36. The effect of packaging type and storage temperature on the characteristics of cheese spread analogues from corn

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Preface

Preface

On behalf of Head of The Research and Society Service Institute of Jenderal Soedirman University, I would like to inform that we organize the second *International Conference Life and Applied Science for sustainable rural development 2019.* We have succesfully held the 1st *International Conference Life and Applied Science in 2018* with 100 participaant and publish in IOP EES.

This year, to improve the publication quality of the conferences, we arrange the 2st *International Conference Life and Applied Science.* The registered participants in this conference were about 59 titles for the international conference.

The given oral and poster presentation would show outputs for future need as indicated in the conference theme of "*Life and Applied Science*".

The purposes of the conference are:

- The first to provide a forum for scientific discussion, professional networking, research collaboration, education, and dissemination of scientific research, innovation and industrial products.
- The second to increase the quality of research and development in the *Life and Applied Science* approach for sustainable rural development.
- And the third to encourage the local and regional young scientists to attend and present their works at the international level.

The success of the Conference would not have been attained without strong supports from contributing scientists as well as both national and international conference Committee.

I would like to thank all of them for helping to make a very successful conference.

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The effect of packaging type and storage temperature on the characteristics of cheese spread analogues from corn extract

The effect of packaging type and storage temperature on the characteristics of cheese spread analogues from corn extract

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Abstract. Cheese spread analogues composed of corn milk have a limited shelf life due to their high water and fat content. Therefore, appropriate packaging and storage temperatures are required to maintain the nature of these products for long-term storage. The purpose of the present study was to 1) study the effect of packaging type and storage temperature on the chemical and sensory characteristics of corn milk-based cheese analogues; 2) determine the most effective packaging type for corn milk-based cheese analogues; 3) determine the optimal storage temperature to be applied for corn milk-based cheese analogue. The present study used a completely randomised split-plot design. The effects of various storage factors were assessed, including storage time (1, 2, 3 and 4 weeks) as the main plot, type of packaging (polypropylene, polyethylene terephthalate, and glass) as a subplot, and storage temperature (-5°C, 5°C, and 10°C) as a subplot. The studied cheese analogue variables included moisture, free fatty acid content, soluble protein content, fat content, pH and sensory characteristics. The results indicated that packaging type and storage temperature had a significant effect on analogue cheese during storage. The most effective packaging types applied for 4 weeks of analogue cheese storage were glass packaging with a moisture content of 69.60%, soluble protein of 6.91%, a fat content of 5.4%, free fatty acid content of 3.65% and pH of 4.6. The sensory characteristics included smooth texture, easy to spread, a bright, attractive and shiny appearance, pale yellow colour, and acidic smell. The optimum storage temperature for corn milk-based analogue cheese spread for 4 weeks was 5°C with a moisture content of 69.26%, dissolved protein content of 7.23%, fat content of 5.68%, free fatty acid content of 3.54% and pH 4.6. Sensory characteristics included smooth texture, easy to spread, a bright, attractive and shiny appearance, pale yellow colour, and slightly acidic smell smelling only slightly of cheese.

Keywords: cheese analogues, corn, glass packaging

1. Introduction

Cheese spread analogues can consist of milk or non-milk protein while substituting oil or milk fat for milk solids [1]. One ingredient that can be used to make cheese spread analogue is corn milk [2]. As

per cheese in general, cheese spread analogues have a high water content; thus, they can easily become damaged [3].

Packaging strongly influences changes in product quality during storage. Some types of packaging materials can be used to package corn milk-based cheese spread analogues, include polypropylene (PP), polyethylene terephthalate (PET), and glass. PP packaging is strong, transparent but not clear, has a light mass, waxy surface and is resistant to chemicals, heat and oil [4]. PET packaging has a light mass, is clear, transparent, strong, solvent resistant and impermeable to gas and water; however, it softens at 80°C [5]. Glass packaging has the advantages of not reacting with packaged materials, being resistant to acids, bases and the environment, being made transparent or dark, being odourless; however, glass has a heavy mass and is easily broken [6].

Storage temperature also affects the deterioration of product quality and must be stably maintained to prevent the loss of quality during storage [7]. The temperature that can be used to store cheese spread analogue is low, as low temperatures are intended to slow down the speed of metabolic reactions and inhibit chemical reactions as well as enzymatic or microbial growth.

The present study aims to 1) determine the most effective type of packaging for corn milk-based cheese spread analogue and to 2) determine the optimum storage temperature for corn milk-based cheese spread analogue.

2. Materials and methods

The main ingredients used in the present study included sweet corn sourced from Wage Market, Purwokerto, Central Java, Indonesia; whey protein isolate (Global Milk Specialties), Arabic gum, Tween 20, virgin coconut oil (Mutia, Yogyakarta) and other ingredients. The main equipment used included a blender, filter, PET plastic packaging, PP plastic packaging, glass packaging, a refrigerator, a freezer, and a set of analysers.

Cheese spread production was performed using a modified [2] method. Corn was steam blanched for 30 minutes and then ground with the addition of water (1: 2). Corn extract plus 15% whey protein isolate was then heated to 70°C for 15 seconds. The corn extract was then added by 7.5% VCO and 0.5% Tween 20, then stirred and allowed to stand for 5 minutes. The next step involved pressing for 15 minutes. The solids obtained were then combined with 6% sugar and 1% salt. The obtained cheese was then heated to 40°C for 15 seconds. The resulting analogue cheese was then packaged using polypropylene, polyethylene terephthalate and glass packaging and stored at -5, 5 and 10°C. Furthermore, an analysis of water content, fat content, free fatty acid (FFA) content, dissolved protein content, pH and organoleptic tests were performed every week for 4 weeks.

The study used a split-plot design involving a completely randomised design (CRD). The assessed factors included 1) storage time as the main plot (1 week, 2 weeks, 3 weeks and 4 weeks); 2) types of packaging as subplots (PP packaging, PET packaging, glass packaging); and 3) storage temperature as subplots (-5°C, 5°C, and 10°C). Data were analysed using the analysis of variance (ANOVA) test; if a significant effect was observed, Duncan's Multiple Test (DMRT) at a 5% confidence level was performed. The organoleptic test results were analysed using the Friedman test; if this test had a significant effect, it was followed by a multiple comparison test with a significant level of 5%.

3. Results and discussion

3.1. Moisture content

The moisture content of cheese spread analogues increased over storage time, with the lowest moisture content being observed a storage time of 1 week (68.29%) and the highest at 4 weeks (69.48%). This increase in water content can be predicted using the equation $y = 0.397x + 67.905$ with $R^2 = 0.999$ (Fig. 1). According to the United States Department of Agriculture (2001), the water content of soft cheese is no more than 80%. When viewed from the prediction equation, the water content of cheese spread analogue can be stored for up to 30 weeks, with water content reaching 79%.

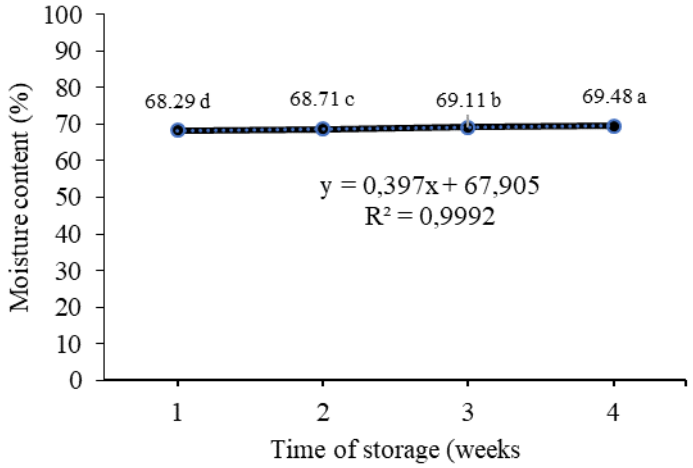

Figure 1. The moisture content of cheese spread analogue during storage

The increased moisture content of cheese spread analogues during storage is likely due to the product absorbing water from the environment. High humidity in storage rooms can cause the process of water vapour absorption from the air to the product, resulting in increased water content [8]. The increased water content during storage is in accordance with [9], who stated that the moisture content of cheese spread analogues tends to increase during storage. In food products, increased water content can cause damage and affect shelf life [4].

