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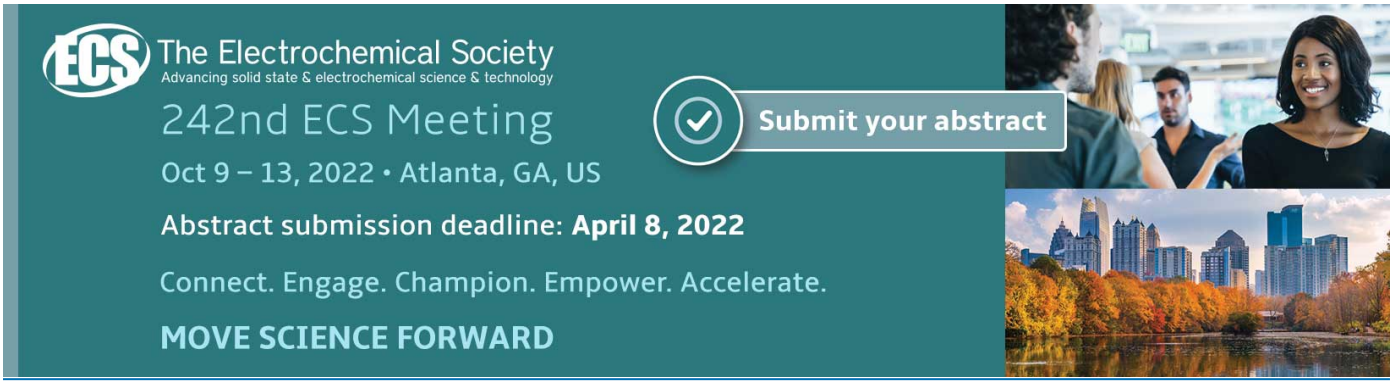

PREFACE

On behalf of the Organizing Committee, I would like to express my sincere gratitude for your contributions and participations in the International Conference on Sustainable Agriculture for Rural Development 2018 (ICSARD 2018) which was held in Purwokerto, Indonesia, 23-24 October 2018.

Agriculture is a vital sector since it provides foods and raw materials related to food for human life. Agriculture gives employment opportunities to a very large proportion of communities. It also has a great significance in global trade as well as foreign exchange resources, which in turn might improve a country's GNP value. Agriculture is at a crossroad. It has to find ways to feed the world while being environmentally, socially and economically sustainable. The International Conference on Sustainable Agriculture for Rural Development 2018 (ICSARD 2018), therefore, was aimed to promote scientific and educational activities towards the advancement of knowledge by improving the theory and practice of various disciplines and areas of sustainable agriculture. This conference addressed the food system activities of processing, distributing and consuming food, as well as food production from crop and livestock; the availability, access, utilization and stability dimensions of agriculture; and the synergies and trade-offs between economic, environmental, health and social objectives and outcomes. The conference became an excellent opportunity for academic researchers, industry professionals, government delegates and students to interact and share their experiences and knowledge on cutting-edge developments in the fields of Agro-technology, Soil Science, Agronomy, Horticulture, Plant Protection, Plant Breeding and Biotechnology, Agroecology, Food Science and Technology, Agricultural and Biosystems Engineering, as well as Socio-economics of Agriculture and Agribusiness.

ICSARD 2018 was organized by the Faculty of Agriculture, Jenderal Soedirman University, Indonesia. The conference was joined by eight keynote speakers who are leading experts from reputable organizations, i.e. Prof. Dr. Robert Edwin Paull (University of Hawai'i at Manoa), Prof. Dr. Shao Hui Zheng (Saga University, Japan), Dr. Tuyen Chan Kha (Nong Lam University, Vietnam), Prof. Dr. Rindit Pambayun (Sriwijaya University, Indonesia), Prof. Lilik Soetiarso, Ph.D (Gadjah Mada University, Indonesia), Prof. Dr. Ahmad Yunus (Sebelas Maret University, Indonesia), Prof. Loekas Soesanto, Ph.D (Jenderal Soedirman University, Indonesia), and Prof. Totok Agung DH, Ph.D (Jenderal Soedirman University, Indonesia). Participants of this conference came from Sudan, Ecuador, Japan, Malaysia, Thailand, and Indonesia.

As the general chair of this conference, I realize that the success of the conference depends ultimately on the many people who have worked with us in planning and organizing both the technical program and supporting social arrangements. In particular, we thank the Program Chairs for their wise advice and brilliant suggestion on organizing the technical program and also the Scientific Committee for their thorough and timely reviewing of the papers. Recognition should go to the Organizing Committee members who have all worked extremely hard for the details of important aspects of the conference programs and social activities. We would also like to thank our special honorary guests and plenary speakers for their dedication to this event.

I hope that this publication can bring beneficial contributions to the development of knowledge particularly in the field of sustainable agriculture.

Susanto Budi Sulistyo, Ph.D.
Jenderal Soedirman University, Purwokerto, Indonesia
General Chair of ICSARD 2018 Conference Committee
February 2019, Purwokerto, Indonesia

Committee of ICSARD 2018

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The percentage of haploid embryos resulting from the crossing of two white-seeded genotypes with three dark-seeded genotypes of maize

Sutoyo, B Satria and R Arselfi

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E D Purbajanti, W Slamet, E Fuskhah and Rosyida

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A Sodiq, P Yuwono, J Sumarmono, Y N Wakhidati, M Rayhan, A H Sidhi and A Maulianto

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The application of different *Bacillus subtilis* contained formula as bio fungicide tablet to control *Ganoderma boninense* in oil palm nurseries

F Puspita, Hadiwiyono, S H Poromorto and D I Roslim
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K Faozi, P Yudono, D Indradewa and A Ma'as

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N Kuswardhani and N F Yulian

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The reasons for farmers not to adopt System of Rice Intensification (SRI) as a sustainable agricultural practice: an explorative study
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N Kuswardhani, F N Sari and Y Wibowo
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N Kuswardhani, M Misbahudin and B H Purnomo
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A Nur, S B Santoso, K Syahruddin, R Efendy and E G Lestari

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B Dharmawan, A R Karim and U Nurdiani

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H Palacios, D Villamarín, J Velásquez and W Vásquez

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Comparison of methodologies for determination total humidity in two types of Andean corn (*Zea mays* L.)

H Palacios, M Tamayo, H Terán, J Velásquez and W Vásquez

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W Roessali, E D Purbajanti and T Dalmiyatun

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A Sudarmaji, S Sahirman, Saparso and Y Ramadhani

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A Rosyad, R Satriani and T Y Astuti

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Marketing channel efficiency of Robusta coffee in Argopuro mountain area, Jember Regency

N Kuswardhani, Ratnawati, I B Suryaningrat and J Sumarno

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The meat chemical quality of lamb's longissimus dorsi muscles with addition of saponified animal and vegetable oil in the ration

A K Wati, S D Widyawati, W P S Suprayogi and J Riyanto

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Effects of decomposition rate of *Chromolaena odorata* and straw rice in fresh and compost form to the growth and yield of rice
R Agustina, R Jumadi, U Firmani and Faisal Abdul R H
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Effects of supplementation of cellulase, carnitine and fish oil on lipids and fatty acid contents of Indonesian native chicken meats
Sudibya and J Riyanto
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U Susanto, W R Rohaeni, D Prastika and F W Azkia
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Suwarto, I Dinuriah, R Pramesthi and Soraya
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Efficacy of the combination of herbicide active ingredient metsulfuron methyl, ethyl chlorimurone, sodium (2,4-dichlorophenoxy) acetate in the succession of rice weeds with different doses of cow manure
A Rizal-Az, D Arbiwati and L Peniwirati

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Development of arrowroot flour and taro flour snack bar with banana bud flour supplementation as snack for diabetes patient

A R Priatama, I Nuraeni and Saryono

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B Sumanto, D N Ethika and D Kusnaman

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D Mustikawati, Suntoro and Pardono

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D A Puspitaningrum

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The effects of Arenga wood-fiber size and nutrition concentration on growth and yield of substrate hydroponic Kailan (*Brassica alboglabra*)

D Harjoko, W S Dewi, Samanhudi and B Pujiasmanto

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Application of chitosan for vegetative growth of kemiri sunan plant in marginal land

E B Irawati, E R Sasmita and A Suryawati

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Effectiveness of some clove and citronella oil based-pesticide formulas against root-knot nematode on ginger

S R Djiwanti, Supriadi and Wiratno

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Replanting of smallholder palm oil plantations in Dharmasraya District, West Sumatera Province, Indonesia

I W Syarfi, M Noer and A S Utami

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Agronomic performance of F4 population of rice breeding lines derived from the cross of Black Rice and Mentik Wangi varieties

Suprayogi, M A Praptiwi, A Iqbal and T J Agustono

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Factors affecting entrepreneurial intentions among beef cattle farmers in Boyolali Regency, Central Java, Indonesia

S H Purnomo, E T Rahayu, A I Sari and S Emawati

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Sakhidin, A S D Purwantono and S R Suparto
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Growth and development of pigeon pea (*Cajanus cajan*) on the differences of Fitosan concentration
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Enhancing potato (*Solanum tuberosum* L.) yield by using biological organic fertilizers and soil conservation practices on the slope andisol
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Composition of planting media and biological agents to improve physical and chemical properties of soil
Kharisun, Fadillah, Mujiono and Suciati
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Taxa status of some reported plant parasitic nematodes in Indonesia

S R Djiwanti

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M Rum, D H Darwanto, S Hartono and Masyhuri

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Influence of different extraction methods on physic-chemical characteristics and chemical composition of coconut oil (*Cocos nucifera* L)

A I Ibrahim, S Nurjanah, A M Kramadibrata, R. Naufalin, Erminawati and H. Dwiyanti

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Efforts to improve the growth of longan plant grafting (*Dimocarpus longan* lour.) in Indonesia with the application of fertilizer

E W Tini, P Sulistyanto and Rr P H Purwantini

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Intercropping of *Zingiber officinale* Var. Amarum on teak silviculture in Karangduwet, Paliyan, Gunung Kidul Yogyakarta

A Sudomo, G E Sebastian, A Perdana, D Prameswari and J M Roshetko

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The utilization of phenol in betel leaf (*piper betle*) as feed to reduce *Aeromonas hydrophylla* infection in dumbo catfish (*Clarias gariepinus*) and gourami (*Ospronemus gouramy* Lac.) fish cultivation

H Soeprapto and P Syarif

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Breakfast development based on jack bean and analysis of physical, chemical and sensory product

Breakfast development based on jack bean and analysis of physical, chemical and sensory product

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Abstract. The physical characteristics jack bean is hard outer skin, make it difficult to process. This research aimed to determine the proportion of jack bean and tapioca flour for making jack bean breakfast; the effect of peeling method by immersion in $CaCO_3$ and NaOH solutions and to determine concentration of skim milk for making jack bean breakfast with good physical, chemical, and sensory properties This research used a randomized block design. Factors studied were the proportion of jack bean flour: tapioca w/w, consisted of 3 levels (70:30, 60:40; 50:50); peeling method consisted of 2 levels (15% $CaCO_3$ for 1 hour and 3% hot NaOH solution for 7 minutes); and the addition of skim milk consisted of 3 levels (5, 7.5, and 10%). The best treatment combination was jack bean: tapioca flour 60:40: peeling by $CaCO_3$, skim milk concentration 7.5%. Jack bean breakfast had a rehydration coefficient of 3.37; water content of 4.57% wb; ash content of 2.54% wb (2.66% db). protein content 12.18% wb (12.76% db); fat 8.13% wb (8.52% db), carbohydrate (by difference) 72.58% wb (76.06% db), crunchy texture value (3.37); a rather distinctive taste (2.17); delicious flavor (2.67); and panelist preferences of favored products (2.63).

1. Introduction

The community activities cause frequent neglect breakfast. Breakfast is very important to support physical activity and mental development. The solution is fast food and practical but it has nutritional standards, namely cereal breakfast, which is ready-to-eat food made through an extrusion process and is usually consumed by adding milk as a breakfast menu [1]. To increase food diversification and provide alternative breakfast products, it is necessary to use other ingredients such as Jack beans (*Canavalia ensiformis*).

