

BIBLIOGRAPHY

- Abdullah & Asriati., (2016). Characteristics of Tempeh Drink with Vanilla Flavour. Warta IHP/Journal of Agro-based Industry Vol.33 (No.1) 07 2016: 1-8
- Ahnan-Winarno, A.D., Cordeiro, L., Winarno, F.G., Gibbons, J., Xiao, H., 2021. Tempeh: a semicentennial review on its health benefits, fermentation, safety, processing, sustainability, and affordability. Compr. Rev. Food Sci. Food Saf. 20, 1717–1767. <https://doi.org/10.1111/1541-4337.12710>.
- Aisyah. 2023. Pengaruh kondisi pengemasan dan lama penyimpanan pada suhu dingin terhadap mutu tempe mossacha. from <https://digilib.unila.ac.id/77349/3/SKRIPSI%20TANPA%20BAB%20PEM%20BAHASAN.pdf>
- Astawan, Made. 2009. Sehat dengan Hidangan Kacang dan Biji-bijian. Jakarta: Penebar Swadaya.
- Astawan M, Wresdiyati, T, Widowati S, Bintari SH, Ichsan N. 2013. Phsyco-chemical characteristics and functional properties of tempeh made from different soybeans varieties. Jurnal Pangan 22 (3): 241- 252. [Indonesian]
- Barnes, S., Prasain, J., D'Alessandro, T., Arabshahi, A., Botting, N., Lila, M.A., Jackson, G., Janle, E., Weaver, C.M., 2011. The metabolism and analysis of isoflavones and other dietary polyphenols in foods and biological systems. Food Funct. 2, 235–244. <https://doi.org/10.1039/c1fo10025d>.
- Belinda, A., 2015. Evaluation of bioactive compounds and functional properties of mung bean tempeh as an alternative tempeh, Bachelor Thesis, Swiss German University
- Bowerman, M.S., R.D., CSSD, CSOWM, FAND - Sr. Director, Worldwide Nutrition Education and Training. 2023. 4 sumber lemak sehat dan cara menambahkannya ke dalam pola makan anda. from <https://www.herbalife.com/id-id/wellness-resources/articles/healthy-fat-sources>
- Buckle et al. (2009): "Proses pemanasan dapat dilakukan untuk menginaktifkan anti trypsin, enzim lipogenase penyebab bau langus pada kacang-kacangan" <http://jgp.poltekkes-mataram.ac.id/index.php/home/article/download/81/58>
- Darajat, DP., WH Susanto, I. Purwantiningrum, (2014). Pengaruh Umur Fermentasi Tempe dan Proporsi Dekstrin terhadap Kualitas Susu Tempe Bubuk Jurnal Pangan dan Agroindustri Vol.2 No.1 p.47-53, Januari 2014
- Diniyah, N., & Lee, S. H. (2020). Komposisi senyawa fenol dan potensi antioksidan dari kacang-kacangan. Jurnal Agroteknologi, 14(01), 91-102.
- Efriwati A, Suwanto G, Rahayu, Nuraida L. 2013. Populations dinamic of yeast and lactic acid bacteria (lab) during tempeh production. Hayati J Biosci 20 (2): 57-64. DOI: 10.4308/hjb.20.2.57.
- Fidyasari.A et al. (2021). Optimizing the role of tempe makers in the development of kampung tempe potentials as the pioneer of food and climate sovereignty Engagement J Pengabdian Masyarakat

