Substitution on Nutritional, Antioxidants and Organoleptics of Biscuit. *Media Gizi Indonesia*, *17*(1), 33-42.

http://dx.doi.org/10.20473/mgi.v17i1.33-42

[8] Siberani, K. F. (2022). Pembuatan Hardy Candy Mengunakan Ekstrak Buah Kersen (Muntingia calabura L.) Dan Ekstrak Buah Lemon (Citrus limon). *Agrintech: Jurnal Teknologi Pangan dan Hasil Pertanian*, *4*(1), 9.

DOI: http://dx.doi.org/10.30596%2Fagrintech.v4i1.9160

[9] Alfilaili, B. S., Hajrin, W., & Juliantoni, Y. (2022). Optimasi Konsentrasi Vaselin Album dan Adeps Lanae pada Formulasi Sediaan Salep Ekstrak Etanol Daun Kersen (Muntingia calabura L.). *Acta Pharmaciae Indonesia: Acta Pharm Indo*, *9*(2), 119-127.

[10] Rifai, A. K., & Puspitawati, R. P. (2022). Respon Morfologi, Anatomi dan Fisiologi Daun Kersen (Muntingia calabura) Akibat Paparan Timbal Pb yang Berbeda di Surabaya. *LenteraBio: Berkala Ilmiah Biologi*, *11*(1), 8-14.

[11] Setiawan, S., Astar, I., & Oktarianty, S. (2022). Pelatihan Pembuatan dan Aplikasi Pestisida Nabati dari Ekstrak Daun Kersen (Muntingia calabura L.) pada Pembibitan Tanaman Hortikultura di Kota Pontianak. *Jurnal Abdi Masyarakat Indonesia*, *2*(1), 355-360.

[12] Gunarti, N. S. (2021). Studi Etnobotani Tumbuhan Obat di Desa Kutalanggeng dan Kutamaneuh Kecamatan Tegalwaru Kabupaten Karawang Jawa Barat. *Majalah Farmasetika*, 6.

DOI: https://doi.org/10.24198/mfarmasetika.v6i0.36668

[13] Damayanti, A, Astuti, W, & Putri, R, D, A. 2019. Peningkatan Nilai Tambah Daun Kersen (Muntingia Calabura L.) Menjadi Permen Jelly dan Teh Seduh. Jurnal Pengabdian Kepada Masyarakat. 23 (2):87-91.

DOI: https://doi.org/10.15294/abdimas.v23i2.15110

[14] E. Kabalcı, E. Irmak, I. Çolak, "Design of an AC-DC-AC converter for wind turbines", International Journal of Energy Research, Wiley Interscience, DOI: 10.1002/er.1770, Vol. 36, No. 2, pp. 169-175. (Article)

DOI: https://doi.org/10.1002/er.1770

[15] I. Çolak, E. Kabalci, R. Bayindir R., and S. Sagiroglu, "The design and analysis of a 5-level cascaded voltage source inverter with low THD", 2nd PowerEng Conference, Lisbon, pp. 575-580, 18-20 March 2009. (Conference Paper)

https://doi.org/10.1109/POWERENG.2009.4915185

[16] Stryjecka, M., Michalak, M., Cymerman, J., & Kiełtyka-Dadasiewicz, A. (2022). Comparative Assessment of Phytochemical Compounds and Antioxidant Properties of Kernel Oil from Eight Sour Cherry (Prunus cerasus L.) Cultivars. *Molecules*, *27*(3), 696.

https://doi.org/10.3390/molecules27030696

[17] Ahmad, M. S., Isa, I. M., Hashim, N., Saidin, M. I., Suyanta, S., Zainul, R., ... & Mukdasar, S. (2019). Zinc layered hydroxide-sodium dodecyl sulphate-isoprocarb modified multiwalled carbon nanotubes as sensor for electrochemical determination of dopamine in alkaline medium. International Journal of ELECTROCHEMICAL SCIENCE, 14, 9080-9091.
doi: 10.20964/2019.09.54

[18] Zainul, R., Abd Azis, N., Md Isa, I., Hashim, N., Ahmad, M. S., Saidin, M. I., & Mukdasai, S. (2019). Zinc/aluminium–quinclorac layered nanocomposite modified multi-walled carbon nanotube paste electrode for electrochemical determination of bisphenol A. Sensors, 19(4), 941.
https://doi.org/10.3390/s19040941

[19] Stryjecka, M., Michalak, M., Cymerman, J., & Kiełtyka-Dadasiewicz, A. (2022). Comparative Assessment of Phytochemical Compounds and Antioxidant Properties of Kernel Oil from Eight Sour Cherry (Prunus cerasus L.) Cultivars. *Molecules*, *27*(3), 696.
https://doi.org/10.1002/pca.3110