Jack bean contains 60.1% carbohydrates, 30.36% protein, and 8.3% fiber [2]. Jack bean has considerable potential to be developed as an alternative food source of protein because of a balance of amino acids, but unfortunately this potential has not been developed optimally so that utilization is still relatively limited. One of the obstacles in utilizing jack bean is its physical character. Therefore, this study uses paring method with alkaline solution, namely NaOH and lime ($CaCO_3$) to facilitate the hard stripping of the jack bean's skin. Previous study has conducted in making durian seed flour with lime water immersion ($CaCO_3$) at a concentration of 5, 10, 15% [3]. Therefore, in this study immersion of $CaCO_3$ solution was carried out at concentration of 15%. To improve the diversity of jack bean, in this study jack bean was processed into flour and used as raw material for making breakfast as a substitute for flour which is the main raw material for making cereal breakfast. Furthermore, the addition of skim milk is expected to improve flavoring, binding water, forming a strong and porous structure, and forming

colors due to browning reactions in the jack bean breakfast. Skim milk contains food from milk except for fat and vitamins that are fat-soluble [4].

Based on the description, this study aimed to: 1) determine the effect of the method of paring the Jack bean with immersion in a solution of $CaCO_3$ and NaOH; 2) determine the proportion of jack bean and tapioca flour for making good jack bean breakfast with physical, chemical and sensory properties; 3) determine the concentration of skim milk for making good Jack bean breakfast with physical, chemical and sensory properties; 4) establish the best treatment combination for the physical, chemical and sensory properties of jack bean breakfast.

2. Research methodology

This research was conducted at the Processing Laboratory, Food and Nutrition Laboratory, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto, from September to December 2017. The material used in the manufacturing jack bean flour was obtained from Bogor, 3% NaOH, 15% $CaCO_3$. The ingredients used in the manufacture of Jack bean breakfast were skim milk, salt refina brand, tapioca brand Rose Brand, Digisari brand ovalet, Intisari brand sugar, baking powder, and Mama Suka brand oil obtained from Purwokerto Intisari Store. The material used in the analysis of Jack bean chrysanthemum breakfast chemistry consisted of technical NaOH, 0.1 N NaOH, Petroleum ether, $K_2S_2O_4$, HgO, H_2SO_4, methyl red HCl indicator, and whatman filter No. 41.

The equipment used for chemical analysis of Jack bean breakfast products include porcelain dishes, ovens (Memert 854 Schwabach, Germany), desiccators, analytical balance sheets, Soxhlet (P selecta Recisterm, Germany), fat pumpkins (Duran 250 ml, Germany), pumpkin Kjedahl (Duran 250 ml, Germany), furnace (Thermolyne Series-1000, Germany) and a set of glassware (Pyrex).

This study used an experimental method with the experimental design used was Randomized Block Design (RBD). The factors studied were paring method consisting of 2 levels ($CaCO_3$ 15% for 1 hour (K1) and 3% NaOH solution heat for 7 minutes (K2)); proportion of tapioca-tapioca flour w/w, consisting of 3 levels (70:30 (P1); 60:40 (P2); 50:50 (P3)); and addition of skim milk consisting of 3 levels (5% (M1); 7.5% (M2); 10% (M3)). The treatment was arranged factorially with 18 treatment combinations and 2 replications to obtain 36 experimental units.

The variables observed consisted of physical variables namely rehydration coefficient; chemical variables included moisture content, ash content, total protein content, total fat content, and carbohydrate content (by difference); and sensory variables included texture, typical Jack bean flavor, flavor, and preference, as well as protein, fat content, and carbohydrate (by difference) levels which are only carried out on the best treatment combination.

Physical and chemical variable data were analyzed using Variance Analysis (Test F) at the level of 5%, if the results of the analysis had a significant effect followed by DMRT at the level of 5%. Sensory variables were analyzed using Friedman Test and if significantly different, it would be followed by a double comparison test at the 5% level. The best treatment combination is determined using the Effectiveness Index Test.

3. Result and discussion

3.1. Physical and chemical variable

The results of various analysis of the effect of stripping method (K), the proportion of jack bean flour: tapioca (P), and the addition of skim milk (M) and the interaction between the three (KxPxM) on physical and chemical variables of Jack bean breakfast are presented in Table 1.

Table 1. Results of analysis of variance (F test) stripping method (K), the proportion of Jack bean flour: tapioca (P), and the addition of skim milk (M) and interaction between the three (KxPxM) to physical and chemical variables of Jack bean breakfast

Variable	Treatment						
	P	K	M	P x K	P x M	K x M	P x K x M
Coefficient rehydration	**	Ns	**	ns	ns	ns	ns
Water content	**	*	ns	ns	ns	ns	ns
Ash content	ns	Ns	ns	ns	ns	ns	ns

K = stripping method; P = proportion of jack bean flour: tapioca; M = concentration of skim milk; K x P x M = interaction between stripping method, proportion of Jack bean flour: tapioca, and skim milk concentration; ns = not significant; * - significant effect, ** - very significant.

3.1.1. *Coefficient rehydration.* Proportion of jack bean flour: tapioca had a very significant effect on the rehydration coefficient of the Jack bean breakfast. The average value of rehydration coefficient of jack bean breakfast in the treatment of proportion of Jack bean: tapioca (P) is presented in Figure 1.

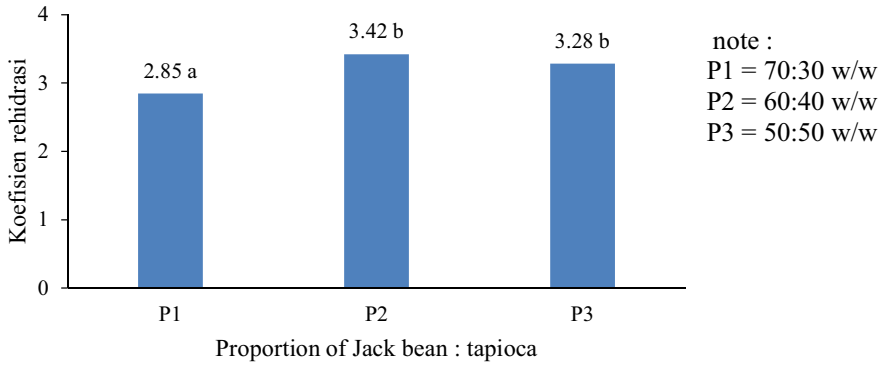


Figure 1. Rehydration coefficient of Jack bean breakfast in the treatment of proportion of jack bean: tapioca.

Jack bean breakfast with a proportion of Jack bean: tapioca 60:40% w/w treatment had a higher average rehydration coefficient (3.42) compared to the proportion of jack bean: tapioca 50:50% w/w (3.28) although not significantly different. The average value of the lowest rehydration coefficient, which is 2.85 is produced from the proportion of jack bean flour: tapioca 70:30% w/w. The use of tapioca increased the rehydration coefficient value. Water absorption (rehydration) in breakfast products is related to serving for consumption. The faster the product absorbs water, the better because it is faster to consume. Starch is a homopolymer of glucose with α-glycoside bonds which have hydroxyl groups that can form hydrogen bonds with water molecules [5]. The more starch added, the higher the porosity of the product.

The concentration of skim milk had a very significant effect on the rehydration coefficient of jack bean breakfast. The average value of rehydration coefficients for jack bean breakfast in skim milk concentration (M) treatment is presented in Figure 2.

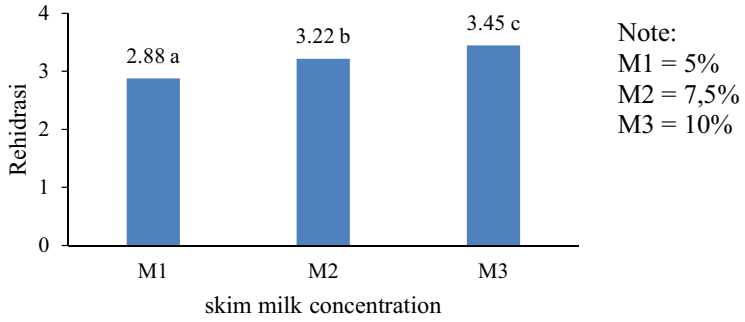


Figure 2. Rehydration coefficient of Jack bean breakfast in the treatment of skim milk concentration.

Jack bean breakfast in the treatment of skim milk concentration was 2.88; 3.22; 3.45. The highest rehydration coefficient value was obtained from the treatment of 10% skim milk concentration, while the lowest rehydration coefficient was obtained from 5% skim milk concentration. This was due to the protein content in skim milk that can bind water. Protein is hydrophilic so that the higher the protein content of a food ingredient, the higher the water binding ability [6]. The protein content in skim milk is 39.48% [7].

3.1.2. Water content. The paring method significantly affected on the water content of the Jack bean breakfast. The average value of the water content of jack bean breakfast (K) is presented in Figure 3.

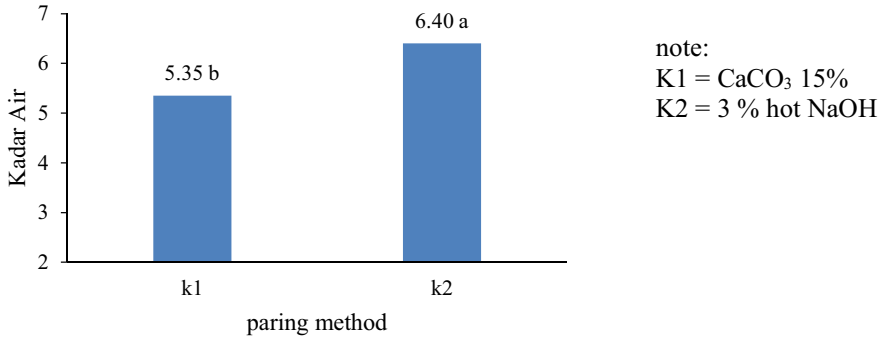


Figure 3. Water content of Jack bean breakfast in the stripping method treatment.

Jack bean breakfast of paring using soaking in $CaCO_3$ (K1) produced a breakfast of jack bean with lower moisture content. $CaCO_3$ or lime water contains calcium which can strengthen the tissue [8]. Strong tissue structure can cause difficulty in the diffusion of water into the material, so that the water content in the Jack bean does not increase. This is consistent with previous finding that the effect of lime water concentration on water content is due to the fact that this lime is binding to CO2 and water (hygroscopic) thus forming $Ca(OH)_2$ and reducing water content [9]. Ca ion in lime will enters the material and binds water so that the water content will decrease.

Jack bean breakfast of hot NaOH paring method (K2) has an average water content greater than using $CaCO_3$ (K1) soaking. The nature of the basic NaOH solution makes lignin in jack bean dissolve so that the skin can peel and heat in the solution causes the hydrolysis process to take place. This hydrolysis

process causes higher levels of heat (K2) paring treatment water. Previous study showed that during boiling treatment in 2.5% NaOH boiling for 5 minutes, the Cubiu peel gradually proves the hydrolysis of the inner layer, but the skin remains detached from the fruit without tearing [10]. When the fruit is removed from boiling water and exposed to tap water, the skin is easily removed under running tap water.

The proportion of jack bean flour: tapioca had a very significant effect on the water content of the Jack bean breakfast. The average value of water content of Jack bean breakfast in the treatment of proportion of jack bean: tapioca (P) is presented in Figure 4.