- Fitriyano and Rahim. 2019. Tinjauan Singkat Potensi Pemanfaatan Botol Bekas Berbahan Polyethylene Terephthalate (PET) di Indonesia. *Eksbergi*, 16(1), 18-24.
- Gavin Jessica, 2020. Boiling 101. from <https://www.jessicagavin.com/boiling/>.
- Ghani M, Kulkarni PKP, Song JT, Shannon JG, Lee JD. 2016. Soybean sprouts: A review of nutrient composition, health benefits and genetic variation. *Plant Breeding and Biotechnology* 4(4): 398-412.
- Jayanti ET. 2019. Seeds and tempeh protein content from non-soybean fabaceae. *Bioscientist: Jurnal Ilmiah Biologi* 7 (1): 79-86. DOI: 10.33394/bjib.v7i1.2454. [Indonesia]
- Kuligowski, M., Pawłowska, K., Jasinska-Kuligowska, I., Nowak, J., 2017. Isoflavone composition, polyphenols content and antioxidative activity of soybean seeds during tempeh fermentation. *CyTA - J. Food* 15, 27–33. <https://doi.org/10.1080/19476337.2016.1197316>
- K. Polanowska et al. 2020. Effect of tempe fermentation by three different strains of Rhizopus oligosporus on nutritional characteristics of faba beans LWT (2020)
- Kristiningrum E and Susanto D A (2015) Kemampuan Produsen Tempe Kedelai dalam Menerapkan SNI 3144:2009. *Jurnal Standardisasi*. Volume 16(2) : 99-108. Jakarta: Pusat Penelitian dan Pengembangan Standardisasi.
- Kustyawati ME. 2009. Study on the role of yeast in tempeh production. *Jurnal Agritech* 29 (2): 64-70. [Indonesian]
- Kustyawati, M.E., Subeki, Murhadi, Rizal, S., Astuti, P., 2020. Vitamin B12 production in soybean fermentation for tempeh. *AIMS Agric* 5, 262–271. <https://doi.org/10.3934/agrfood.2020.2.262>.
- Leonardo. (2024). Ketahui 9 fungsi lemak dan jenis-jenisnya untuk tubuh. from <https://ciputrahospital.com/fungsi-lemak/>
- Liguori, I., Russo, G., Curcio, F., Bulli, G., Aran, L., Della-Morte, D., Gargiulo, G., Testa, G., Cacciatore, F., Bonaduce, D., Abete, P., 2018. Oxidative stress, aging, and diseases. *Clin. Interv. Aging* 13, 757–772. <https://doi.org/10.2147/CIA.S158513>.
- Liu, D.Y., 2019. *Handbook of Foodborne Diseases*. CRC Press, Florida.
- NIH, (2014). Lactose Intolerance. NIH Publication No. 14–7994
- Ningtyas, Adinda Puteri (2019) Perubahan Karakteristik Fisik Dan Kimia Selama Proses Pembuatan Tempe Bungkil Kacang Tanah. Sarjana thesis, Universitas Brawijaya.
- Noni. (2019). How to make tempeh with peanuts. from <https://www.tempehtation.uk/how-to-make-tempeh-with-peanuts>
- Nurulpratiwi. (2021). Kacang tanah itu buah bukan umbi. from <https://agro.faperta.ugm.ac.id/2021/08/24/kacang-tanah-itu-buah-bukan-umbi/>
- Maicas Sergi, (2020). The role of yeasts in fermentation processes. Departament de Microbiologia i Ecologia, Facultat de Ciències Biològiques, Universitat de València,
46100 Burjassot, País Valencià, Spain.

- Mutia, U., C. Saleh dan Daniel. 2013. Uji Kadar Asam Laktat Pada Keju Kacang Tanah (*Arachis hypogaea* L.) Berdasarkan Variasi Waktu dan Konsentrasi Bakteri *Lactobacillus bulgaricus* dan *Streptococcus lactis*. Jurnal Kimia Mulawarman, 10(2):58-62.
- Mutiarasari Erna, (2019). Budidaya kacang tanah agar panen banyak. From <https://balingasal.kec padureso.kebumenkab.go.id/index.php/web/artikel/6/298>.
- Moscetti, R., Raponi, F., Monarca, D., Bedini, G., Ferri, S., & Massantini, R. (2019). Effects of hot-water and steam blanching of sliced potato on polyphenol oxidase activity. International Journal of Food Science and Technology, 54(2), 403–411.
- Petruzzello, M. (2016). Geocarpy from <https://www.britannica.com/plant/peanut#ref1237952>
- Polanowska, K., Grygier, A., Kuligowski, M., Rudzinska, M., Nowak, J., 2020. Effect of tempe fermentation by three different strains of *Rhizopus oligosporus* on nutritional characteristics of faba beans. LWT 122, 109024. <https://doi.org/10.1016/j.lwt.2020.109024>.
- Pratiwi and Anna. 2021. Benarkah botol plastik PET lebih ramah lingkungan. from <https://lifestyle.kompas.com/read/2021/02/19/180759520/benarkah-botol-plastik-pet-lebih-ramah-lingkungan>.
- Purwaningsih and Wanita Y P (2015). Kacang Tanah Sebagai Alternatif Pengganti Bahan Baku pada Usaha Mikro Kecil Menengah Tempe di Gunungkidul. Sleman: Balai Pengkajian Teknologi Pertanian, Yogyakarta.
- Radiati A, Sumarto. 2016. Analysis of physical properties, organoleptic properties, and nutritional values of tempeh from non-soybean legumes. Jurnal Aplikasi Teknologi
- Rahayu, W.P., Pambayun, R., Santoso, U., Nuraida, L., Ardiansyah, 2015. Tinjauan Ilmiah Proses Pengolahan Tempe Kedelai. Perhimpunan Ahli Teknologi Pangan Indonesia, Jakarta.
- Razie and Widawati. 2018. Kombinasi pengemasan vakum untuk memperpanjang umur simpan tempe. AGRITEPA, Vol. IV, No.2, Fakultas Pertanian, Universitas Dehasen Bengkulu.
- Riski. 2022. Daur ulang botol plastik, kurangi masalah sampah di iindonesia. from <https://www.mongabay.co.id/2022/08/28/daur-ulang-botol-plastik-kurangi-masalah-sampah-di-indonesia/>
- Rizal S, Kustyawati ME. 2019. Characteristics of sensory and beta-glucan content of soybean tempeh with addition of *Saccharomyces cerevisiae*. Jurnal Teknologi Pertanian 2 (20): 127-138. DOI: 10.21776/ub.jtp.2019.020.02.6. [Indonesian]
- Sembiring, M., Sipayung, R., & Sitepu, F. E. (2014). Pertumbuhan dan produksi kacang tanah dengan pemberian kompos tandan kosong kelapa sawit pada frekuensi pembumbunan yang berbeda. Jurnal Agroekoteknologi Universitas Sumatera Utara, 2(2), 98329.
- Solaeman EJ. Mengatasi diare di rumah: waspadai tanda bahaya. Farmacia Mar 2014;13(8):58.