3.2. Dissolved protein content

Packaging type, temperature and storage time significantly influence the level of dissolved protein. The dissolved protein content of cheese spread analogues in glass packaging (7.5%) was higher when compared to cheese spread analogues in PP (7.39%) and PET (7.26%) packaging (Fig. 2). This is due to PP and PET packaging having higher permeability, thus absorbing more air from the storage environment when compared to glass packaging. According to [10], glass packaging is impermeable, whereas polypropylene and polyethylene packaging have water vapour permeabilities of 6.8 g/m^2/24 hours and 1.3 g/m^2/24 hours, respectively. Air contact with cheese spread analogues triggers fat oxidation, causing the fat contained therein to become damaged. This causes cheese spread analogues to become acidic, thereby resulting in protein denaturation [11]. Acid or base reagents can break the intermolecular hydrogen bonds that cause protein coagulation [9]. If the protein is in long-term contact with acids or bases, it is very likely that the peptide bonds will be hydrolysed, which results in the primary protein structure to become completely damaged. Protein damage causes proteins to lose certain properties (e.g. solubility).

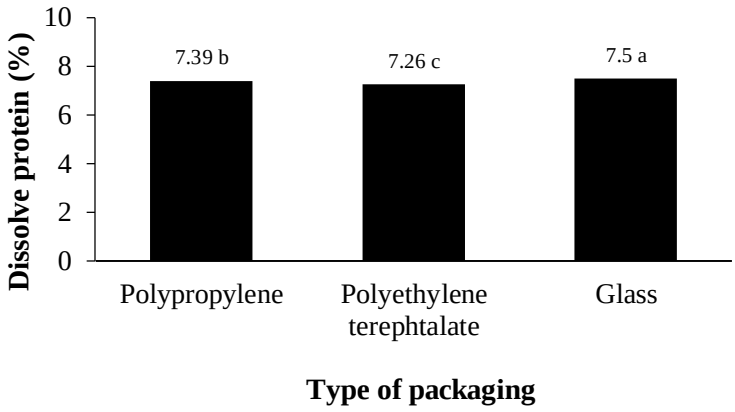

Figure 2. The dissolved protein content of cheese spread analogue stored in three types of packaging

The highest dissolved protein content was observed at a storage temperature of 5°C (7.73%), while the lowest value was observed at 10°C (7.17%) (Fig. 2). This result is due to the higher temperature of more rapid fat hydrolysis and the production of more free fatty acids; therefore, the protein contained in cheese spread analogue will be denatured due to the acidic environment. This is consistent with [9], who stated that the higher the storage temperature, the greater the number of molecules with greater kinetic energy, thus making the particles involved in the reaction move faster. The movement of particles involved in this reaction causes damage to fat and turns into free fatty acids so that the product becomes acidic and causes denatured proteins.

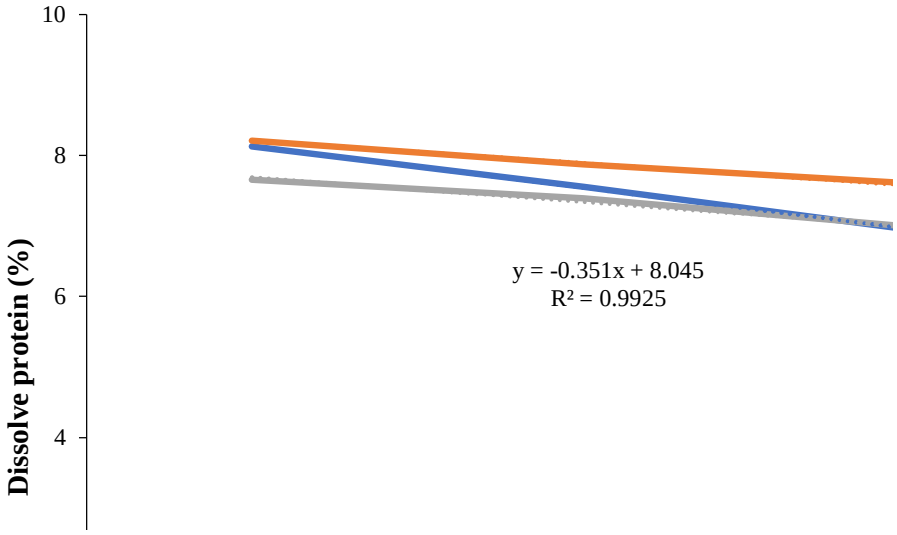

Figure. 3. The dissolved protein content of cheese spread analogues during storage at different temperatures

Cheese spread analogues exhibited decreased levels of dissolved protein during the storage process at all temperatures. This is because protein decomposition and hydrolysis occur during storage, resulting in the levels of dissolved protein decreasing over time. A decrease in the highest levels of dissolved protein (found at -5°C) can be observed from the sharp linear regression graph (Fig. 3). This is presumably because ice crystals will form at a temperature of -5°C, which can damage the protein membrane and cause protein solubility to decrease. According to [12], the freezing process causes damage to the function and structure of the membrane, which is caused by the formation of

intracellular ice crystals that can damage protein cells. A decrease in the lowest dissolved protein content occurred at 5°C, where it still had a dissolved protein content of 7.23% at 4 weeks of storage time. This is in accordance with [13], who noted that soft cheeses should be stored at 5-10°C to inhibit and prevent cheese damage from microbial contamination, fat hydrolysis and protein denaturation, which can reduce cheese quality and make cheese storage low.

3.3. Fat content

Storage temperature, storage time and packaging type significantly affected the fat content of cheese spread analogue. The fat content of cheese spread analogue decreased with increasing storage temperature, following a linear regression with the equation y = -0.02x + 6.33 (Fig. 4). Thus, higher temperatures increase the potential for fat hydrolysis. With higher storage temperature, the number of molecules having greater kinetic energy makes the particles involved in the reaction move faster. The movement of particles involved in this reaction causes damage to fat and turns it into free fatty acids, resulting in decreased fat content [14].

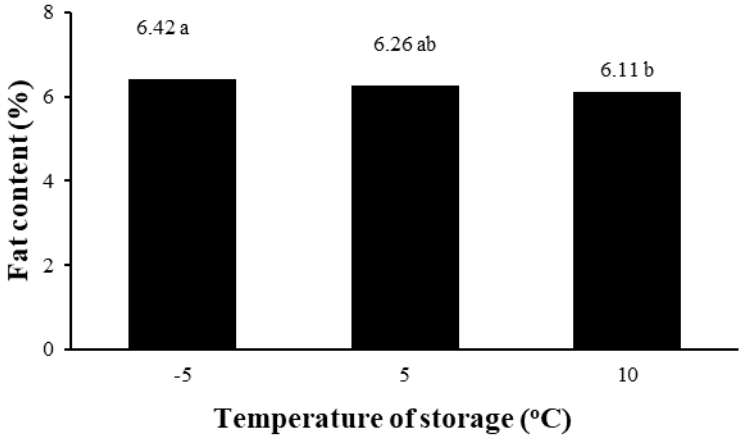

Figure 4. The fat content of cheese spread analogue at different storage temperatures

In all types of packaging, the fat content of cheese spread analogue decreased during the storage process. This is because, during the storage, the fat in cheese spread analogue undergoes hydrolysis, which causes the triglyceride molecular bonds to break and turn into free fatty acids. Moreover, the rupture of triglyceride molecular bonds causes the fat content to decrease and free fatty acid level to rise.

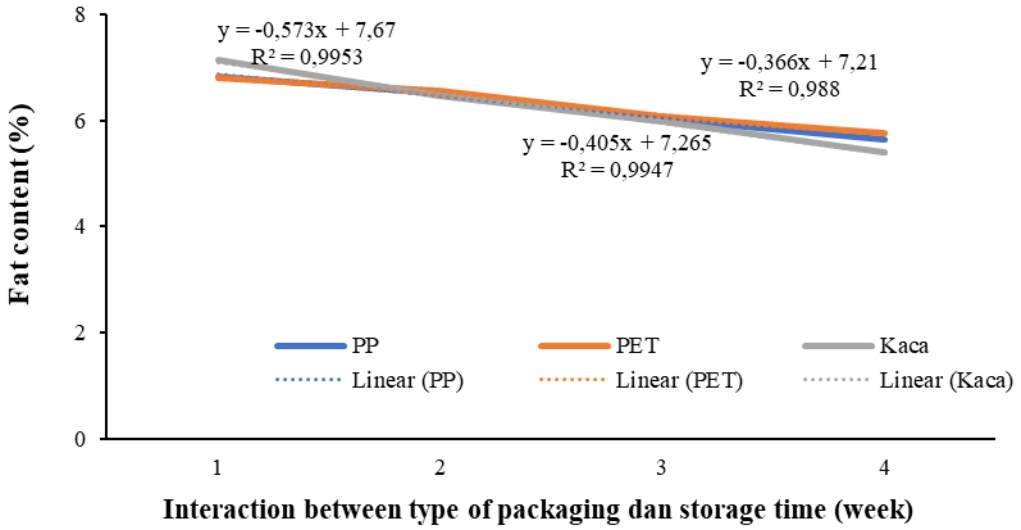

Figure 5. The fat content of cheese spread analogue during storage on several types of packaging

Cheese spread analogue packaged in glass has the highest reduction in fat content compared to other packaging types, which is evident from its linear regression equation (Fig. 5). This is likely because glass packaging is impermeable to air, with trapped air triggering more rapid fat hydrolysis. This results in the fat content of cheese spread analogue packaged in glass being lower than the same product stored in other types of packaging. This is in accordance with [15], who noted that probiotic products packaged in glass bottles have the highest increase in water content compared to other packages since this packaging is airtight and translucent. The air contained in a glass bottle will increase the water content of the product due to light transmitted from outside the packaging. This increased water content will accelerate the reaction of fat hydrolysis. The fat content of cheese spread analogue stored for 4 weeks is lower when compared to the fat content of cheese in general, where 100 grams of cheese contains 20.3% fat [16].