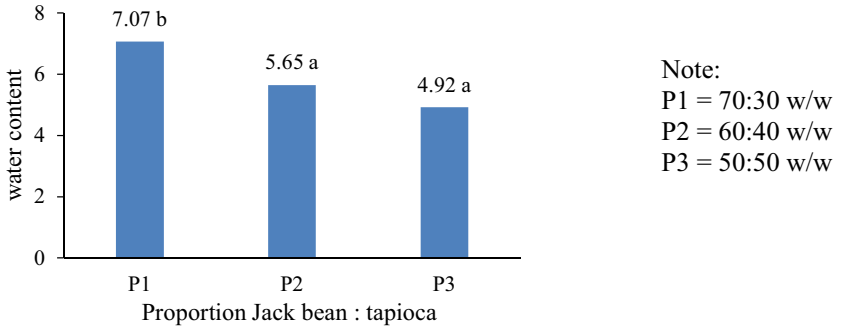


Figure 4. Average value of water content of jack bean breakfast in the treatment of proportion of Jack bean: tapioca

In the treatment proportion of Jack bean flour: tapioca P2 60:40% w/w and P3 50:50% w/w had no significant effect. Average value of water content in the treatment of proportion of jack bean flour: tapioca, respectively 7.07% w/w; 5.65% bb; 4.92% w/w. A decrease in the proportion of jack bean causes the product's water content tends to decrease. The water content of Jack bean breakfast is influenced by the protein content of Jack bean flour which has a higher water binding ability so that with a decrease in the proportion of flour causes water content in the jack bean breakfast decreased. This is in accordance with the opinion that protein has a higher water binding ability than starch [11]. The hydrogen bond formed between starch molecules and water will decrease with the interaction between starch and protein.

3.1.3. *Ash content.* The effect of paring method (K), the proportion of jack bean flour: tapioca (P), and the addition of skim milk (M) and the interaction between the three (KxPxM) did not significantly affect the ash content of jack bean breakfast. The average ash content of Jack bean breakfast is based on the interaction of paring methods; the proportion of Jack bean flour: tapioca; and the concentration of skim milk ranged from 1.48-3.73%. The average ash content of swordfish is quite high. This is because the jack bean has an ash content of 2.7% dry weight [12], while according to [13], tapioca has 0.16% ash content.

3.2. Sensory variable

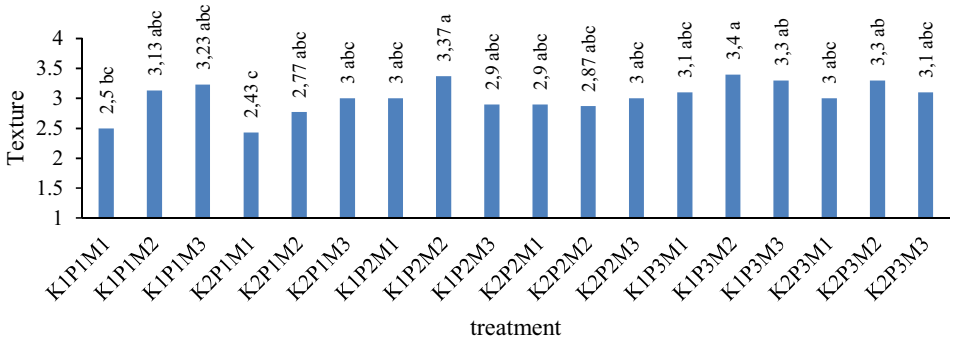
Friedman test results influence the combination of paring method treatment; the proportion of Jack bean flour: tapioca; and the concentration of skim milk (KxPxM) on the jack bean breakfast sensory variables is presented in Table 2.

Table 2. Friedman test results influence the combination of paring method treatment; the proportion of Jack bean flour: tapioca; and skim milk concentration.

Variable	treatment KPM
Texture	**
Typical taste of Jack bean	**
Flavor	**
Preference	**

KxPxM = stripping method, the interaction between the proportion of Jack bean flour: tapioca, and skim milk concentration; ** - very significant effect based on the *Friedman* test.

3.2.1. Texture. Friedman test results show that the combination of stripping method treatment; the proportion of jack bean flour: tapioca; and the concentration of skim milk has a very significant effect on the texture of the Jack bean breakfast. The average value of jack bean breakfast texture can be seen in Figure 5.



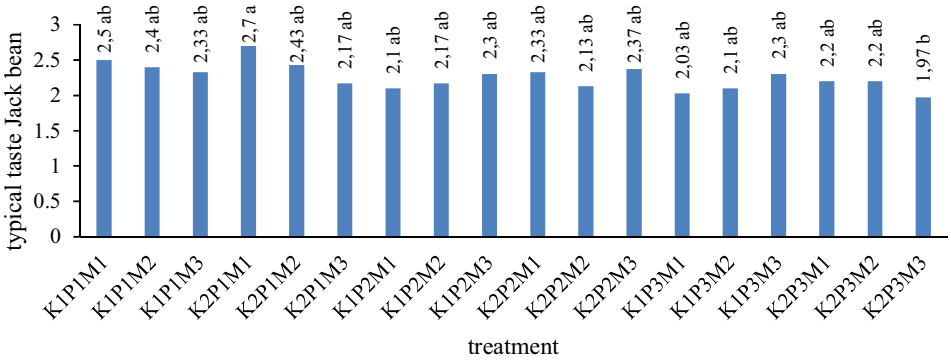
K = stripping method (K1 = CaCO3 15%; K2 = NaOH 3% heat); P = proportion of Jack bean flour: tapioca (P1 = 70: 30%; 60: 40%; 50: 50%); M = concentration of skim milk (M1 = 5%; M2 = 7.5%; M3 = 10%). 1 = not crisp; 2 = rather crunchy; 3 = crisp; 4 = very crunchy.

Figure 5. The average score of jack bean breakfast texture score on the combination of stripping method treatment; the proportion of jack bean flour: tapioca; and skim milk concentration.

The average value of jack bean breakfast texture ranged from 2.43 to 3.4 which means it was rather crispy to crunchy. The results showed that the jack bean breakfast texture in the combination treatment K1P3M2 (paring $CaCO_3$; Jack bean flour: 50:50 tapioca; 7.5% skim milk concentration) produced the highest value of 3.4 which means crispy. The treatment of K2P3M2 was not significantly different from K2P3M3. The combination of K2P1M1 treatment (NaOH stripping; jack bean: tapioca 70:30; skim milk concentration 5%) resulted in the lowest value of 2.43.

Jack bean breakfast texture is influenced by the availability of starch in the raw material and the presence of starch gelatinization process. The higher starch added produced a high porosity product and have many cavities so that the product becomes crispy [5]. In addition, the texture of the jack bean's breakfast texture is also influenced by the amount of amylopectin found in the mixture. The level of development and texture of snacks is influenced by the content of amylose and amylopectin [14]. Starch which has high amylopectin content tends to give a fragile (easily broken) product character. Tapioca has an amylopectin content of 83% [15], while the jack bean amylopectin content is lower at around 68.88% [16]. In addition, the texture of the jack bean is also influenced by skim milk. Skim milk is used as a source of protein and improves texture in the final product [17].

3.2.2 Typical taste Jack bean. Friedman test results show that the combination of treatments between stripping methods; the proportion of jack bean flour: tapioca; and the concentration of skim milk has a very real effect on the typical taste of Jack bean breakfast. The average value ranges from 1.97-2.7 it is mean the typical taste of jack bean. The results showed that the texture of jack bean breakfast in the combination treatment K2P1M1 (stripping NaOH; jack bean flour: tapioca 70:30; skim milk concentration 5%) yielded the highest value of 2.7, which means typical of jack bean. This is because the jack bean flour used in this study has a very typical jack bean, so it has a distinctive jack bean flavor.

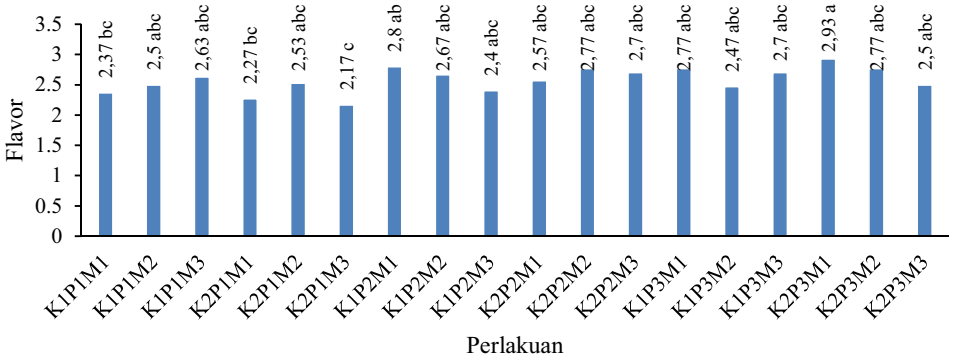


Description: K = stripping method (K1 = CaCO3 15%; K2 = NaOH 3% heat); P = proportion of Jack bean flour: tapioca (P1 = 70: 30%; 60: 40%; 50: 50%); M = concentration of skim milk (M1 = 5%; M2 = 7.5%; M3 = 10%). 1 = not typical; 2 = rather typical of Jack bean; 3 = typical; 4 = very typical.

Figure 6. Mean score of typical jack bean score for breakfast on a combination of stripping method treatment; the proportion of Jack bean flour: tapioca; and skim milk concentration.

3.2.3. Flavor. Flavor or taste is a sensation produced by food ingredients when placed in the mouth especially caused by taste and smell [18]. Friedman test results show that a combination of stripping methods; the proportion of jack bean flour: tapioca; and the concentration of skim milk significantly affect the flavor of the jack bean breakfast. The average value of the Jack bean breakfast flavor can be seen in Figure 7.

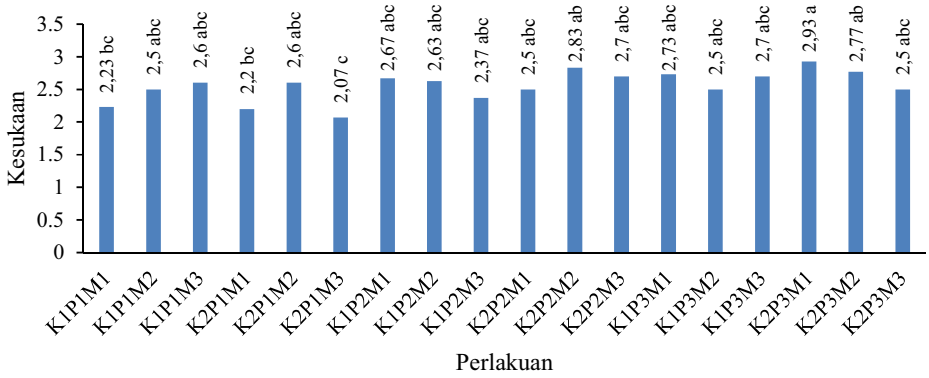
The average value of the jack bean's breakfast flavor ranged from 2.17–2.93 which meant it was rather tasty to tasty. The highest average flavor value in Jack bean breakfast was 2.93 in K2P3M1 treatment (NaOH stripping; jack bean flour: 50:50 tapioca; 5% skim milk concentration). Jack bean breakfast treatment of K2P1M3 (stripping NaOH; jack bean flour: tapioca 50:50; skim milk concentration 10%) having the lowest value of 2.17 which means rather tasty. Based on the results, jack bean breakfast with a proportion of tapioca which produces more delicious flavor than Jack bean breakfast with less tapioca. This seems to be influenced by the level of product crispness. Panelists tend to like crispy breakfast when eaten.



Description: K = stripping method (K1 = CaCO3 15%; K2 = NaOH 3% heat); P = proportion of Jack bean flour: tapioca (P1 = 70: 30%; 60: 40%; 50: 50%); M = concentration of skim milk (M1 = 5%; M2 = 7.5%; M3 = 10%). 1 = not good; 2 = rather good; 3 = delicious; 4 = very good.

Figure 7. The average score of jack bean breakfast flavor score on the combination of stripping method treatment; the proportion of jack bean flour: tapioca; and skim milk concentration.

3.2.4. Preference. Friedman test results show that a combination of paring methods; the proportion of jack bean flour: tapioca; and the concentration of skim milk has a very real effect on the preferences of the Jack bean breakfast. The average value of a favorite breakfast can be seen in Figure 8.