- Triastuti, U. Yuyun (2016). Susu Kacang Hijau dengan Penambahan Sari Wortel Sebagai Minuman Alternatif Lansia. from <https://aksibukartini.files.wordpress.com/2016/08/susu-kacang-hijau-dengan-penambahan-sari-wortel-sebagai-minuman-alternatif-bagilansia.pdf>
- Widowati, S . 2005. Tempe dan Produk Turunannya: Pangan Fungsional Indigenous Indonesia. Dalam Prosiding Seminar Nasional Peningkatan Daya Saing Pangan Tradisional. Balai Besar Penelitian Dan Pengembangan Pascapanen Pertanian. Hal 220 228.
- Wigati et al. (2016). Pengaruh masa simpan susu sari tempe fermentasi sinbiotik terfortifikasi zat besi terhadap total bakteri enterobacter, sifat fisik dan sifat organoleptik. Universitas gadjah mada.
- Wulandari, dkk. (2022). Inilah Makanan yang Mengandung Mineral yang Penting Untuk Dikonsumsi. from [Tribratanews.polri.go.id](https://tribratanews.polri.go.id).
- Yang, W., Shi, W., Zhou, S., Qu, Y., & Wang, Z. (2019). Research on the changes of watersoluble flavor substances in grass carp during steaming. Journal of Food Biochemistry, 43(11).
- Yulian, (2021). Kaya nutrisi, kacang tanah sangat baik untuk kesehatan tubuh.
- Zhang, N. C., Gao, Y. Q., Tong, L. T., & Li, Z. G. (2018). Superheated steam processing improved the qualities of oats flour and noodles. Journal of Cereal Science, 83, 96–100.
- Zulchi, T. (2017). Keragaman Morfologi dan Kandungan Protein Kacang Tanah (*Arachis hypogaea L*) (Diversity of Morphology and Protein Content of Groundnut [*Arachis hypogaea L*]). Jurnal Gizi, 23(2), 91–100.

APPENDIX

1. Approved Recipe



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT

APPROVAL RECIPEE

Recipe Name : PEANUT TEMPEH MILK
TITLE OF C&D : PEANUT TEMPEH MILK AS AN ALTERNATIVE DRINK FOR LACTOSE INTOLERANCE

Yield : 1-2 Portion

Main Ingredients : 77 g peeled peanuts

Ingredients :

- | | |
|-----------------------|---------------------|
| - 77 g peeled peanuts | - 1 g salt |
| - 400 ml water | - 5 g tapioca flour |
| - 13 g sugar | - 5 g tempeh yeast |
| - 16 g fiber cream | |
| - 7 g pandan leaves | |

Method :

1. Wash the peanuts until the water is clear, and then soak them overnight in the basin.
2. After soaking, wash the peanuts again until the water is clear and, bring to a rapid boil. After that set the timer for 5 minutes and continue to boil until water turns frothy. Drain the peanuts and set aside.
3. Dry the peanuts thoroughly and let cool. Once cooled, add in the along with yeast tapioca flour.
4. Put all of the peanuts in a plastic bag to ferment for 1-2 days to become peanut tempeh.
5. Remove the tempeh from the bag. Steam the tempeh until cooked. Blend the tempeh with 400 ml of water until smooth.
6. Strain the puseed tempeh using a cheese cloth three times, discard the pulp and add the juice to the saucepot. Cook it over lowheat and then add fiber cream, pandan leaves, sugar, salt, and cook until thick
7. When done, store the tempeh milk in a container and wait for it to cool. Store in the chiller.



CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT

Product Description

Peanut tempeh milk product is a processed peanut tempeh product obtained by fermenting peanuts (*Phaseolus vulgaris*) using the fungus *Rhizopus sp.* This peanut tempeh milk is a product derived from peanut tempeh, obtained by fermenting peanuts using the fungus *Rhizopus sp.* Peanut tempeh has a high nutritional content, such as water level 32.00%, carbohydrates 16.1%, protein 11.52-11.75%, fat 0.33-0.46%, and fiber 0.90-1.05%. Peanut tempeh milk can be used as an alternative to beverages for lactose intolerance, as peanut tempeh does not contain lactose. Peanut tempeh has a delicious taste and can be processed into a variety of products. This product has a high economic value because it has high food safety and is produced from local raw materials, so it can dispel the issue of transgenic crops.

TRIAL PROGRESS (50 – 100 WORDS)

For the first trial, I experienced problems with fermenting peanut tempeh, my tempeh failed, the fermentation was uneven and several other fungi appeared, the color changed from white to brown, a very strong and sour smell appeared. At the second trial, I started to find out some of the problems with the first fermentation, so I fixed the problem and made the fermentation according to several journal references that I read and the final result was successful according to my wishes.

TRIAL DOCUMENTATION





CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT





CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT

Student Name : Yeni Souisa

NIM : 2274130010040

Advisor	1 st Examiner	2 nd Examiner
 Name: Michael Valent, A.Md. Par. Date: 27/03/2024	 Name: Elma Sulistiya, S.T.P., M.Sc Date: 28/03/2024	 Name: Jessica Hartan, A.Md. Par Date: 28/03/2024

2. Approved Sensory



Akademi Kuliner & Patiseri
OTTIMMO
 INTERNASIONAL
 CULINARY ARTS GASTRONOMY BAKING & PATISSERIE ARTS

CULINARY INNOVATION AND NEW PRODUCT DEVELOPMENT SENSORY TEST

DATE : 23 April 2024

NAME : Yeni Souisa

NIM : 2274130010040

PRODUCT : PEANUT TEMPEH JUICE AS AN ALTERNATIVE DRINK FOR LACTOSE INTOLERANCE

ADVISOR : Michael Valent, A.Md. Par.

PANELIST	SIGHT	SMELL	TEXTURE	TASTE	OVERALL	TOTAL
Panelist 1	5	5	5	5	5	25
Panelist 2	4	2	4	2	3	15
Panelist 3	4	5	5	4	4	22
Panelist 4	5	4	4	5	4	22
Panelist 5	4	4	4	4	4	20
Panelist 6	5	5	4	5	4	23
Panelist 7	5	4	4	4	4	21
Panelist 8	4	4	4	4	4	20
Panelist 9	4	4	4	4	4	20
Panelist 10	4	4	4	4	4	20
TOTAL	44	41	42	41	40	208

NOTES :

1. all good
2. Taste oke, tapi flavor langu masih ada
3. Nah ini oke, tekstur warna dan kekentalan oke. Mantap
4. Nice improvement. Bitter after taste nya sudah tidak terasa. Terasa creamy dan gurih
5. –
6. This batch is much better than the last one, job well done
7. Nice flavor, a bit like beans
8. Nice
9. ok. tp seperti susu kedelai biasa
10. Way better than before





Akademi Kuliner & Patiseri
OTTIMMO
 INTERNASIONAL
 CULINARY ARTS GASTRONOMY BAKING & PATISSERIE ARTS

**CONSULTATION FORM
CULINARY INNOVATION AND
NEW PRODUCT DEVELOPMENT**

Name : ... Yeni Souisa
 Student Number : ... 2274130010040
 Advisor : ... Michael Valente

3. Consultation Form

No	Date	Topic Consultation	Name/ Signature	Advisor Signature
1.	15/03	Nutrient calculation bahan, produk	3/3 Ema.	Mrs. Ema.
2	19/03 24	Product Consultation; Ingredients & Product	Jessica	Mrs. Ema.
3	19/03 24	Penentuan produk		Mrs. Ema.
4	17/03 24	Konsultasi jadual	3/3 Ema.	Mrs. Ema.
5.	20/03 24	Konsultasi proposal dan tata	3/3 Ema.	Mrs. Ema.
6.	20/03 24	Konsultasi proposal		Mrs. Ema.

No	Date	Topic Consultation	Name/ Signature	Advisor Signature
7	1/4 24	Nutrient calculation.	3/3 Ema.	Mrs. Ema.
8	02/07 2024	Revision Consultation	Jessica	Mrs. Ema.
9	03/07 2024	Chapter 4 Consultation; Nutrition & Cost	Jessica	Mrs. Ema.
10	05/07 2024	Chapter 5 Consultation; Conclusion & Suggestion	Jessica	Mrs. Ema.



Dipindai dengan CamScanner

4. Systematic Process Documentation

1) Ingredients of peanut tempeh milk



2) Making the peanut tempeh



3) Steam the peanut tempeh



4) Take the peanut tempeh juice



5) Boiling and cook until thick the peanut tempeh