3.4. Free fatty acid content

The highest FFA levels were observed in cheese spread analogue packaged in PET (3.43%), while the lowest was observed in spread cheese analogue packaged in glass (3.39%) (Fig. 6). This is because glass packaging has the ability to prevent the transmission of water vapour to the product better than the other two packaging materials. According to [17], glass packaging has a water vapour transmission rate of <0.01 g/m^2/day, which is lower than that of PP (<10 g/m^2/day) and PET (100 g/m^2/day) packaging. Water vapour absorbed into food products can cause fat hydrolysis, causing fat to break down into free fatty acids.

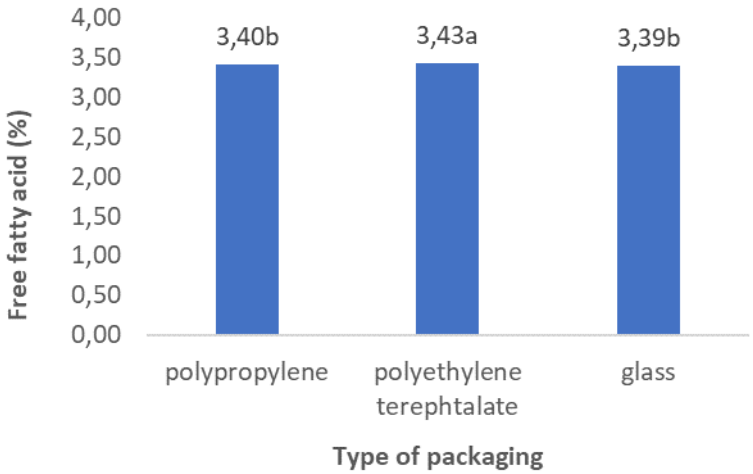

Figure 6. The free fatty acids of cheese analogue using different packaging types

Notably, cheese spread analogue stored at 10°C had higher FFA levels compared to the same product stored at -5 and 5°C. This is because the higher the storage temperature, the faster the chemical reaction occurs, which results in more rapid hydrolysis reactions. This is in accordance with [9], who noted that the higher the storage temperature, the greater the number of molecules having greater kinetic energy, thus making the particles involved in the reaction move faster. Higher temperatures also cause chemical damage reactions in food products to occur faster, while hydrolysis reactions can be accelerated with high temperatures as a catalyst [18].

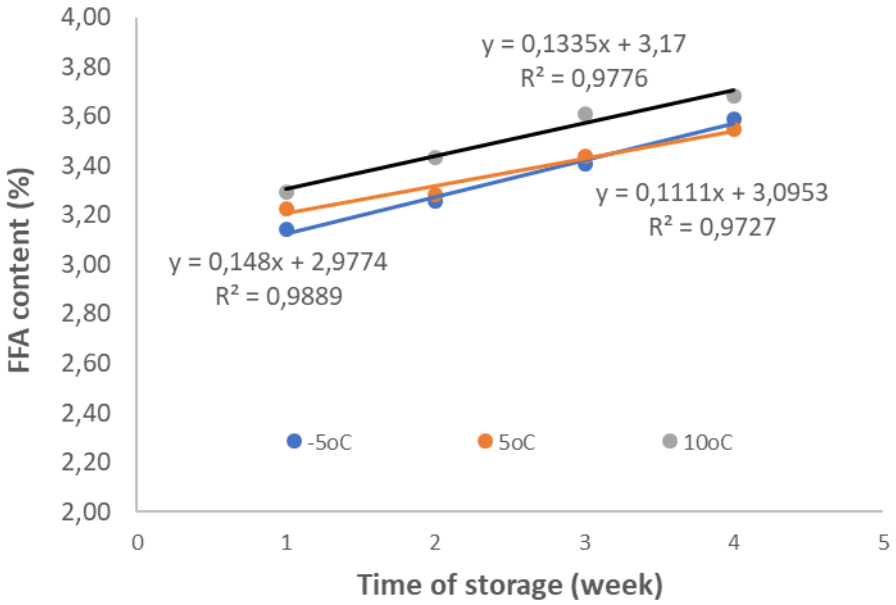

Figure 7. The free fatty acids of cheese analogue during storage at different temperatures

A previous study has noted that the maximum limit of free fatty acids in gruyere cheese products is 4.38% [19]. Based on these standards and the predictions using linear regression in Fig. 7, cheese spread analogue stored at -5, 5 and 10°C can be maintained for 8, 10 and 8 weeks, respectively.

3.5. Organoleptic characteristics

The texture, appearance, colour and flavour of cheese spread analogue decreased during storage. Cheese analogue packed in PP and stored at 10°C (K1S3) exhibited the lowest texture value (4.2) at the end of storage (slightly smooth, lumps present, rather easy to spread). Cheese analogue packed in PET and stored at 5°C (K2S2) exhibited the highest texture value (5.6) at the end of storage (smooth, slightly lumpy, easily spread).

Changes in cheese spread analogue texture during storage are due to protein denaturation, which is marked by the appearance of lumps. This result is consistent with [20], who noted that denaturation can change protein properties. Changes due to denaturation are due to decreased enzyme or hormone activity, salt or acid solubility, crystal formation ability and clot formation stability.

The appearance of cheese analogue also decreases during the storage period. Cheese analogue in PP packaging stored at 10°C (K1S3) had the poorest appearance value (4.3) at the end of storage (slightly mouldy, less attractive, slightly shiny). Cheese analogue stored in glass packaging at 5°C (K3S2) had the best appearance value (5.4) at the end of storage (nearly mouldy, quite attractive, rather shiny).

The growth of fungi during storage is caused by the water content held by corn milk-based cheese analogue, which is relatively high and increases during storage [21]. Notably, high water content can support the growth of microorganism, while water activity in food affects the resistance of food to microbial attack.

The colour of cheese analogue decreased during the storage period. Cheese analogue stored in PP at 10°C (K1S3) had a lower colour value (4.5) compared to other treatments at the end of storage (yellow slightly speckled with green, less attractive, slightly dull). Meanwhile, cheese analogue in glass packaging stored at 5°C (K3S2) had a higher colour value (5.6) compared to other treatments at the end of storage (nearly mouldy, quite attractive, rather shiny).

The aroma of analogue cheese decreased during storage. Analogue cheese stored at 10°C in PET (K2S3) had a lower aroma value (3.9) than other treatments at the end of storage (very acidic, rancid). However, cheese analogue packaged in glass and stored at -5°C (K3S1) and 5°C (K3S2) had the same aroma value (5.4) at the end of storage, which is higher compared to other treatments (slightly acidic, slight cheese aroma).

The most effective packaging type for cheese analogue is glass packaging. At the end of a 4-week storage period, cheese analogue stored in glass exhibited better chemical and organoleptic characteristics when compared to other types of packaging, namely 69.60% moisture content, 6.91% dissolved protein content, 5.4% fat content and an FFA level of 3.65%. The organoleptic characteristics included a fine texture with small lumps, easy to spread, nearly appearing mouldy, bright, attractive, rather shiny, pale yellow colour, and has an acidic odour that is slightly rancid and does not smell like the distinctive aroma of cheese.

The optimum storage temperature for spread cheese analogue is 5°C, which has better chemical and organoleptic characteristics after a 4-week storage period compared to other storage temperatures (69.26% moisture content, 7.23% dissolved protein content, 5.68% fat content and 3.54% FFA level). Its organoleptic properties include a fine texture with small lumps, easy to spread, appearing almost non-mouldy, attractive and rather shiny pale-yellow colour, somewhat bright, and slightly acidic aroma with only a slight cheese aroma.

Analogue cheese remains suitable for consumption after up to 4 weeks of storage, with a water content of 68.71%, dissolved protein content of 7.62%, fat content of 6.50%, FFA content of 3.32% and pH of 4.8. Moreover, its texture is smooth, slightly lumpy and easily spread, with an appearance of being nearly mouldy, attractive and rather shiny, pale yellow, and bright with a slightly acidic aroma and only a slight cheese aroma.