Description: K = stripping method (K1 = CaCO3 15%; K2 = NaOH 3% heat); P = proportion of Jack bean flour: tapioca (P1 = 70: 30%; 60: 40%; 50: 50%); M = concentration of skim milk (M1 = 5%; M2 = 7.5%; M3 = 10%). 1 = dislike; 2 = rather like; 3 = likes; 4 = really like it.

Figure 8. Mean score of jack bean breakfast preference score on a combination of paring method treatment; the proportion of jack bean flour: tapioca; and skim milk concentration.

The average value of panelists' preference for jack bean breakfast produced in the combination of stripping method treatment; the proportion of jack bean flour: tapioca; and the concentration of skim milk ranges from 2.07 to 2.93 which means it's rather like to like. The highest level of panelist preference (2.93) was found in K2P3M1 treatment (NaOH stripping; jack bean flour: 50:50 tapioca; 5% skim milk

concentration). Breakfast of jack bean treatment K2P1M3 (stripping NaOH; jack bean flour: tapioca 50:50; skim milk concentration 10%) has the lowest value of 2.07. The level of panelists' preference for Jack bean breakfast tends to decrease with the increasing proportion of jack bean flour. This is because the panelists are not familiar with the taste of the jack bean which tends to be "bitter". In addition, the level of preference is influenced by various factors including taste, aroma, and texture.

3.3. The best treatment of chemical variable

3.3.1. Total protein content. Based on the effectiveness index analysis, a combination of the best treatment was obtained from K1P2M2 jack bean breakfast (stripping with $CaCO_3$; jack bean flour: tapioca 60:40: 7.5% skim milk concentration). Results of total protein analysis of K1P2M2 Jack bean breakfast were 12.18% fresh weight (12.76% dry weight). The total protein content of the jack bean breakfast comes from the main raw material, namely the Jack bean which has a large protein content. Jack bean has a protein content of 30.36% [2]. In addition, the use of skim milk of 7.5% also increases the Jack bean's breakfast protein. The protein content of skim milk was 39.48% [7].

3.3.2. Fat content. The results of the analysis of fat content in the jack bean breakfast combination of the best treatment of K1P2M2 was quite high, which was 8.13% fresh weight (8.52% dry weight). This is presumably because the fat content of jack bean seeds is quite high, containing fat by 3.9% dry weight [12]. In addition, the use of soybean oil is also able to increase fat levels by 18.1% [19]. Therefore, more and more proportions of jack bean and soybean oil are used, it will produce high levels of fat.

3.3.3. Carbohydrate content by the difference. The results showed the carbohydrate value by the difference in the jack bean breakfast the best treatment combination of K1P2M2 was 72.58% fresh weight (76.06% dry weight). Carbohydrate levels were calculated using the by difference method which is influenced by other chemical components namely the value of water, protein, fat, and ash [20]. If the total amount of these compounds is lower, the carbohydrate content will be higher and vice versa.

The results of the evaluation of the data with the effectiveness index showed the best treatment was the jack bean breakfast K1P2M2 (stripping CaCO3; jack bean: tapioca 60:40; 7.5% skim milk concentration). The results of the best jack bean breakfast products in this study were compared with the commercial cereal breakfast "Koko crunch" and SNI 01-4270-1996 can be seen in Table 3.

The water content of jack bean breakfast K1P2M2 (stripping with $CaCO_3$; jack bean flour: tapioca 60:40; skim milk concentration 7.5%) in this study was higher (4.57% fresh weight) compared to SNI 01-4270- 1996 (maximum 3%) but tends to be lower than commercial products (4.8% fresh weight). When viewed from the basic ingredients, jack bean has a protein content of 30.36% [2], and jack bean flour has a water content of 10.09% [16]. The possibility of a high-water content of jack bean breakfast is caused by high protein and skim milk which easily binds water molecules. Protein has the ability to easily bind water molecules in the presence of hydrogen bonds so that the more protein contained in the material, the more water is bound [23].

K1P2M2 jack bean (2.66% dry weight) was higher than the commercial product (1.76% dry weight) but lower than SNI 01-4270-1996 (maximum 4% fresh weight). The average ash content of jack bean is quite high. This is because the jack bean has ash content of 2.7% dry weight [12], while according to [13], tapioca has 0.16% ash content. Besides that, the skim milk ash content is 0.8% [4].

The total protein content of K1P2M2 jack bean breakfast was higher (12.76% dry weight) compared to commercial products (8.7% dry weight). This is because the use of Jack bean flour is quite large at the K1P2M2 jack bean breakfast. Jack bean has a high protein content of 30.36% [2] while commercial products use wheat flour. Protein in wheat flour is 8-12% [24]. In addition, the K1P2M2 jack bean breakfast product uses skim milk of 7.5%. Skim milk contains protein of 39.48% [7]. The total protein

content of K1P2M2 jack bean breakfast meets the standards set by SNI 01-4270-1996, namely a minimum of 5% fresh weight.

Table 3. Comparison of the chemical content of K1P2M2 jack bean breakfast products and commercial cereal breakfast "Koko crunch" and SNI 01-4270-1996

Parameter	*breakfast* K1P2M2 product		[1)]commercial product "Koko crunch"		[2)]SNI 01-4270-1996
	% fesh weight	% dry weight	% fresh weight	% dry weight	
Water content	4.57	-	4.8	-	Max 3.0% bb
Ash content	2.54	2.66	1.67	1.76	Max 4.0%fresh weight
Protein	12.18	12.76	8	8.7	Min 5.0%fresh weight
fat	8.13	8.52	8	8.7	Min 7.0%fresh weight
Carbohydrate content *by the difference*	72.58	76.06	77.53	81.44	Min 60%fresh weight
Texture	Crispy		-		Crispy
Typical taste Jack bean	Light		-		Normal
Flavor	Good		-		Normal
Preference	Like		-		Normal

Source: [21]
[22]

K1P2M2 jack bean breakfast fat content was higher (8.52% dry weight) compared to commercial products. This is because in the manufacture of jack bean breakfast products added 5% soybean oil as a substitute for margarine so that the fat content of the jack bean breakfast products increased. But the K1P2M2 jack bean breakfast still meets the standards set by SNI 01-4270-1996 which is a minimum of 7% fresh weight.

K1P2M2 jack bean breakfast carbohydrate levels were lower (76.06% dry weight) compared to commercial products which was 81.44% dry weight. This is because the carbohydrate content of wheat flour is greater than that of jack bean. According to the [25] wheat carbohydrate content was 71% while in the jack bean 66.1% [26]. But the K1P2M2 jack bean breakfast still in the standards set by SNI 01-4270-1996 which is a minimum of 7% fresh weight. Breakfast jack bean K1P2M2 has crisp texture (3.37); rather typical jack bean taste (2.17); delicious (2.67); and the level of panelists' preference for products like (2.63).

4. Conclusions

4.1. The method of paring the jack bean affects the water content of jack bean breakfast. The method of paring jack bean that is suitable for producing breakfast products with good physical, chemical and sensory qualities was breakfast with paring immersion in $CaCO_3$ 15% solution (K1) has a lower moisture content than the jack bean breakfast paring with solution 3% NaOH heat (K2).

4.2. Proportion of jack bean: tapioca which for producing breakfast products with good physical, chemical and sensory qualities is 60: 40% w/w that produces a jack bean breakfast with crispy texture, rather typical of jack bean flavor, delicious flavor, and the high level of preference of the panelists.

4.3. The addition of skim milk that for producing breakfast products with good physical, chemical and sensory properties was 7.5% w/w.

4.4. The best treatment combination was K1P2M2 Jack bean breakfast (stripping with CaCO3; Jack bean flour: tapioca 60:40: 7.5% skim milk concentration). Breakfast jack bean K1P2M2 has a rehydration coefficient of 3.37; water content 4.57% fresh weight; ash content 2.54% fresh weight (2.66% dry weight), protein content 12.18% fresh weight (12.76% dry weight); fat 8.13% fresh weight (8.52% dry weight), carbohydrate (by difference) 72.58% fresh weight (76.06% dry weight), crisp texture value (3.37); rather typical jack bean taste (2.17); delicious (2.67); and the high level of panelists' preference for products like (2.63).

Acknowledgments
Authors wish to thanks to the DRPM KEMENRISTEKDIKTI of Republic of Indonesia which has provided research funding through Strategies Nasional Grant Scheme 2018; also to Institute for Research and Community Service of Jenderal Soedirman University for the support.

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ICSARD 2018
INTERNATIONAL CONFERENCE ON SUSTAINABLE AGRICULTURE FOR RURAL DEVELOPMENT 2018
Faculty of Agriculture, Jenderal Soedirman University
Purwokerto - Indonesia

ACCEPTANCE LETTER

21 September 2018

Dear Rifda Naufalin
Jenderal Soedirman University, Indonesia
Paper ID: 092

The INTERNATIONAL CONFERENCE ON SUSTAINABLE AGRICULTURE FOR RURAL DEVELOPMENT (ICSARD) 2018 committee inform you that the abstract entitled:

BREAKFAST DEVELOPMENT BASED ON JACK BEAN AND ANALYSIS OF PHYSICAL, CHEMICAL AND SENSORY PRODUCT

has been accepted for Oral Presentation based on the peer-review by the technical committee of ICSARD 2018, which will be held on 23-24 October, 2018 at Java Heritage Hotel, Purwokerto - Indonesia. The abstract will be appeared in the book of abstracts and be available for all participants at the conference. We would like to thank for your participation in the ICSARD 2018 and look forward to seeing you in Purwokerto - Indonesia.

Best regards,

Susanto Budi Sulistyo, PhD.
Chairman of ICSARD 2018 Committee

The Committee of
International Conference on Sustainable Agriculture for Rural Development 2018
(ICSARD-2018)

CERTIFICATE

Awarded to

Rifda Naufalin

as

Presenter

in International Conference on Sustainable Agriculture for Rural Development 2018 (ICSARD 2018) on 23 - 24 October 2018 at Java Heritage Hotel, Purwokerto, Indonesia

Dr. Ir. Anisur Rosyad, M.S.
Dean of Faculty of Agriculture
Jenderal Soedirman University

Susanto Budi Sulistyo, S.TP.,M.Si.,Ph.D
Chairman of ICSARD 2018

Meeting Schedule of ICSARD 2018, 23-24 October 2018
Java Heritage Hotel, Purwokerto, Indonesia

DAY 1 – Tuesday, 23 October 2018		
Time	**Session**	**Room**
08:00-09:00	**Registration**	**Khrisna Ballroom**
09:00-10:00	**Opening Ceremony**	**Khrisna Ballroom**
	Traditional Dance	
	National Anthem "Indonesia Raya"	
	Prayer	
	1. Report by General Chairman	
	2. Welcoming Remark by the Rector of Jenderal Soedirman University	
	3. MoU Signing between Faculty of Agriculture Jenderal Soedirman University and Faculty of Agriculture Saga University	
	4. Photo Session	
10:00-10:15	**Coffee Break**	**Khrisna Ballroom**
10:15-12:00	**Plenary 1** Chairman : M. Nazarudin Budiono, M.Sc. Notulen : Dr. Eni Sumarni	**Khrisna Ballroom**
	Invited Speakers	
10:15-10:40	1. Prof. Dr. Shao Hui Zheng (Saga University, Japan) "*The Role of Nitrogen Nutrition on Monocarpic Senescence in Soybean"*	
10:40-11:05	2. Prof. Dr. Rindit Pambayun (Sriwijaya University, Indonesia) *"Challenging on Global Food Safety, Quality and Security"*	
11:05-11:30	3. Prof. Loekas Soesanto, Ph.D (Jenderal Soedirman University, Indonesia) *"Organic Pesticides: The Best Solution for Controlling Plant Pests and Diseases"*	
11:30-12:10	Discussion	
12:10-13:30	**Lunch**	**Ambalika Restaurant**
13:30-15:00	**Plenary 2** Chairman : Ahadiyat Yugi R, D.Tech.Sc Notulen : Riana Listanti, M.Sc	**Khrisna Ballroom**
	Invited Speakers	
13:30-13:55	1. Dr. Tuyen Chan Kha (Nong Lam University, Viet Nam) *"An Application of Encapsulation Technology for Bioactive Compounds: Trend and Prospect"*	
13:55-14:20	2. Prof. Totok Agung DH, Ph.D (Jenderal Soedirman University, Indonesia) "*Crop Production Improvement in Rainfed Land by Using Crop Pattern Approach*	
14:20-15:00	Discussion	
15:00-15:20	**Coffee break**	**Arjuna 1-5**
15:20-17:30	**Parallel 1 (See detail parallel section)**	**Arjuna 1-5**