[20] Putri, G. E., Arief, S., Jamarun, N., Gusti, F. R., & Zainul, R. (2019). Microstructural analysis and optical properties of nanocrystalline cerium oxides synthesized by precipitation method. Rasayan J. Chem, 12(1), 85-90.
http://dx.doi.org/10.31788/RJC.2019.1215029

[21] Sharif, S. N., Hashim, N., Isa, I. M., Bakar, S. A., Saidin, M. I., Ahmad, M. S., ... & Zainul, R. (2021). Chitosan as a coating material in enhancing the controlled release behaviour of zinc hydroxide nitrate–sodium dodecylsulphate–bispyribac nanocomposite. Chemical Papers, 75(2), 611-627.
https://doi.org/10.1007/s11696-020-01331-x

[22] Nurashikin, A. A., Isa, I. M., Hashim, N., Ahmad, M. S., Zainul, R., Siti, N. A. M. Y., ... & Mukdasai, S. (2020). Synergistic Effect of Zinc/Aluminium-Layered Double Hydroxide-Clopyralid Carbon Nanotubes Paste Electrode in the Electrochemical Response of Dopamine, Acetaminophen, and Bisphenol A. International Journal of Electrochemical Science, 15(8), 9088-9107.
doi: 10.20964/2020.09.04

[23] Rifai, A. K., & Puspitawati, R. P. (2022). Respon Morfologi, Anatomi dan Fisiologi Daun Kersen (Muntingia calabura) Akibat Paparan Timbal Pb yang Berbeda di Surabaya. *LenteraBio: Berkala Ilmiah Biologi*, *11*(1), 8-14.
https://journal.unesa.ac.id/index.php/lenterabio/index

[24] Alfilaili, B. S., Hajrin, W., & Juliantoni, Y. (2022). Optimasi Konsentrasi Vaselin Album dan Adeps Lanae pada Formulasi Sediaan Salep Ekstrak Etanol Daun Kersen (Muntingia calabura L.). *Acta Pharmaciae Indonesia: Acta Pharm Indo*, *9*(2), 119-127.
https://doi.org/10.20884/1.api.2021.9.2.4084.

[25] Karita, D., Riyanto, R., Histopaedianto, I., Kusuma, Y. I., Putra, G. R., & Trismawan, Y. (2022). Pengaruh Ekstrak Daun Kersen Terhadap Kadar Malondialdehid Rattus norvegicus Model Diabetes Tipe II Induksi Streptozotocin-Nicotinamide. *Muhammadiyah Journal of Geriatric*, *2*(2), 69-74.
DOI: https://doi.org/10.24853/mujg.2.2.69-74

[26] Setiawan, S., Astar, I., & Oktarianty, S. (2022). Pelatihan Pembuatan dan Aplikasi Pestisida Nabati dari Ekstrak Daun Kersen (Muntingia calabura L.) pada Pembibitan Tanaman Hortikultura di Kota Pontianak. *Jurnal Abdi Masyarakat Indonesia*, *2*(1), 355-360.
DOI: https://doi.org/10.54082/jamsi.234

[27] Susanti, R. A., & Triastuti, U. Y. (2021). Inovasi Pembuatan Praline Isi Manisan Kering Belimbing Dengan Penambahan Bubuk Daun Kersen. *Garina*, *13*(2), 158-172.
http://www.garina.org/index.php/journal/article/download/41/33.

[28] Putri, S. M. (2017). *EVALUASI ANTIOKSIDAN BUBUK DAUN KERSEN (Muntingia calabura L.) DENGAN VARIASI SUHU PENGERINGAN DAN KONSENTRASI ETANOL* (Doctoral dissertation, Universitas Mecu Buana Yogyakarta).
http://eprints.mercubuana-yogya.ac.id/id/eprint/1368

[29] Alfilaili, B. S., Hajrin, W., & Juliantoni, Y. (2022). Optimasi Konsentrasi Vaselin Album dan Adeps Lanae pada Formulasi Sediaan Salep Ekstrak Etanol Daun Kersen (Muntingia calabura L.). *Acta Pharmaciae Indonesia: Acta Pharm Indo*, *9*(2), 119-127.
DOI: https://doi.org/10.20884/1.api.2021.9.2.408

[30] Nopita, D., Rahmi, S. L., & Ulyarti, U. (2022). *Pengaruh Suhu Pengeringan Dalam Pembuatan Simplisia Terhadap Sifat Fisikokimia Ekstrak Daun Pulai Dan Sifat organoleptik Seduhan Daun Pulai (Alstonia scholaris (L.) R. Br)* (Doctoral dissertation, Universitas Jambi).
https://repository.unja.ac.id/id/eprint/30694