4. Conclusion

Glass is the most effective type of packaging for the storage of corn milk-based cheese spread analogue, which has better chemical and organoleptic characteristics after a 4-week storage period

compared to other types of packaging. The optimum storage temperature for corn milk-based cheese spread analogue is 5°C, which has better chemical and organoleptic characteristics which after a 4-week storage period when compared to other storage temperatures.

Acknowledgement
This research was supported by Jenderal Soedirman University through *Riset Unggulan Terapan* [267/UN23.14/PN/2019].

References

[1] Badem A and Ucar G 2016 *J. Food Dairy Technol.* **4** 44–48
[2] Aini N, Prihananto V, Sustriawan B, Romadhon D and Ramadhan R N 2019 *Int. J. Food Sci.* **2019** 1–8
[3] Aini N, Sustriawan B, Prihananto V and Heryanti T 2019 *IOP Conf. Ser. Earth Environ. Sci.* **255** 012016
[4] Aini N, Prihananto V, Sustriawan B, Astuti Y and Maulina MR 2018 *IOP Conf. Ser.Earth Environ. Sci.* **102** 012049.
[5] Colín-Chávez C, Soto-Valdez H and Peralta E 2014 *Food Packag. Shelf Life* **1** 170–8
[6] Aini N, Prihananto V, Wijonarko G, Astuti Y, Maulina M R, and Muthmainah M 2017 *Adv. Sci. Lett.* **23** 5796–5798
[7] Kowalik J, Lobacz A, Zulewska J and Dec B 2018 *Int. J. of Food Sci. and Tech.* **53** 1541-8
[8] Guinee T P, Feeney E P and Fox P F 2001 *Lait* **81** 475–85
[9] Bubelová Z, Tremlová B, Buňková L, Pospiech M, Vítová E and Buňka F 2015 *J. Food Sci. Technol.* **52** 4985–93
[10] Alves R M V, Van Dender A G F, Jaime S B M, Moreno I and Pereira BC 2007 *Int. Dairy J.,.* **17** 365–73
[11] Oliveira R B A 2016 *Trends in Food Sci. and Tech.* **57** 11–9
[12] Moser P, Telis V R N, de Andrade Neves N, García-Romero E, Gómez-Alonso S and Hermosín-Gutiérrez I 2017 *Food Chem.* **214** 308–18
[13] Ah J and Tagalpallewar G P 2017 *Journal of Food Science and Technology* **54** 3766–78
[14] Akhondzadeh A, Misaghi A and Khaschabi D 2007 *LWT - Food Sci. and Tech.* **40** 973–81
[15] da Cruz A G, Faria J de A and Van-Dender A G F 2007 *Food Res. Int.* **40** 951-56
[16] Dharaiya C N, Jana A H and Aparnathi K D 2019 *J. Food Sci. Technol.* **2019** 1-10
[17] Dixon J 2011 *Packaging materials: 9. Multilayer packaging for food and beverage*. Brussels: ILSI Europe,
[18] Ormanci H B and Colakoglu F A 2017 *J. Food Process. Preserv.* **41** 1–10
[19] Georgala A K, Kaminarides S E and Anifantakis E M 2006 *Aust. J. Dairy Technol.* **61** 26–31
[20] Schenkel P, Samudrala R and Hinrichs J 2013 *Int. J. Dairy Technol.* **66** 220–30
[21] Giri S K, Tripathi M K and Kotwaliwale N 2018 *Journal of Food Science and Technology*. **55** 1667-74.

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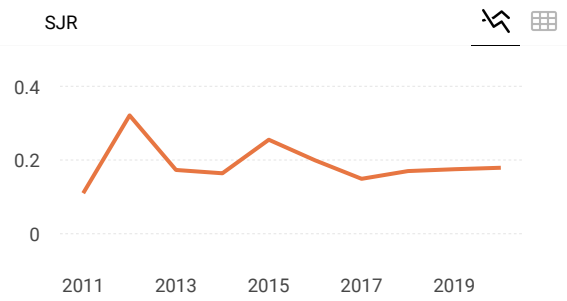

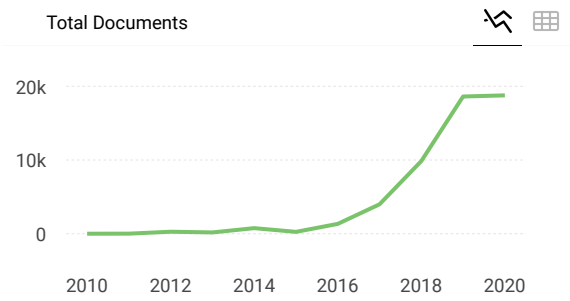

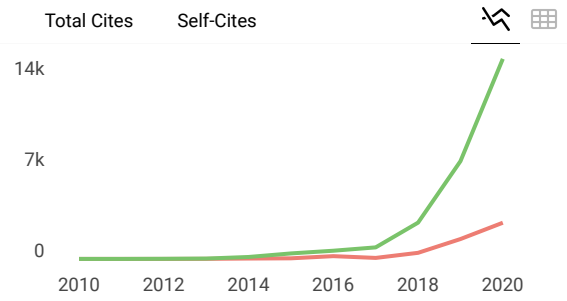

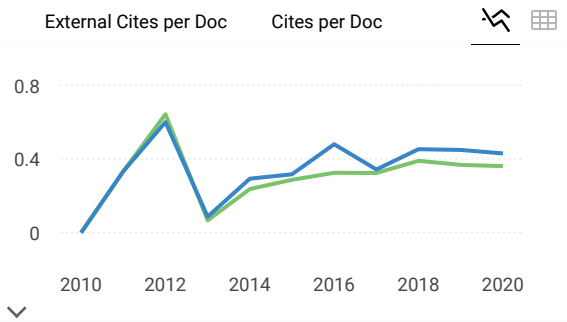

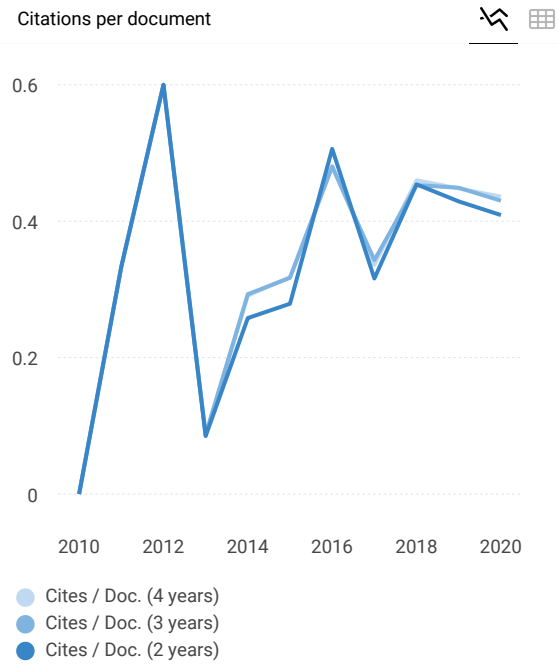

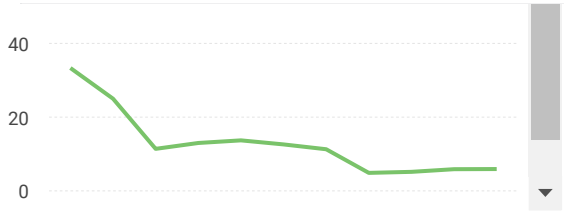

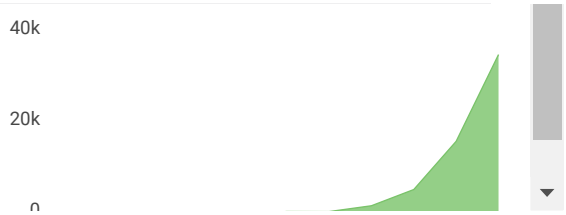

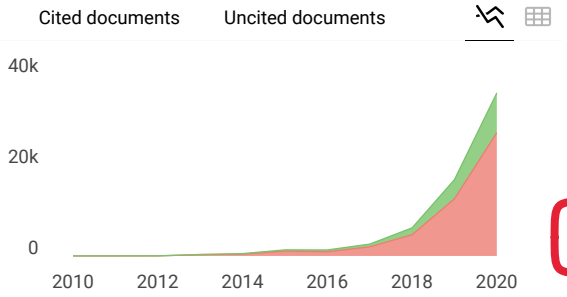

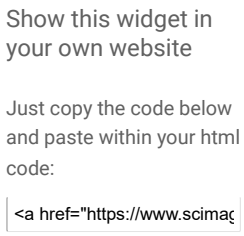

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Website: lppm.unsoed.ac.id dan email : lppm_unsoed@yahoo.co.id

Purwokerto, November 11, 2019

LETTER OF ACCEPTANCE

Dear.
Nur Aini
Universitas Jenderal Soedirman

Herewith, the international committee is happy to inform you that the peer-reviewed draft paper entitled **The Effect of Packaging Type and Storage Temperature on the Characteristics of Cheese Spread Analogues from Corn Extract** has been accepted for oral presentation as well as inclusion in the conference proceeding of the 2nd International Conference on Multidisciplinary Approaches for Sustainable Rural Development (ICMA-SURE), to be held in Java Heritage Hotel, Purwokerto, Central Java, Indonesia during November 19-20, 2019.