17:30-17.35	**Closing Day 1**	**Arjuna 1-5**
19:00-21:00	**Dinner for Jenderal Soedirman University Representatives & Invited Speakers**	**Ambalika Restaurant**
DAY 2 – Wednesday, 24 October 2018		
Time	**Session**	**Room**
07:30-08:30	**Registration**	**Khrisna Ballroom**
08:30-10:15	**Plenary 3** Chairman : Krissandi Wijaya, Ph.D Notulen : Indah Widyarini, MP	**Khrisna Ballroom**
08:30-08.55	1. Prof. Dr. Robert Edwin Paull (University of Hawai'i at Manoa) *"Postharvest Losses and Safety of Fruits and Vegetables for Enhanced Sustainability"*	
08:55-09:20	2. Prof. Lilik Soetiarso, Ph.D (Gadjah Mada University, Indonesia) *"Development of Selective Precision Agriculture in Indonesia Towards Industry Revolution 4.0"*	
09:20-09:45	3. Prof. Dr. Ahmad Yunus (Sebelas Maret University, Indonesia) *"The Role of Sustainable Agriculture and Biotechnology on Agriculture Production"*	
09:45-10:15	Discussion	
10:15-10:30	Coffee break	**Khrisna Ballroom**
10:30-12:00	**Parallel 2 (See detail parallel section)**	**Arjuna 1-5**
12:00-13:00	**Lunch**	**Ambalika Restaurant**
13:00-14:00	**Parallel 3 (See detail parallel section)**	**Arjuna 1-5**
14:00-15:10	**Parallel 4 (See detail parallel section)**	**Arjuna 1-5**
15:10-15:30	**Coffee break**	**Khrisna Ballroom**
15:30-16:00	**Closing Ceremony**	**Khrisna Ballroom**
	Announcement of best presenter award	
	Closing remark by Dean of Agriculture Faculty, Jenderal Soedirman University	
DAY 3 – Thursday, 25 October 2018		
07:00-19:00	**Excursion Tour to Tambi Agrotourism and Dieng Plateau**	

Room: Arjuna 1

DAY 1 – Tuesday, 23 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 1 Chairman: Budi Prakoso, D.Tech.Sc					
1.	15:20-15:30	051	Effect of Flowering Plants on Population Dynamics of Rice Stem Borers and Their Natural Enemies.	R. R. Rukmowati Brotodjojo, Taufik Arochman, Chimayatus Solichah	Faculty of Agriculture, Universitas Pembangunan Nasional "Veteran" Yogyakarta
2.	15:30-15:40	103	Effect Ethylene Inhibitor, Type of Auksin, Type of Sugar, and Duration of Pre-Cold Treatment in The Anther Culture of Local East Java Aromatic Rice Varieties	Wahyu Indra Duwi Fanata, Fragaria Vesca Paradisa, Dewi Puspa Arisandi, Bambang Sugiharto and Sholeh Avivi	Faculty of Agriculture University of Jember, Jember, Indonesia
3.	15:40-15:50	117	Test of The Resistance of Rhizobium Bacteria to Salinity for The Development of Food Legume Plants in Coastal Areas	Eny Fuskhah, Endang Dwi Purbajanti, and Syaiful Anwar	Faculty of Animal and Agricultural Sciences, Diponegoro University
4.	15:50-16:00	128	Random Amplified Polymorphic DNA (RAPD)Technique on Grouping Black Rice Germplasm	Ummi Sholikhah, Parjanto Tri Handoyo, and Ahmad Yunus	Graduate School Sebelas Maret University, Surakarta Indonesia,
5.	16:00-16:10	143	Gene Flow Study from Transgenic Crops	Tri Handoyo and Kyung-Min Kim	Center for Development of Advanced Science and Technology, University of Jember; School of Applied Biosciences, College of Agriculture & Life Science, Kyungpook National University, Daegu, South Korea
6.	16:10-16:20	144	Molecular Identification of 10 Aromatic Rice (Oryza sativa L.) Using RAPD	Nur Meli Zakiyah, Irza Guari Syah Fitri, Tri handoyo	Graduate program of Biotechnology, Jember University
7.	16:20-16:30	154	Effect of Putrescine on Callus Proliferation of Black Rice Anther	Anisa Maharani and Tri Handoyo	Graduate School of Biotechnology, University of Jember,
8.	16:30-16:40	001	The Efficacy of A Combination Herbicide Active Ingredient Metsulfuron Methyl, Ethyl	Abdul rizal AZ and Dyah Arbiwati	Faculty of Agriculture, Universitas Pembangunan

			Chlorimurone, Nattrium Garam in The Succession of Rice Weeds With Different Doses of Cow Manure		Nasional "Veteran" Yogyakarta
9.	16:40-16:50	006	Foliar Iron Application on Growth and Yield of Tomato	Amalia T Sakya, Sulandjari, Edi Purwanto	Department of Agrotechnology, Sebelas Maret University
10.	16:50-17:00	007	Morphological Characterization of Local Durian as Parent Tree in Bitingan District, Rembang	Andini Desi Sawitri, Endang Yuniastuti, Nandariyah	Sebelas Maret University
11.	17:00-17:10	014	Morfophysiology and The Yield of Two Types of Moringa Oleifera Lamk Cultivated in Madura	Catur Wasonowati, Endang Sulistyaningsih, Didik Indradewa, Budiastuti Kurniasih	Agriculture Faculty, Gadjah Mada University
12.	17:10-17:20	016	The Role of Cow Manure Fertilizer and Watering on Patchouli Plant Growth in Regosol Soil	Destiana Mustikawati, Suntoro, Pardono	Agronomy, Postgraduate Program, Universitas Sebelas Maret (UNS),
13.	17:20-17:30	017	Npk Fertilizer on Peanut and Maize Cultivation Under Agroforestry System	Djoko Purnomo, Mth Sri Budiastuti, and Amalia Tetrani Sakya	Faculty of Agriculture, Sebelas Maret University.
DAY 2 – Wednesday, 24 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 2 Chairman: Imastini Dinuriah, M.Sc.					
14.	10:30-10:40	019	The Effects of Arenga Wood Fiber-Size and Nutrition Buffering Concentration on Growth and Yield of Lettuce in Substrate Hydroponic Systems	Dwi Harjoko, W.S. Dewi, Samanhudi and B. Pujiasmanto	Doctoral Program of Agriculture Science, Graduate School, Universitas Sebelas Maret,
15.	10:40-10:50	021	The Application of Chitosan Towards The Vegetative Growth of Kemiri Sunan on Marginal Land	Endah Budi Irawati, Ellen Rosyelina Sasmita and Ami Suryawati	Faculty of Agriculture UPN "Veteran" Yogyakarta
16.	10:50-11:00	022	Colchicine Quantitation Of Gloriosa Superba Seeds From Different Location and Season	F Rahmawati, Sugiyarto and A Yunus	Bioscience, Graduate Program, Universitas Sebelas Maret
17.	11:00-11:10	024	Vermicompost and Mycorrhiza Arbuscular Giving to The Growth of Artemisia Annua in The Low Land	Zulfa Lail Gaibi, Fitria Roviqowati, Ahmad Yunus, Edi Purwanto	Agriculture Faculty, University of Sebelas Maret, Surakarta

18.	11:10-11:20	028	Prospects and Problem Confrontation of Dyke Vegetable Production in Ghers of South-Western Coastal Region of Bangladesh	Jafrin Akter, Mohammad Bashir Ahmed, Md. Abdul Mannan, Md. Matiul Islam	Agrotechnology Discipline, Khulna University, Bangladesh
19.	11:20-11:30	031	Effectiveness of Phosphorus Fertilizer on Soybean Plants in The Coastal Sands Soil	Khavid Faozi, Prapto Yudono, Didik Indradewa, and Azwar Ma'as	Doctoral Program in Agricultural Sciences , Faculty of Agriculture, Gadjah Mada University
20.	11:30-11:40	034	Crop Adaptation to Enhance Food Security to Mitigate The Climate Change Impact in Draught Prone Areas for Proliferation of Unsustainability	Muhammad Ziaul Hoque, Fardus Ahamed Nasim, Md. Enamul Haque, Md. Mamunur Rashid	Institute of Urban Environment, Chinese Academy of Sciences (CAS), China; Bangladesh Agricultural Research Institute, Gazipur, Bangladesh; Consumer and Organisational Digital Analytics (CODA) Research Centre, King's Business School, King's College London, UK
21.	11:40-11:50	037	Growth Responses of Corn Cultivars on Weed and Nitrogen Application	M. Rahayu, P. Yudono, D. Indradewa, and E. Hanudin	Faculty of Agriculture, Universitas Sebelas Maret
22.	11:50-12:00	042	Eco-Friendly Antimicrobial from Rhizome Extract of Java Grass (Cyperus Rotundus L.) As One of Solution to Resolve The Problems of Post Harvest Paprika	Panji Rahmatullah	Faculty of Sunan Gunung Djati State Islamic University
	12:00-13:00	**Lunch**			
Parallel 3 Chairman: Kharisun, Ph.D					
23.	13:00-13:10	043	The Study of Efectiveness Root-Up and Concentrations on Root Growth Rapidity of Potato (*Solanum tuberosum* L.) Derived from Cutting Bud	Erny Ishartati, Sukardi, Aulia Zakia, Rudy Madianto	Agrotechnology Department University of Muhammadiyah Malang
24.	13:10-13:20	060	Selection of Short Stem Mentik Susu Rice M3	Dessy Rachmawati, Wafa Nur Hanifah, Parjanto, Ahmad Yunus	Agriculture Faculty, Universitas Sebelas Maret,

25.	13:20-13:30	063	The Growth of Artemesia Annua with Addition Blotong Tebu and Micoryza in High Land	Muhamad Fauzi Pratama , Wisesa Dwi Wijaya, Edi Purwanto, Ahmad Yunus	Agriculture Faculty, University of Sebelas Maret,
26.	13:30-13:40	065	Phenolic Acids as Potent Plant Growth Inhibitors from *Tridax procumbens* L.	Yusuf Andriana, Tran Ngoc Quy, Tran Dang Xuan	Graduate School for International Development and Cooperation, Hiroshima University, Japan; Development Center for Appropriate Technology, Indonesian Institute of Indonesia
27.	13:40-13:50	067	Relationship Between Chlorophyll Content and Spad Values in Two Cultivars of Fig (*Ficus carica* L.)	Zulias Mardinata Zulkarnaini, Siti Zaharah Sakimin, Mahmud Tengku Muda Mohamed and Hawa ZE Jaafar	Faculty of Agriculture, University Putra Malaysia, Malaysia.
28.	13:50-14:00	069	The Effect of Protected Soybean Groats and Soybean Oil as Feed Supplement on Total Gas Production	Pramono., A, M.M. Munir, M. Cahyadi, Lutojo, and E. Handayanta	Faculty of Agriculture, Universitas Sebelas Maret,
Parallel 4 Chairman: Dr. Purwanto					
29.	14:00-14:10	071	Effect of Bulb Size and Plant Spacing on Plant Growth of Union (Topo Variety)	Suwitono, Bayu, Sugiono	North Mollucas Assesment Institute For Agriculture Technology,Tidore Kepulauan city, North Mollucas
30.	14:10-14:20	109	Bio-Management of Anthracnose Disease in Chilli With Microencapsulates Containing *Bacillus Subtilis* B298	Nur Prihatiningsih, Heru Adi Djatmiko, and Erminawati	University of Jenderal Soedirman
31.	13:20-14:30	111	The Influence of Supply Chain Management to Sugarcane Farming Performance in Madura	Mokh. Rum, Dwidjono Hadi Darwanto Slamet Hartono, dan Masyhuri	Agricultural Science at Universitas Gadjah Mada Yogyakarta.
32.	14:30-14:40	114	Growth and Yield Analysis of Clones of Two Sweet Potato (*Ipomoea batatas* L.)Varieties, Biang And Awachy	Murgayanti, Anne Nuraini, Agung Karuniawan, Syariful Mubarok and Megianti Agtari	Doctoral Program of Plant Science, Faculty of Agriculture, Universitas Padjadjaran.

33.	14:40-14:50	116	Traditional Cropping Pattern and Management of Home Garden: A Lesson Learnt From Ciamis Regency, West Java Province, Indonesia	M. Siarudin	Research Institute for Technological Agroforestry Research Development and Innovation Agency Ministry of Environment and Forestry, Ciamis.
34.	14:50-15:00	118	Isolation and Characterization of Indigenous Rhizobacteria Isolated From Onion Rhizosphere in Pekanbaru Indonesia And Their In-Vitro Evaluation Against *Fusarium oxysforum* F.Sp *Cepae*	Yetti Elfina S., Hersanti, I Made Joni and Mieke Rochimi Setyawati	Faculty of Agriculture, Riau University, Pekanbaru, Riau, Indonesia
35.	15:00-15:10	119	The Effects of N-Modified Zeolites on Ammonia Volatilization and Plant Biomass in Rice Soil with Various Organic-C Contents and Water Logging Levels	Muhammad Rif'fan dan Mochammad Nazarudin Budiono	University of Jenderal Soedirman

Room: Arjuna 2

DAY 1 – Tuesday, 23 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 1 Chairman: Budi Dharmawan, PhD					
1.	15:20-15:30	004	The Role of Rural Women Schools in Increasing Income, Improving Nutrition and Food Security of Rural Families, Gezira State, Sudan	Ahmed M. Abdel Rahman	Faculty of Agricultural Sciences, University of Gezira, Wad Medani, Sudan
2.	15:30-15:40	011	Effectivity and Compatibility of Azotobacter and Bacillus For Biological Control Agent of Fusarium Wilt on Banana Seedling	Ayu Proboningrum, Hadiwiyono, Salim Widono, Sholahuddin	Faculty of Agriculture, the Universitas Sebelas Maret (UNS)
3.	15:40-15:50	012	Financial Stochastic Model to Measure Minimum Rearing Capacity Laying Hen Farms	Bambang Sumanto, Dyah Ethika N, Djeimy Kusnaman	Jenderal Soedirman University
4.	15:50-16:00	018	System Dynamic Modelling of Agriculture Land Availability	Dwi Aulia Puspitaningrum	Faculty of Agriculture, University of Pembangunan Nasional (UPN)"Veteran"
5.	16:00-16:10	025	Identification of Potential Locations and Factors For Coffee Agro-Industry Development in Argopuro Mountain Area Jember	Fresty Nurmala Sari, Nita Kuswardhani, Yuli Wibowo	Agricultural Technology Faculty, University of Jember
6.	16:10-16:20	027	The Community Economic Recovery: Challenging on Restructuring Community's Livelihood on Primary Production of Post Tsunami In Aceh	Irfan Zikri, Agussabti, Elly Susanti	Faculty of Agriculture Syiah Kuala University, Banda Aceh.
7.	16:20-16:30	030	Analysis of Relationship between Production Factors of Citra Water Apple Business in Hamlet Ii Paya Salit, Langkat District	Julia Marisa and Sukma Aditya Sitepu	Faculty of Agriculture, Pembangunan Panca Budi University
8.	16:30-16:40	035	Scenario Strategy of Sustainable Directive Policy Cattle-Ruminansia-Slaughterhouse	Maya Dewi Dyah Maharani	State Civil Apparatus of Bogor City
9.	16:40-16:50	035	Profitability of Pomato and Tomato Intercropped with Some Winter Vegetables	Md. Abdul Mannan	Agrotechnology Discipline, Khulna University, Khulna, Bangladesh,
10.	16:50-17:00	038	Achieving Sustainable Agriculture Through by	Mustapit, Subekti, S., Sunartomo, A.F., & Rokhani	University of Jember, Indonesia

			Enhancing Agricultural Extension Institution		
11.	17:00-17:10	040	Development of Tertiary Irrigation Management in Gumbasa Irrigation Area, Sigi, Central Sulawesi, Indonesia	Jabal Tarik Ibrahim, Nugroho Tri Waskitho, Sitti Rahma Ma'mun, Ary Bakhtiar	Faculty of Agriculture and Animal Husbandry, University of Muhammadiyah Malang
12.	17:10-17:20	041	Evaluation of Irrigation System Intangible Assets in Jombang Regency, East Java, Indonesia	Nugroho Tri Waskitho, Jabal Tarik Ibrahim, Dyah Erny Widiyastuti, Ary Bakhtiar	Faculty of Agriculture and Animal Husbandry, University of Muhammadiyah Malang
13.	17:20-17:30	045	Marketing Channel Efficiency of Robusta Coffee in Argopuro Mountain Area, Jember Regency	Ratnawati, Nita Kuswardhani, Ida Bagus Suryaningrat, Joko Sumarno	Technology Faculty, Universitas Jember
DAY 2 – Wednesday, 24 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 2 Chairman: Dr. Djeimy Kusnaman					
14.	10:30-10:40	055	Impact of Sugar Import on Sugarcane Production and Domestic Sugar Prices	Safrida, Sofyan, Adawiya Taufani, Irfan Zikri	Faculty of Agriculture Syiah Kuala University, Banda Aceh
15.	10:40-10:50	056	Analysis of Relationship Between Production Factors	Sukma Aditya Sitepu and Julia Marisa	Faculty of Sains and Technology, Pembangunan Panca Budi University
16.	10:50-11:00	062	Economic Aspects of Soybean Farming Sustainability	Wiludjeng Roessali, Titik Ekowati, Edy Prasetyo and Mukson	Faculty of Animal and Agricultural Sciences, Diponegoro University
17.	11:00-11:10	066	Study on Food Habits and Local Concept of Household Food Security The Case of Fishery	Zulfanita, Istiko Agus W, Hanung Dhidhik, Budi Setiawan	Universitas Muhammadiyah Purworejo
18.	11:10-11:20	073	The Influence of The Image of Chocolate Origin (Domestic and Imported)	B S Muhammad, D Maulana-Riduwan, D Hunaefi	Department of Food Science and Technology, Bogor Agricultural University
19.	11:20-11:30	077	The Replanting of Smallholders_ Palm Oil Plantation	Ira Wahyuni Syarfi, Melinda Noer, Ami Sukma Utami	Agriculture Faculty of Andalah University
20.	11:30-11:40	079	The Reasons Why Farmers Not to Adopt Sri (System of Rice Intensification) as	Poppy Arsil, Ardiansyah, Sidharta Sahirman, Hety	Agricultural Department, Jenderal Soedirman University

			Sustainable Agricultural Practices	Handayani Hidayat	
21.	11:40-11:50	082	Negotiation Strategies among Stakeholder on *Lygodium circinnatum* Marketing in Lombok and Bali	Rubangi Al Hasan, I Wayan Widyana Susila	Research and Development Institute of Non Timber Forest Product Technology West Lombok, West Nusa Tenggara
22.	11:50-12:00	087	Factors Affecting Entrepreneurial Intentions among Beef Cattle Farmers	Sutrisno Hadi Purnomo, Endang Tri Rahayu, Ayu Intan Sari, Shanti Emawati	Faculty of Agriculture, Universitas Sebelas Maret
	12:00-13:00	**Lunch**			
Parallel 3 Chairman: Akhmad Rizqul K., M.Sc.					
23.	13:00-13:10	088	Evaluation of Supply Chain Management Model of Organic Lettuce Produced in Rural Areas	Suyono, Budi Dharmawan, Agus Sutanto, Mujiono, Tarjoko	Agricultural Faculty, Jenderal Soedirman University
24.	13:10-13:20	090	Factors Affecting Local Food Purchasing Behaviour: A Conceptual Framework	Poppy Arsil, Ardiansyah, Tri yanto	Agricultural Department, Universitas Jenderal Soedirman
25.	13:20-13:30	095	Functional Identity and Food Security on Batu's Apple Farmers	Drajat Tri Kartono	Department of Educational Sociology And Anthropology, Universitas Sebelas Maret
26.	13:30-13:40	097	Adaptation Capacity and Food Security of Fishermen_S Household	Budi Setiawan, Zulfanita, Istiko AW, Hanung Dhidhik	Universitas Muhammadiyah Purworejo
27.	13:40-13:50	102	Technological Capability and Business Success: The Mediating Role of Innovation	Endah Rahayu Lestari dan Friska Lutfiana Ardianti	Faculty of Agricultural Technology, Universitas Brawijaya,
28.	13:50-14:00	113	Food Consumption Pattern of Poor Household in Cilongok Sub District, Banyumas Regency	Alpha Nadeira M. and Altri Mulyani	Faculty of Agricultural, Jendral Soedirman University
Parallel 4 Chairman: Alpha Nadeira, MP					
29.	14:00-14:10	108	Development Strategy of Village Owned Enterprises (Bumdes) Mitra Sejahtera: A Case in Cibunut Village Argapura District of Majalengka	Jaka Sulaksana	University of Majalengka
30.	14:10-14:20	112	A Model Framework for Assessing The Risks in The Agri-Food Supply	S. Anwar	Department of Agro-industrial Logistic

			Chain: A Comparison of The Fuzzy Bow-Tie Analysis and Bayesian Network Approach		Management, Polytechnic of ATI Padang, Padang, Indonesia
31.	13:20-14:30	131	The Influence of Entrepreneurship Characteristics and Competence on Farmers' Entrepreneurial Intention in The Border Region of North Borneo	Ahmad Mubarak, Irham, Jangkung H.M., and Slamet Hartono	Agriculture Faculty of Tarakan Borneo University
32.	14:30-14:40	139	Adoption Behavior of True Shallot Seed Technology and The Factors Which Its Influence in Central Java	Wiludjeng Roessali, Endang Dwi Purbayanti, Tutik Dalmiyatun	Faculty of Animal and Agricultural Sciences, Diponegoro University
33.	14:40-14:50	147	Efficiency of Organic Rice Semi Organic with Translog Stochastic Frontier Analysis in Bantul Indonesia	Nur Rahmawati and Triyono	Departement of Agribusiness Universitas Muhammadiyah Yogyakarta,
34.	14:50-15:00	151	Rice Farmers Perception Toward Farm Cards Utilization in Pekalongan	Susanawati, Indardi, Amalia Widya Pangestika	Faculty of Agriculture, Universitas Muhammadiyah Yogyakarta
35.	15:00-15:10	160	Formulation of Protection Policy for Sustainable Food Land Agriculture	Wahyuningrat, Tenang Haryanto, Slamet Rosyadi, Mite Setiansah	Jenderal Soedirman University