We are looking forward to seeing you in Purwokerto.

ICMA-SURE Chair

Dr.Eng. Muhtar Effendi

Certificate

2ND INTERNATIONAL CONFERENCE

on Multidisciplinary Approaches
for Sustainable Rural Development

Purwokerto-Indonesia
November 19-20, 2019

ICMA SURE 2019
International Conference

This certificate is awarded to

NUR AINI

in recognition of his/her contribution as a

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Rector of Universitas Jenderal Soedirman

Prof. Dr. Rifda Naufalin, S.P., M.Si
Head of LPPM Unsoed

Dr. Eng. Mukhtar Effendi, S.Si., M.Eng
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[ICMA2019] Submission Acknowledgement

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ICMA-SURE Committee <notifikasi@unsoed.ac.id>
to me

Dr Nur Aini:

Thank you for your submission, "Effect of packaging type and storage temperature on chemical and sensory properties of cheese analogues based on corn milk" to 2nd International Conference on Multidisciplinary Approaches for Sustainable Rural Development (ICMA-SURE). With the online conference management system that we are using, you will be able to track its progress through the editorial process by logging in to the conference web site:

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If you have any questions, please contact me. Thank you for considering this conference as a venue for your work.

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[ICMA2019] Editorial Decision on Abstract

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Norman A Prayogo <notifikasi@unsoed.ac.id>
to me

Dr Nur Aini:

Congratulations, your abstract Effect of packaging type and storage temperature on chemical and sensory properties of cheese analogues based on corn milk has been accepted for presentation at 2nd International Conference on Multidisciplinary Approaches for Sustainable Rural Development (ICMA-SURE) which is being held 2019-11-19 at Purwokerto. You may now submit your paper for further review.

Thank you and looking forward to your participation in this event.
Norman A Prayogo
norman_s2biologi@yahoo.com

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Norman A Prayogo <notifikasi@unsoed.ac.id>
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Dr Nur Aini:

Congratulations, your abstract Effect of Soaking in Sodium Citrate on Parboiling Process on the Character of Black Rice of Sirampog variety has

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[ICMA2019] Submission Upload Acknowledgement

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ICMA-SURE Committee <notifikasi@unsoed.ac.id>
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Dr Nur Aini:

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Dear ICMA SURE participant,

pelase submit your full paper before october 20, 2019 for iop proceeding publish this year.

Thank you very much.

Dr. Norman Arie Prayogo, M.Si
Conference manager

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Dear Authors,

The scientific committee has completed its review of your paper submitted for 2nd International C review report, the scientific merits and the relevance.

We are pleased to inform you that your paper as follow has now been accepted by the Scientific 1755-1307). Furthermore, the information of the papers publication fees and payment methods

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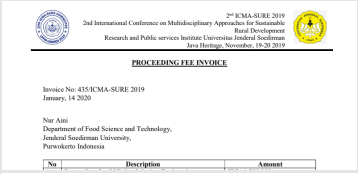

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SCHEDULE

07.30 – 08.30	: Registration Parallel Session 1
08.30 – 08.50	: Opening Ceremony
08.50 – 08.55	: Sing National Anthem of Indonesia "Indonesia Raya"
08.55 – 09.25	: Welcoming Speech 1. Head of LPPM Universitas Jenderal Soedirman 2. Rector of Universitas Jenderal Soedirman 3. Token Appreciation to Invited Speakers by Rector of Universitas Jenderal Soedirman
09.25 – 09.30	: Photo Session
09.30 – 11.00	: Plenary Session 1 Prof. Irwandi Jaswir Assoc. Prof. Dr. Anuchita Moongngram Prof. Ir. Loekas Susanto, Ph.D
11.00 – 12.00	: Parallel Session 2
12.15 – 13.00	: Lunch and Prayer Break
13.00 – 14.30	: Plenary Session 2 Prof. Lyn Parker Prof. Raihani, Ph.D Prof. Nguyen The Hung Prof. Wiwiek Rabiatul Adawiyah, M.Sc., Ph.D
14.30 – 15.00	: Coffee Break
15.00 – 17.00	: Parallel Session 3
17.00 – 17.30	: Closing Ceremony - Best Poster Award - Best Paper Award - Farewell Speech from Chair of ICMA-SURE 2019

Parallel Session 1

Time: 07.30-08.30 room: 1 – 11

Room 1 Moderator: Dr. Hariyadi

Code	Authors	Tittle
A.1.1	Diyah Woro Dwi Lestari, Arfi Nurul Hidayah	Burnout Among Academic Staff In Faculty Of Medicine Universitas Jenderal Soedirman
A.1.2	Sri Lestari, Laeli Budiarti, Aldila Kresnaresanti	Developing Student Entrepreneurship Program Model
A.1.3	Siti Arifah Purnamasari, Masyhuri Masyhuri, Jangkung Handoyo Mulyo, Jamhari Jamhari	Does Regional Liberalization Affect Indonesian Food Security? An Error Correction Model Approach
A.1.4	Raditya Bagas Wicaksono, Miko Ferine, Diyah Woro Dwi Lestari, Arfi Nurul Hidayah, Wahyu Djatmiko	Ethical Issues Observed By Students In Clinical Rotation
A.1.5	Bekti Istiyanto	Evaluation Of Community Participation In Restoring Post Merapi Volcano In Muntilan, Magelang

Room 2 Moderator: Dr. Sofa Marwah

A.2.1	Wisnu Widjanarko, Yusida Lusiana	Communication Strategy Of Local Culinary In The Global Era
A.2.2	Dona Primasari, Eliada Herwiyanti, Rini Widianingsih	Factors Affecting The Utilization Of Accounting Information Systems In Smes' By The Theoritical Approach Of User Acceptance Testing
A.2.3	Wuryatmo A Sidik, Sunardi Sunardi, Supriyanto Supriyanto	Improving The Quality Management System Of Laboratories Of Fmipa Unsoed
A.2.4	Wita Ramadhanti	Pkm Penerapan Ipteks: Tax Accounting Mentoring For Ex-Migrant Workers' Smes In Banyumas
A.2.5	Vera Wijayanti Sutjipto, Maulina Larasati Putri, K. Y.S. Putri	Relationship Political Communication Strategy Legislative Candidates Women With An Attitude Voters At Indonesian President Election In 2019

Room 3 Moderator: Dr. Asna Mustofa

A.3.1	Bambang Sumanto	Agrotourism And Eco Tourism Operated By Local Community : Land Conservation And Financial Aspects

A.3.2	Kharisun Kharisun	Applicatioan Of Natural Silica From Zeolite And Charcoal Sugarcane Bagasse (Scb) To Improve The Growth And Yield Of Upland Rice Plant On Drought Stress Inceptisol
A.3.3	Arief Sudarmaji, Saparso Saparso, Hadi Supriyo, Anteng Widodo, Budi Gunawan	Application Of Automatic Irrigation Based On Soil Moisture For Shallot Cultivation On Coastal Area Of Northern Java
A.3.4	Agung Widodo, Nur Aini, Hidayah Dwiyanti	Effect Of Soaking In Sodium Citrate On Parboiling Process On The Character Of Black Rice Of Sirampog Variety
A.3.5	Choirun Nissa	Effect Of Sugar On Nutrient Composition And Shelf Life Of Red Guava Jams

Room 4 Moderator: Jamrud Aminuddin, Ph.D

A.4.1	Muhammad Ashif, Idsap Peramiarti, Afifah Afifah	Antibacterial Activity Of Kecombrang Fruit Simplicia Ekstract (Nicolaia Speciosa) Against Gram Positive Bacteria Staphylococcus Aureus Fncc 0047 In Vitro
A.4.2	Khairunnisa Nisrina Effendi, Rifda Naufalin, Nurahmahdiani Fauziah, Poppy Arsil, Erminawati Wuryatmo	Antimicrobial Activity Of Leaves And Stems Of Kecombrang (Etlingera Elatior) With Difference In Temperature And Drying Time
A.4.3	Siti Nuryanti, Nurul Latifasari, Rifda Naufalin, Erminawati Wuryatmo	Antioxidant Activity And Total Phenol Extract Of Flower, Stem And Leaf Leaves With Different Types Of Solutions
A.4.4	Tarsinih - Tarsinih, Rifda - Naufalin, Nuning - Astuti, Friska Citra Agustia, Nurul Latifasari, Erminawati Wuryatmo, Dwi Nugroho Wibowo	Antioxidant Activity For Tea Formulation Of Kecombrang Flower (Etlingera Elatior)
A.4.5	Choirun Nissa	Antioxidant Activity, Flavonoid, Tannin And Organoleptic Properties Of Red Getas Guava Leaves Tea

Room 5 Moderator: Dr. Condro Wibowo

A.5.1	Kharisun Kharisun	Characteristic Of Zeolite And Sugarne Bagasse (Scb) Silicon And Their Effect On Chemical Properties Of Entisol Soils At Various Levels Of Stress Salinity.