Room: Arjuna 3

DAY 1 – Tuesday, 23 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 1 Chairman: Condrowibowo, PhD					
1.	15:20-15:30	008	Chemical Quality of Sheep Meat on Longissimus Dorsi Muscles With Addition of Saponification of Animal and Vegetable Oil in Ration	A. K. Wati, S. D. Widyawati, W.P.S. Suprayogi, J. Riyanto	Faculty of Agriculture, Universitas Sebelas Maret
2.	15:30-15:40	009	The Use of Saponification of Animal And Vegetable Oils in The Ration on The Physical Quality of Sheep Meat on Biceps Femoris Muscles	J. Riyanto, S. D. Widyawati, W.P.S. Suprayogi, A. K. Wati	Faculty of Agriculture, Universitas Sebelas Maret
3.	15:40-15:50	010	The Development of Taro Flour and Arrowroot Flour Snack Bar With Banana Bud Flour Supplementation as Snack for Diabetes Patients	Arighi Raka Priatama, Indah Nuraeni, Saryono	Ilmu Gizi, Universitas Jenderal Soedirman
4.	15:50-16:00	023	Identification B-Myrcene and Ar-Turmerone in Turmeric Grown in Banyumas District using Molecularly Imprinted Polymers and Quartz Crystal Microbalance Gas Sensor	Fajar Hardoyono, Kikin Windhani, Herman Sambodo, Hary Pudjianto	Faculty of Islamic Education and Teaching Sciences,Institut Agama Islam Negeri Purwokerto
5.	16:00-16:10	026	Characterization Nutritional Value Slice Jam of Tamarillo (Solanum Betaceum Cav.) and Watermelon Albedo as Complementary Food for School Childern	Indah Nuraeni, Budi Sustriawan, Atikah Proverawati	Health Science Faculty Jenderal Soedirman University
6.	16:10-16:20	036	Physical Quality Improvement of Coffee Robusta (Coffee Robusta Lindl) in Argopuro Mountains Area Jember	Muhammad Misbahudin, Nita Kuswardhani, Bambang Herry Purnomo	Agricultural Technology Faculty, University of Jember
7.	16:20-16:30	054	The Study ff Lactobacillus Acidophilus Drying Evaluation	Yudiastuti, SON, Sukarminah, Mardawati, Kastaman,	Faculty of Agriculture, Universitas Padjadjaran,
8.	16:30-16:40	068	Evaluation of Antibacterial Activity of Mangosteen	Adam Saepudin, Dedi Natawijaya, Elya Hartini, and Rahmat Iskandar	Faculty of Agriculture, Siliwangi University

9.	16:40-16:50	070	Glycaemic Index of Ten Indonesian Rice Cultivars	Florentina Kusmiyati, Dwi Retno Lukiwati, Budi Adi Kristanto and Bagus Herwibawa	Faculty of Animal and Agricultural Sciences, Diponegoro University
10.	16:50-17:00	078	The Type snd Distribution of Sap Preservatives Used By Farmers in Kebasen District	Karseno and Tri Yanto	Department of Agriculture Technology, Jenderal Soedirman University
11.	17:00-17:10	092	Breakfast Development Based on Jack Bean snd Analysis of Physical	Rifda Naufalin, Friska Citra Agustia, and Fadhila Hapsari	Departement of Agricultural Technology, Jenderal Soedirman University
12.	17:10-17:20	101	Date Seeds (*Phoenix dactylifera L*.) Consumption as Anti-Inflammatory And Immunostimulant: A Systematic Review	Saryono	Faculty of Health Sciences University of Jenderal Soedirman,
13.	17:20-17:30	115	Effect of Liquification Time and Enzyme Addition on Liquid Sugar Production From Sorghum By Enzymatic Hydrolysis	Kirana S. Sasmitaloka, A.B. Arif, and C. Winarti	Indonesian Center for Agricultural Postharvest Research and Development, Bogor, Indonesia
DAY 2 – Wednesday, 24 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 2 Chairman: Erminawati, PhD					
14.	10:30-10:40	122	Influence of Different Extraction Methods on Physic-Chemical Characteristics and Chemical Composition of Coconut Oil (*Cocos nucifera* L.)	Ibrahim, A.I, Sarifah Nurjanah, Ade M. Kramadibrata, Rifda, Naufalin, Erminawati, and Hidayah Dwiyanti	Faculty of Agriculture, Omdurman Islamic University, Khartoum, Sudan
15.	10:40-10:50	127	Flakes Rich in Antioxidant of Jackfruit King Whole Banana *(Mussa Paradica)* and Red Bean Sprout as an Alternative Breakfast for Obesity	Hery Winarsi, Fathurrahmi Ichwan Alduaira, and Adi Amurwanto	Faculty of Health Sciences, University of Jenderal Soedirman,
16.	10:50-11:00	132	Quality of Potato Chips as Affected by Application of Edible Coating with Variation on Sorbitol Concentration	Condro Wibowo	Faculty of Agriculture, University of Jenderal Soedirman
17.	11:00-11:10	137	Application of Red Beetroot Powder as Natural Antioxidant on Chicken Sausage	Swastike W, Suryanto E., Rusman, and Jamhari	Department of Animal Science, Sebelas Maret University

18.	11:10-11:20	148	Mechanical and Barrier Properties of Tapioca Starch/Kappa Carrageenan-Based Biocompiste Film Incorporated With Coconut Crabs Chitosan Nano Fiber	Hamidin Rasulu, I Made Joni, Danar Praseptiangga, and Ari Handono Ramelan	Post Graduate Student of Agricultural Doctor Program Sebelas Maret University
19.	11:20-11:30	150	Viability of Lactic Acid Bacteria and Quality of Probiotic Cocoghurt Produced By The Variation Of Skim Milk using Starters *Lactobacillus Casei* Subsp. *Casei* R-68 And S*treptococcus Thermophilus*	Usman Pato, Yusmarini Yusuf, Ivan Pratama Panggabean, Nurul Putri Handayani, Nadia Adawiyah and Arif Nanda Kusuma	Faculty of Agriculture, Universitas Riau
20.	11:30-11:40	173	Partial Purification and Characterization of Cellulase Enzyme from Snail	Isna Rahma Dini, Fajar Restuhadi, Khaira Silaturahmi	Faculty of Agriculture, Universitas Riau
21.	11:40-11:50	175	Utilization of Extract Flour in Sirih Leaves	Hayati Soeprapto, Hadi Pranggono, Pudjiati Syarif	Faculty of Fisheries, Pekalongan University
22.	11:50-12:00	153	Quality Function Deployment in Virgin Coconut Oil Soap Design	Ervina Mela, Nur Aini, Karseno, Mustaufik, Ardiansyah, Indah Setyawati	Faculty of Agriculture, Universitas Jenderal Soedirman
	12:00-13:00	**Lunch**			
Parallel 3 Chairman:Dr. Ervina Mela Dewi					
23.	13:00-13:10	178	Antioxidant Activity of Microencapsulated Lemongrass (*Cymbopugon citratus*) Extract	Erminawati, Rifda Naufalin, Ike Sitoresmi, Wuryatmo Sidik, Nandarose Rucki and Afan Bachtiar	University of Jenderal Soedirman,
24.	13:10-13:20	179	Edible Coating Application of Kecombrang Leaves to Reduce Gourami Saussage Damage	Nurul Latifasari, Rifda Naufalin and Rumpoko Wicaksono	Faculty of Agriculture, Jenderal Soedirman University
25.	13:20-13:30	180	Antimicrobial Edible Coating Application of Kecombrang Flower Concentrate to Reduce Microbial Growth on Gouramy Fish Sausage	Frida Arina Putri, Rifda Naufalin and Rumpoko Wicaksono	Faculty of Agriculture, Jenderal Soedirman University
26.	13:30-13:40	181	Edible Coating Application on Concentrate Kecombrang Leaves Addition to Quality of Gouramy Fish Fillet	Muna Ridha Hanifah, Rifda Naufalin and Rumpoko Wicaksono	Faculty of Agriculture, Jenderal Soedirman University
27.	13:40-13:50	072	Growth of Papaya Cv. Callina Seedlings on	Diajeng Tiara Prajwalita, Slamet	Agricultural Faculty, The

			Four Types of Planting Media	Rohadi Suparto and Budi Prakoso	Jenderal Soedirman University
28.	13:50-14:00	075	Indirect Effects of Bio-Based Nutrient on Aboveground Community Structure.	Dina Wahyu Trisnawati	Faculty of Agriculture, Universitas Muhammadiyah, Yogyakarta
Parallel 4 Chairman: Dr. Rumpoko Wicaksono					
29.	14:00-14:10	076	Climate Change Adaptation and Mitigation Strategy Through Submergence Tolerance in Rice.	H L Susilawati and P Setyanto	Indonesian Agricultural Environment Research Institute, Pati, Central Java, Indonesia
30.	14:10-14:20	080	Growth and Yield of Sorghum as Affected By Fertilizer at Three Locations.	Puji Harsono, Nanik Setyowati & Prasetyo	Agriculuter Faculty of Sebelas Maret University
31.	13:20-14:30	121	Study of Interaction between Genetic Source, Harvest Time, and Storage Time in Some Mutant Varieties of Sweet Sorghum in Order to Support Future Bioindustry Development	Amin Nur, Karlina Syahruddin, and Roy Efendy	Balai Penelitian Tanaman Serealia, Maros
32.	14:30-14:40	124	Effects of Media, Plant Growth Regulator And Polyamine on In Vitro Anther Culture of *Citrus reticulata*	Prita Sari Dewi, Ponendi Hidayat, Ida Widiyawati, and Nikmatul Qori'ah	Faculty of Agriculture Jenderal Soedirman University, Indonesia
33.	14:40-14:50	125	Efforts to Improve The Growth of Longan Plant Grafting *(Dimocarpuslongan*lour.*)* in Indonesia With Application of Fertilizer	Etik Wukir Tini, Prasmaji Suistyanto and Rr. Pudji Hastuti Purwantini	Faculty of Agriculture Jenderal Soedirman University, Indonesia
34.	14:50-15:00	129	The Combination of Bioslurry and Liquid Nano-Silica Based on Rice Husk Waste on Brown Rice (*Oryza nirvara* L.)	Nur Fathurahman Ridwan, Gilang Vaza Benatar, and Yeyet Nurhayati	Master of Biotechnology, Graduate School, Universitas Gadjah Mada
35.	15:00-15:10	130	The Effects of Combinations of NH_4^+- and H^+-Saturated Zeolites on Phosphate Rocks Dissolution and Nh_4^+ Release Pattern	Mochammad Nazarudin Budiono and Peter van Straaten	Faculty of Agriculture, Jenderal Soedirman University; School of Environmental Science, University of Guelph, Canada

Room: Arjuna 4

DAY 1 – Tuesday, 23 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 1 Chairman: Ardiansyah, Ph.D					
1.	15:20-15:30	005	Phytotoxic Effects of Biologically Treated And Untreated Wastewater From Pulp-And-Paper Industry on Germination and Growth of Brassica Campestris	Sadat Mazhar and Allah Ditta	Department for Innovation in Biological, Agro-food and Forest Systems, University of Tuscia, Viterbo, Italy; School of Biological Sciences, The University of Western Australia
2.	15:30-15:40	015	Readiness of Farmer Institutions in Facing Environmental Disruption: The Case of The Participation Of Farmer Water-Users in Maintaining Trash-Polluted Irrigation, Indonesia	Dede Sulaeman, Sigit Supadmo Arif, Sudarmadji	Post Graduate School, Gadjah Mada University, Yogyakarta
3.	15:40-15:50	039	Supply Chain Risk Potensial of Smallholder Robusta Coffee Farmers in Agropuro Mountain Area	Novita Fitri Yulian, Nita Kuswardhani	Agricultural Technology Faculty, Universitas Jember
4.	15:50-16:00	061	Effects of LCC Mucuna Bracteata on Soil Physical Characteristic	Wawan	Faculty of Agriculture, Universitas Riau
5.	16:00-16:10	083	Measuring The Coefficient of Unit Surface Conductance of Steel Balls For Non Cooking Oil Frying Application	Siswantoro, and Agus Margiwiyatno	Faculty of Agriculture, Jenderal Soedirman
6.	16:10-16:20	098	Using of Gendruwo Waste (Sterculia Foetida Linn.) as Briquettes	Endang Yuniastuti, Marshelina Noor Indah Delfianti	Faculty of Agriculture, Sebelas Maret University
7.	16:20-16:30	105	Identification of Diseases in Strawberry Leaves Using Image Processing Technique and Ensemble Neural Networks	Susanto B. Sulistyo, Krissandi Wijaya, Purwoko H. Kuncoro, Rostaman, Wai Lok Woo	Faculty of Agriculture, Jenderal Soedirman University, Indonesia; Newcastle University, UK
8.	16:30-16:40	120	Effect of Mulches-Fertilizers Application on Soil and Nutrient Losses Over Biochar Applied Potato Land Under Horizontal Ridge System	Krissandi Wijaya and Purwoko Hari Kuncoro	Faculty of Agriculture, Jenderal Soedirman University,