A.5.2	Condro Wibowo	The Effect Of Plasticizer On Characteristic Of Biodegradable Film Produced From Tapioca, Bread Fruit Starch And Potato Starch
A.5.3	Endang Yuniastuti, Janitra Rendrahadi Hantoro, Nandariyah Nandariyah, Marshelina Noor Indah Delfianti	Identification And Characterization Of Morphological Persimmon (Diospyros Kaki L.)
A.5.4	Nurul Latifasari, Siti Nuryanti, Rifda Naufalin, Erminawati Wuryatmo	Isolation And Identification Of Kecombrang Esential Oil Using Chromatography-Mass Spectrometry Gas (Gc-Ms)
A.5.5	Muhammad Akbar Suseno	Kinetics Of Anthocyanin Damage And Antioxidant Activities Of Purple Yam Yogurt During Storage

Room 6 Moderator: Dr. Afik Hardanto

A.6.1	dibya dib bya	Effects Of Supplementation Of Cellulase, Carnitine And Fish Oil On Lipids And Fatty Acid Contents Of Indonesian Native Chicken Meats
A.6.2	agatha Sih piranti, Diana Retna USR, Erwin Riyanto Ardli	Fish Conservation Status In Eastern Part Of Segara Anakan Cilacap Indonesia
A.6.3	Ibrahim Aldaw Ibrahim, Rifda Naufalin, Erminawati Erminawati, Hidayah Dwiyanti	Optimization Fermentation Of Cow And Goat Milk With Lactic Acid Bacteria Strains
A.6.4	Mamika Ujianita Romdhini, Hibban Kholik, Marliadi Susanto, Surya Hadi	The Needleman-Wunsch Algorithm In Determining The Similarity Level Of Timor Deer (Cervus Timorensis) And Red Deer (Cervus Elaphus) DNA Sequences
A.6.5	Ahmad Pramono	Evaluation Of Protected Soybean Groats And Earthworm Meal (Lumbricus Rubellus) As Feed Supplement On Total Gas Production In Vitro

Room 7 Moderator: Dr. Sri Maryani

A.7.1	Arief Kelik Nugroho	Composite Image With A Geographic Information System Approach
A.7.2	Sugiarto Sugiarto	Design Of Sunda Straits Automatic Water Level Station Network
A.7.3	Hendri Irwandi, Syamsu Rosid, Terry Mart	Identification Of The Effect Of El Niño On Lake Toba's Water Level Variation
A.7.4	Sri Maryani, Bambang Hendriya Guswanto, Idha Sihwaningrum	On The R-Sectoriality For Compressible Fluid Flows Of The Oldroyd-B Model With Surface Tension In Half-Space

A.7.5	Irfan Cahya Sokacana	Optimum Frequency Identification Of Geomagnetic Anomalous Signal Related To Earthquake Precursor In North Of Sumatra

Room 8 Moderator: Dr. Tedi Sudrajat

A.8.1	Saryono - Hanadi, Alef Musyahadah Rahmah, Nayla - Alawiya, Antonius Sidik Maryanto	Integrative Legal Development Model Based On Social Inclusion In The Framework Of Village Government Law In Banyumas Regency
A.8.2	Tri Lisiani Prihatinah	Legal Review Of The Agreement On Legal Marriage In Indonesia
A.8.3	Ade Maman Suherman	Model For Legal Construction For International Contract Development In Non-Governmental International Organization (Oinp) In The Perspective Of International Private Law
A.8.4	Riris Ardhanariswari, Muhammad Fauzan	The Protection For Women's Rights And Children Through Judicial Review In Constitution Court
A.8.5	Rani Hendriana, Dessi Perdani Yuris Puspita Sari, Anang Riyan Ramadianto	The Role Of The National Counterterrorism Agency (Bnpt) In Handling Terrorism Victims In Indonesia

Room 9 Moderator: Dr. dr. Lantip Rujito

A.9.1	Dody Novrial, Nadya Hasna Rasyida, Siti Mardiyah	Histopathological Profile Of Gastric Cancer In Banyumas Regency Central Java Indonesia
A.9.2	Dwi Sutiningsih	Hypoglycemic Activity Of The Steeping Of Black Glutinous Rice (Oryza Sativa Linn. Forma Glutinosa) On Diabetic Mice Model Induced With Alloxan
A.9.3	Arif Setyo Upoyo, Atyanti Isworo, Akhyarul Anam, Annas Sumeru, Agis Taufik, Yunita Sari	Knowledge Of Stroke Risk Factors, Perception And Source Of Information On Stroke Among Hypertension Patients In Indonesia
A.9.4	Izka Sofiyya Wahyurin	Macronutrient, Fiber Intake, Physical Activity, And Nutritional Status In Adolescent Girls
A.9.5	Hendra Angga Yuwono, Sastra Kusuma Wijaya, Prawito Prajitno	Majority Voting Based Ensemble Methods For Classification Of Ischemic Strokes Based On Eeg Signals

Room 10 Moderator: Dr. Dwi Sarwani Sri Rejeki

A.10.1	Dwi Sarwani Rejeki	Malaria And Environmental Factors In A Cross-Border Region (A Study In Central Java And Yogyakarta Provinces
A.10.2	Nia Kurnia Sholihat; Icmi Ahitarani; Nur Laili Zuhriyyah	Patients' Willingness To Pay For Pharmacist-Provided Diabetes Management Service In Indonesia
A.10.3	Anton Budhi Dhharmawan	Prevalence And Clinical Feature Of Acute Otitis Media In Urban Primary School Children In Banyumas Regency
A.10.4	Eva Rahayu, Rahmi Setiyani, Made Sumarwati, Lita Heni Kusumawardani	Social Support Is Positively Correlated With Health Promoting Lifestyle Behavior Of Students Of Nursing Department Of Universitas Jenderal Soedirman
A.10.5	Vitasari Indriani	The Differences Of Insulin Receptor And Insulin Resistance In Individuals Obese And Non Obese With And Without A Family History Of Type 2 Diabetes

Room 11 Moderator: Hari Siswantoro, M.T

A.11.1	Edy Fachrial	Inulinase Activity Of Thermophilic Bacteria Isolated From Hot Springs Of Penen Village, North Sumatera, Indonesia
A.11.2	Mia Kosmiatin -, Chaireni Martasari -, Frizky Amelia Kurniawati, Rinanda Gandhi Ningrum, Prita Sari Dewi	Analysis Of Stomata, Chloroplast, And Chromosome Of Local Mandarin Citrus (Citrus Reticulata) Plants Grown From Endosperm Culture
A.11.3	Slamet - Supriyadi	Biodiesel Characteristics Of Kemiri Sunan (Reutalis Trisperma (Blanco) Airy Shaw) Oil By Using One-Stage Transesterification Process
A.11.4	Pungky Ferina, Widyatmani Sih Dewi	Earthworm Response To Drought Of Agricultural Paddy Soil
A.11.5	Mia Kosmiatin -, Chaireni Martasari -, Rinanda Gandhi Ningrum, Frizky Amelia Kurniawati, Prita Sari Dewi	Genetic Similarity Of Local Mandarin Accessions (Citrus Reticulata) Resulted From Endosperm Culture According To Issr And Microsatelite Markers

Parallel Session 2

Time: 11.00 – 12.00 Room: 1-7

Room 1 Moderator: Dr. S. Bekti Istiyanto

B.1.1	Soni Martin Anwar	Analysis Of Community Based Tourism (Cbt) Strategy In The Development Of Ketenger Banyumas Tourism Village As An Effort To Implement Asean Tourism Strategic Plan
B.1.2	Agung Praptapa, Yusriyati Nur Farida, Aldila Krisnaresanti, Lina Rifda Naufalin	Analysis Of Division Of Work Patterns In Edumart "Kosuku" Jenderal Soedirman University
B.1.3	Yusida Lusiana, Wisnu Widjanarko	Banyumas Culinary Festival Identity, Commodification Dan Life Style
B.1.4	Maulina Larasati Putri, Vera Wijayanti Sutjipto, Marisa Puspita Sary, K Y.S. Putri	Factors Transformation Communication Betawi's Value Cultural On Economic Empowerment Through Umkm
B.1.5	Abdul Aziz Ahmad, Sofiatul Khotimah, Bambang Bambang	Karangsalam Village Towards Halal Rural Tourism: Evaluation And Prospects

Room 2 Moderator: Dr. Tedi Sudrajat

B.2.1	Ulil Afwa, Nurani Ajeng Tri Utami	Model Of Capital Participation And Development Of Economic Institution As An Efforts To Develop Independence Based On Village Potential In Banyumas District
B.2.2	Alef Musyahadah Rahmah, Nayla - Alawiya	Women's Representative Rights At Bpd In Village Government (Study In Banyumas Regency)
B.2.3	Rahadi Wasi Bintoro, Tedi Sudrajat	Choice Of Forum In Sharia Economic Dispute Resolution Forum After Constitutional Court Decision Number 93 / PUU-X / 2012
B.2.4	Lita Heni Kusumawardani, Ade Sutrimo, Rianita Sulasih Mutifasari	Evidence And Feasibility Of Recent Community-Based Strategies On Stunting Management In Indonesia: A Systematic Review
B.2.5	isplancius ismail, tri lisiani prihatinah, nur wahid	Indonesian Government Efforts To Fulfil Human Right Of Former East Timor Fighters

Room 3 Moderator: Dr. Maria Dyah Nur Meinita

B.3.1	Suprayogi Suprayogi, Purwanto Purwanto, Jinan Salsabila	Growth Response And Yield Of Saline Tolerant Rice Varieties To Bio-Fertilizer Application At Coastal Saline Paddy Field
B.3.2	Prita Sari Dewi, Ida Widiyawati, Ponendi Hidayat, Fatichin Fatichin	Micropropagation of Jeruk Keprok (Citrus nobilis cv. "Jember") Supplemented with BA and Determination of Genetic staibility of Plantlets Using RAPD and PCR-RFLP
B.3.3	Sakhidin Sakhidin, Anung Slamet Dwi Purwantono, Slamet Rohadi Suparto	Off-Season Production of Citrus, Problems and Prospects
B.3.4	Farah Fatimah, Rifda Naufalin, Rumpoko Wicaksono, Natalia C Larasati	Optimization Of Temperature And Time Of Extraction In Kecombrang Stem And Leaves (Etlingera Elatior) Based On The Quality Of Bioactive Component Products
B.3.5	Poppy Arsil, Kusmantoro Eddy Sularso	Perspectives on the development of local food policy using the analytical hierarchy process

Room 4 Moderator: Dr. Karseno

B.4.1	Dwiana Intan Pertiwi, Rifda Naufalin, Taslimatul Auliya, Poppy Arsil, Erminawati Wuryatmo, Rumpoko Wicaksono	Quality Of Simplician Bioactive Components And Optimization Of Temperature And Time Liquid Extract Of Kecombrang (Etlingera Elatior) Powders
B.4.2	Prita Sari Dewi, GH Sumartono, Etik Wukirtini, Bea Kahfi, Benyamin Yosafat Manurung	Responses of Shoot Tips and Young Leaves of Melon (Cucumis melo) to BAP and NAA
B.4.3	Krissandi Wijaya, Purwoko Hari Kuncoro, Ardiansyah Ardiansyah, Poppy Arsil, Hildha Aryani	Spatial distribution of soil water content in potato horizontal-ridge profile under various ridge-dimensions
B.4.4	Karseno Karseno, Tri Yanto	The Application of Several Sap Preservatives on Quality Characteristic of Block Coconut Sugar Produced in Kalisalak Village, Kebasen Subdistric, Banyumas
B.4.5	Hery Winarsi, Ibnu Zaki, Friska Citra Agustia, Gumintang Ratna Ramadhan, Widya AK Putri, Afina R Sulistyaning, Farida Soeparman, Hesti P Sari	YOGURT RICH IN SOLUBLE PROTEIN MUNG BEANS (Vigna radiata L.) MILK HAS THE POTENTIAL TO IMPROVE DIGESTIBILITY

Room 5 Moderator: Dr. Yunita Sari

B.5.1	Dhiana Kusumawati	Kinetics of Anthocyanin Degradation and Purple Yam (Dioscorea spp.) Color Changes in Soft Drinks During the Storage Process
B.5.2	Pungky Ferina, Widyatmani Sih Dewi	Mapping Cadmium (Cd) in Paddy field atau sragen Regency to support health and sustainable agriculture
B.5.3	Thianti Sylviningrum, Ismiralda Oke Putranti, Octavia Permata Sari, Fitranto Arjadi	Methotrexate Treatment Response In Psoriasis Patients With Comorbid Diseases
B.5.4	sapto nugroho hadi	Molecular Identification Based on 16S rRNA sequence of the Ultisol Land Indigenus Bacteria from Banyumas Regency, Central Java Indonesia
B.5.5	Budhi Santoso Reksohadiwinoto	Novelties of laccase enzyme from bacteria sago wastes

Room 6 Moderator: Dr. Uyi Sulaiman

B.6.1	Delilla - Suhanda, Yuniarti - MS, Yudi Nurul Ihsan, Mega Laksmini Syamsudin	Nutrient Concentration And Population Of Makrozoobenthos In Ciletuh Bay, Sukabumi District, West Jawa
B.6.2	Mochammad Nazarudin Budiono, Kharisun Kharisun, Peter van Straaten	Phosphate Rocks Solubilization and Ammonium Ions Release Pattern as Affected by Cationic Exchange of NH4+- and H+-charged Zeolites: Potential Slow-Release NP Fertilizer
B.6.3	Ratna Stia Dewi, Mardiyah Kurniasih, Uki Dwiputranto	Phytotoxicity in Foxtail millet seed polluted batik wastewater and its reduction by Arbuscular Mycorrhizal Fungi
B.6.4	Taufik Taufikurahman	Phytotoxicity of Chromium-containing Wastewater on Germination, Growth and Seed Production of Oryza sativa L.
B.6.5	Mohammad Syamsu Rosid, Emir Ghufron	Splitting Curve Analysis of Synthetic MT Data to Identify Permeable Zone at Geothermal Field “X”

Room 7 Moderator: Dr. Bambang Hendriya Guswanto

B.7.1	Budi Pratikno	The Decision Theory in Gaussian Case
B.7.2	Gito Sugiyanto, Jajang Jajang, Mina Yumei Santi	Analysis of infrastructure deficiency at black spot area

B.7.3	Eva Wahyu Indriyati, Probo Hardini, Ika Lutviani	Increasing Mining Truck Volume and Its Effect to the Design Life of Panican – Linggamas road, Purbalingga Regency
B.7.4	Sirojuddin Sirojuddin, Lukman Kusuma Wardhana, Ahmad Kholil	Investigation of The Draft Tube Variations Against The First Stage and The Second Stage Flow of Banki Turbine
B.7.5	Agus Maryoto, Nor Intang Setyo Hermanto	MECHANICAL BEHAVIOR OF COMPOSITE COLUMN BAMBOO LAMINATION WITH SANDWICH SYSTEM TOWARDS AXIAL CRITICAL LOAD

Parallel Session 3

Time:15.00-16.30 Room: 1-7

Room 1 Moderator: Dr. Sofa Marwah

C.1.1	Rilus Ardi Kinseng, Charity Naysa Nasution, Widya Hasian Situmeang, Sarwititi Sarwoprasodjo, Dwi Retno Hapsari	Reclamation And Fisher Social Movement In Bali: Reasons, Tactics, And Achievements
C.1.2	Budi Dharmawan, Anisur Rosyad, Teguh Djuharyanto, Tatang Widjojoko, Ulfah Nurdiani	Study of Orange Plantation Initiatives on State-owned Enterprise in Indonesia
C.1.3	Dwinita Arwidiyarti, Khaerudin -, Basuki Wibawa	The Role of Online Discussion Forums in the Group Investigation Learning Model
C.1.4	Probo Hardini, Eva Wahyu Indriyati, Dean Anggita Laraswati	Traffic Performance and Management Analysis of Panican-Linggamas Road
C.1.5	Ahmad Mubarak	Understanding the intentions of farmers' entrepreneurship by mediating the motivation of entrepreneurial farmers in the border region of Sebatik Island: SEM approach
C.1.6	Rahadi Wasi Bintoro, Antonius Sidik Maryono, Sanyoto Sanyoto, Nabila Dezty Anggraeni	Protection of Adopted Children From Legal Uncertainties in Court Competencies
C.1.7	Johanna Rimbing	Speech Behavior in Era of Digital Technology : A Pragmatics Analysis on Teenagers Speech Acts

Room 2 Moderator: Dr. S. Bekti Istiyanto

C.2.1	Ditya Rosmayda, Edy Prihantoro	The influence of Instagram Account @explorebandung and Local Wisdom Value Towards the Interest in Visiting Bandung City
C.2.2	Diyah Woro Dwi Lestari, Miko Ferine, Raditya Bagas Wicaksono, Arfi Nurul Hidayah, Wahyu Djatmiko	We were helpless, then could we make changes in the future?
C.2.3	Alkadri Kusalendra Siharis, Khairul Ikhwan	Youtube As Media For Micro Celebrity To Get Attention From Talent Agencies
C.2.4	Florencius Eko Dwi Haryono	

C.2.5	Marisa Puspita Sary, Elisabeth Nugrahaeni P, K. Y.S. Putri	The Effect of Virtual Study Room Rumah Inspirasi's Blog on Knowledge of Social Media Users

Room 3 Moderator: Dr. Uyi Sulaiman

C.3.1	Purwanto Purwanto, Eriec fahmi Faza, Imastini Dinuriyah	The Effect Of Glyphosate On Weed In No-Tillage Mungbean Cultivation
C.3.2	Fajar Wahyu Pribadi, Catharina Widiartini	The Effect Of Kelor Leaves (Moringa oleifera) Ethanol Extract On Serum Uric Acid And Tumor Necrosis Factor-α Of Hyperuricemic White Rats (Rattus norvegicus)
C.3.3	Nur Aini, Budi Sustriawan, Juni Sumarmono, Tanty Purwaning Atmajayanti, Vincentius Prihananto	Effect of packaging type and storage temperature on chemical and sensory properties of cheese analogues based on corn milk
C.3.4	Septiadi - Nugroho, Khavid - Faozi, Kartini - Kartini	The Growth Of Tip Grafting By Application Of Natural Growth Regulating Agent And The Number Of Of Entres Leaves
C.3.5	Santi Dwi Astuti	The physicochemical properties of flour based on indigenous Indonesian tubers produced by autoclaving-cooling cycling treatment
C.3.6	Santi Dwi Astuti	The Potency of Exocarp of Carica Fruit (Carica pubescens, L) as a Meat Tenderizer
C.3.7	Rifda Naufalin, Erminawati Wuryatmo, Dwi Nugroho Wibowo, Farah Hana Fadhilah	Application Of Edible Coating Based On Kecombrang (Etlingera Elatior) On Beef Quality

Room 4 Moderator: Jamrud Aminuddin, Ph.D

C.4.1	Susanto B. Sulistyo	Color-Based Analysis For Non-Destructive Quality Evaluation Of Siamese Orange (Citrus nobilis) During Storage In Room And Cold Temperature
C.4.2	Ike Sitoresmi Mulyo Purbowati, Ali Maksum	The antioxidant activity of Roselle phenolic compounds in different variations microwave-assisted extraction time and power
C.4.3	Annisa Fitrianingrum	The Influence Of Tartaric Acid Solvent And Storage Temperature On Antosianin, Antioxidant, Total Phenol And Color Stability In Steamed Purple Yam (Dioscorea spp.) and Flour
C.4.4	Daniel Joko Wahyono	The prevalence and antibiotic sensitivity pattern of Streptococcus pneumoniae which colonizes nasopharynx in primary school (6-12 years) children age with Otitis Media Acute in Banyumas Regency
C.4.5	Herman Sumawan	Comparison Of Trophoblast Cell Bcl 2 (B-Cell Lymphoma 2) Expression In Early And Late Onset Preeclampsia
C.4.6	Dyah Umiyarni Purnamasari, Kusnandar Kusnandar, Panuwun Joko Nurcahyo	Effects of Nutritional Status, Vitamin A Consumption and Television Viewing Habits with Visual Acuity in School Children
C.4.7	Saryono Saryono, Siti Hajar	Free radicals and antioxidants: preventive orientation of hypertension nursing care in the future

Room 5 Moderator: Dr. dr. Lantip Rujito

C.5.1	Lantip Rujito, Dinar Faiza, Fitranto Arjadi, Qodri Santosa, Ariadne Tri Hapsari, Diyah Woro Dwi Lestari	Geographical and Environmental Status of Patients with Thalassemia in South Region of Central Java, Indonesia
C.5.2	Friska Citra Agustia, Yovita Puri Subardjo, Gumintang Ratna Ramadhan, Dika Betaditya	Glycemic Index and Satiety Level of Flakes Made from Mocaf Subtitued with Rice and Bean Flour as Alternative Snacks for People with Type 2 Diabetes Mellitus
C.5.3	Sidik Awaludin	The Effect of Light Massage on Peripheral Blood Circulation in Tuberculosis Patients in Sokaraja Banyumas
C.5.4	Mohammad Syamsu Rosid, Amanda Claudiya Aprilia	Tilt Angle Analysis of Gravity Data for Determining Geothermal Heat Source in Mt. Lawu Field
C.5.5	Diana Retna Utarini Suci Rahayu, Sutrisno Anggoro, Tri Retnaningsih Soeprobowati	Wadaslintang Reservoir water quality assessment based on microbiological parameter indicators for drinking water criteria
C.5.6	gema citra dwijayanti	The Association Between Of Infantile Anorexia With Childrens Sleep Pattern And Cognitive Development Of Children At South Region Of Central Java
C.5.7	agatha piranti	Water Quality Of Wadaslintang Reservoir Based On Diversity Of Plankton

Room 6 Moderator: R. Farzand Abdullatif, Ph.D

C.6.1	Chudakus Habsya	Application of organic foams in lighweight concrete: fisical, mechanical and thermal conductivity properties
C.6.2	Undri Restuti; Hartiwi Diatuti; Widhiatmoko Herry Purnomo; Sutarmin	Automatic Packaging Machine as a solution for increase the capacity of instant Mendoan flour production
C.6.3	Windi Atmaka, Bara Yudhistira, Miracle Pulung Slamet	Effect of Starch Variations on Physical and Chemical Characteristics and Antioxidant Activity of Black Grass Jelly (Mesona Palustris BL)
C.6.4	Endang Srimurni K, Husein Sastranegara, Hanan Hassan Alsheikh Mahmoud	Prevelance and Intensity of Ectoparasites in Neocaridina denticulate and N. Palmata from Purbalingga Fish Market Aquarium

C.6.5	Hari Prasetijo, Ari Fadli	Increased Reliability Over Current Relay (OCR) As a Safety Transformer With Non-Cascade Coordination Patterns
C.6.6	Yuniarti MS, Yudi Nurul Ihsan, Mega Laksmi Syamsudin, Syawaludin Alisyahbana Harahap, Delila Suhanda	Relationship of Sedimentation Rate to the Structure of Makrozoobenthos Community on Transitional Season in Ciletuh Bay, Sukabumi, West Java, Indonesia

Room 7 Moderator: Dr. Agus Maryoto

C.7.2	Mekar Dwi Anggraeni, Amin Fatoni, Rahmi Setiyani, Nina Setiawati	Method Validation of Smartphone Based Software for Anemia Prediction
C.7.3	afik hardanto	Sap flux measurement technique by thermal dissipation method: Possibility for nocturnal flow measurement
C.7.4	Agus Maryoto	Shringkage of high strength concrete containing calcium stearate with binder Portland Composite Cement
C.7.5	dyah ethika nuhdyati	LOCAL COFFE AGRIBUSINESS IN WESTERN MOUNT SLAMET BANYUMAS REGENCY
C.7.6	Prita Sari Dewi, Ida Widiyawati, Ponendi Hidayat, Fatichin Fatichin	Micropropagation of Jeruk Keprok (Citrus nobilis cv. “Jember”) Supplemented with BA and Determination of Genetic staibility of Plantlets Using RAPD and PCR-RFLP
C.7.7	Eva Vaulina Yulistia Delsy	QUANTITATIVE STRUCTURE-PROPERTY RELATIONSHIP ANALYSIS AGAINST CRITICAL MICELLE CONCENTRATION OF SULFONATE-BASED SURFACTANT

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- To ensure all conference activities are done according to the schedule, presenters have a fair share of time (8 minutes) to present their papers. A Q&A session (15 minutes) will be given after all presenters in each parallel session have given their talks.
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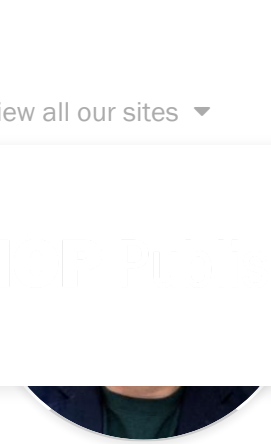

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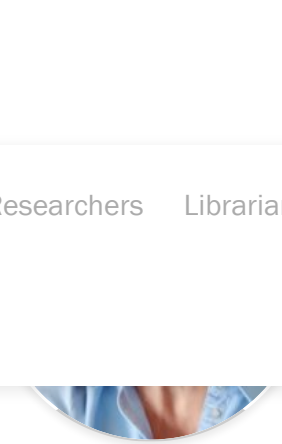

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