					Purwokerto, Indonesia
9.	16:40-16:50	134	Comparison of Methodologies for Moisture Determination in Hard Corn (Zea Mays L.)	Héctor Abel Palacios Cabrera, Daniela Monserrat Villamarin Rodríguez, Wilson Vásquez Castillo and Jose Sergio Velasquez Carrera	Universidad de Las Américas, Ecuador
10.	16:50-17:00	135	Comparison of Moisture Methods in Two Varieties of Corn, Morocho and Soft Corn (Zea Mays L.)	Héctor Abel Palacios Cabrera, Daniela Monserrat Villamarin Rodríguez, Wilson Vásquez Castillo and Jose Sergio Velasquez Carrera	Universidad de Las Américas, Ecuador
11.	17:00-17:10	145	Consentration of Cao Catalyst From Chicken Eggshell In ransesterification Process of Pangi Seed Oil Biodiesel	Farida Hanum Hamzah	Agriculture Faculty of Riau University
12.	17:10-17:20	159	Mapping of Water Catchment Areas	Lis Noer Aini, Syifa Marya Ulfah, Bambang Heri Isnawan	Faculty of Agriculture Universitas Muhammadiyah Yogyakarta
13.	17:20-17:30	163	Spatial and Temporal Change of Rainfall Pattern	Nuzul Hijri Darlan, Bayu Dwi Apri Nugroho, Sigit Supadmo Arif , and Putu Sudira	Faculty of Agricultural Technology, Universitas Gadjah Mada, Yogyakarta, Indonesia
DAY 2 – Wednesday, 24 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 2 Chairman: Poppy Arsil, PhD					
14.	10:30-10:40	002	Erosion and Surface Runoff From Forest and Oil Palm Plantation in Jalemu Watershed, Gunung Mas Regency, Central Kalimantan Province	Adi Jaya, Cakra Birawa, Fengky F. Adji, Mochamad Anwar	Faculty of Agriculture, The University of Palangka Raya,
15.	10:40-10:50	166	Time Based Automatic System of Drip and Sprinkler Irrigation	Arief Sudarmaji, Sidharta Sahirman, Saparso, and Yogi Ramadhani	Agricultural Engineering, Jenderal Soedirman University
16.	10:50-11:00	167	Radiation Interception and Biomass Growth in Plant-Factory System	Ardiansyah, Eni Sumarni, Sidharta Sahirman	Agricultural Engineering, Jenderal

					Soedirman University
17.	11:00-11:10	169	Performance of Reverse Flow Biodiesel Reactor in The Production of Biodiesel	Furqon, Arief Kelik Nugroho , Rahmat Yulianto, Rd. Novan Amarta	Agricultural Engineering, Jenderal Soedirman University
18.	11:10-11:20	171	Design and Analysis of Technoeconomic of Corn Dryer With Re-Heating System For Farmer's Scale	Ropiudin, Siswantoro, Krissandi Wijaya, Masrukhi, Purwoko Hari Kuncoro, Susanto Budi Sulistyo, Arief Sudarmaji, and Furqon	Agricultural Engineering, Jenderal Soedirman University
19.	11:20-11:30	044	In Vitro Shoot Initiation of Onion with Various Concentrations of Seaweed Extract (*Caulerpa* Sp) and Benzylaminopurine	Ramal Yusuf, Zainuddin Basri, Hawalina Kasim, Aristan Sahirdin, Abdul Syakur, Yulianti Kalaba and Paul Kristiansen	Faculty Agriculture University Tadulako
20.	11:30-11:40	046	In Vitro Evaluation of Some Homeopathic Medicines Against *Colletotrichum musae* Causal Agent of Anthracnose of Banana	M.R. Islam, S. Hoque and A.K. Ghosh	Agrotechnology Discipline, Khulna University, Bangladesh
21.	11:40-11:50	047	Pollinator Diversity and Soybean Productivity with Flowering Plant (Crotalaria and Rosella)	Sholahuddin,Retno Wijayanti Retna Bandriyati A, Supriyadi, Dhealaras Widyaningrum	Agricultural Faculty Sebelas Maret University Surakarta
22.	11:50-12:00	048	Brown Plant Hoppers Population in Some Local Rice Varieties Based on Sellulosa, Hemicellulosa And Lignin Content	Retno Wijayanti, Sholahuddin, Supriyadi, SH Poromarto	Post graduate Programe , Faculty of Agriculture UNS
	12:00-13:00	**Lunch**			
Parallel 3 Chairman: Arief Sudarmaji, Ph.D					
23.	13:00-13:10	081	The Antioxidant Activity and Plant Growth Inhibitory Activity of Purple Dioscorea Alata Powder.	Ratnaningsih, Sakae Suzuki, Yoshiharu Fujii	Indonesian Center for Agricultural Postharvest Research and Development, Bogor
24.	13:10-13:20	086	Agronomic Performance of F4 Population of Rice Breeding Lines Derived From The Cross of Black Rice	Suprayogi, Mei Ary Praptiwi, Ahmad Iqbal, Tri Joko Agustono	Faculty of Graduate Studies, Jenderal Soedirman University
25.	13:20-13:30	089	*Trichoderma* Sp. on Shallots on The Coastal Sandy Land	Tuti Setyaningrum, Didik Indradewa, Achmadi	Agriculture Faculty, University of

				Priyatmojo, Endang Sulistyaningsih	Pembangunan Nasional "Veteran"
26.	13:30-13:40	091	Identification of The Ultisol Land Indigenus Bacteria from Banyumas Regency	Sapto Nugroho Hadi, Prita Sari Dewi, Kartini	Faculty of Agriculture, Jenderal Soedirman University
27.	13:40-13:50	093	The Influence of Fruit Thinning on Fruit Drop and Quality of Citrus	Sakhidin, Anung Slamet Dwi Purwantono, and Slamet Rohadi Suparto	Faculty of Agriculture, Jenderal Soedirman University
28.	13:50-14:00	094	The Mutants Short-Stemmed Selection of M4 Generation "Mentik Susu" Rice	Mutiara Ferisia Saweho, Ahmad Yunus, Edi Purwanto	Agriculture Faculty, Universitas Sebelas Maret
Parallel 4 Chairman: Afik Hardanto, Ph.D					
29.	14:00-14:10	133	Molecular Analysis of Pathogen Bacterial Leaf Blight (*Xanthomonas oryzae* Pv. *oryzae*) and Resistance Gene Detection to Bacterial Leaf Blight of Local Rice Varieties (Oryza Sativa) in Situbondo and Jember	Rasmiyana, Hardian Susilo Addy, and Erlia Narulita	Magister Biotechnology, Jember University,
30.	14:10-14:20	138	The Percentage of Haploid Embryos Resulting from The Crossing of Two White-Seeded Genotypes with Three Dark-Seeded Genotypes of Maize	Sutoyo, Benni Satria, and Rezi Arselfi	Faculty of Agriculture, Andalas University
31.	13:20-14:30	149	Application of Organic Fertilizer and Microbial Agents to Reduce Inorganic Fertilizer on Plant Growth and Yield of Rice in Sri (System Of Rice Intensification)	Yugi R. Ahadiyat, Tri Harjoso	Faculty of Agriculture, Universitas Jenderal Soedirman
32.	14:30-14:40	152	Growth, Nitrate Reductase Activity and Chlorophyll of Peanuts	Endang Dwi Purbajanti, Widyati Slamet, Eny Fuskhah	Faculty of Animal and Agricultural Sciences, Diponegoro University
33.	14:40-14:50	155	Intercropping of *Zingiber officinale var. amarum* on Teak Silviculture	Aris Sudomo, Gerhard. E Sebastian, Diana Prameswari and James M. Roshetko	Agroforestry Research and Development Center-Environmental and Forestry Ministry; World Agroforestry Center-ICRAF

34.	14:50-15:00	156	Organic Palm Frond Fertiliser (OPFF) Improved The Growth	Ikhsan Hasibuan, Sunarti and Sarina	Faculty of Agriculture, University of Hazairin
35.	15:00-15:10	157	Responses of Three Varieties of Lettuce to Nutrient Solutions	Noor Farid and Mochammad Nazarudin Budiono	Faculty of Agriculture, Jenderal Soedirman University

Room: Arjuna 5

DAY 1 – Tuesday, 23 October 2018					
No	**Time**	**Paper ID**	**Title**	**Authors**	**Affiliation**
Parallel 1 Chairman: Sidharta Sahirman, PhD					
1.	15:20-15:30	020	The Local Potential-Based Mangrove Ecotourism Development Model that Supports Segara Anakan Agribusiness and Agriculture	Edy Suyanto, Fx. Wardiyono, Tri Wuryaningsih, Tri Rini Widyastuti, Soetji Lestari	Social and Political Sciences and Environmental Master Program Unsoed
2.	15:30-15:40	029	The Nutritional Quality of Chuck and Leg Meat Thin-Tailed Sheep Fattened with Protected Aldehyde Suplementation in The Rations	J. Riyanto, Sudibya, S.D. Widyawati, A.Fatmasar, and A.A. Tyastuti	Agriculture faculty, Sebelas Maret University,
3.	15:40-15:50	074	Effects of Five Indonesian Herbals Supplement on Milk Production	Dian Wahyu Harjanti, Fajar Wahyono and Diana Nur Afifah	Department of Animal Science, Faculty of Animal and Agricultural Sciences, Diponegoro
4.	15:50-16:00	084	Effects of Supplementation of Cellulase	Sudibya and J.Riyanto	Faculty Agriculture Sebelas Maret University
5.	16:00-16:10	085	Training Effectiveness of Beef Cattle Ration Formulation	Sudiyono , S.H. Purnomo, Suwarto, S. Emawati, A.I. Sari	Faculty of Agriculture, Sebelas Maret University
6.	16:10-16:20	126	Social Capital Analysis of Beef Cattle Breeding Based on Village Breeding Centre In Gondangrejo Subdistrict, Karanganyar District	Ayu Intan Sari, Suwarto, Endang Tri Rahayu, Shanti Emawati, and Sutrisno Hadi Purnomo	Faculty of Agriculture, Sebelas Maret University, Indonesia
7.	16:20-16:30	136	A Technique of Assessing The Status of Sustainability of Resources	Suharno, Nurul Anwar and Emmy Saraswati	Faculty of Economics and Business, Jenderal Soedirman University
8.	16:30-16:40	140	The Travel Cost Approach for The Demand Natural Tourism Object of Cipendok Waterfall	Suharno and Sudjarwanto	Faculty of Economics and Business, Jenderal Soedirman University
9.	16:40-16:50	141	Human Capital Analysis of Leather Tatah Sungging Based On Local Cultural Heritage in Sukoharjo Regency, Indonesia	Endang Siti Rahayu, Sutrisno Hadi Purnomo, Endang Tri Rahayu, Shanti Emawati, and Ayu Intan Sari	Faculty of Agriculture, Sebelas Maret University,

10.	16:50-17:00	146	Improving The Quality of Wastewater With The Addition of Liquid Probiotics Through The Implementation of Advanced Ponds Systemi Dairy Goat Farms	Rendi Fathoni Hadi, B.S. Hertanto dan A. Kusumawati	Faculty of Agricultural, Universitas Sebelas Maret
11.	17:00-17:10	161	How Do The Indonesia Beef Cattle Farmers Perceived The Concept of Animal Welfare	Siwi Gayatri, Dian Harjanti, Tutik Dalmiyatun	Diponegoro University
12.	17:10-17:20	162	Feeding Calf Starer After Bird Can Promote Calf Performance	Mukodiningsih S, J. Achmadi, F. Wahyono, T.R.Taswanda, Sugiono and J.Ohh	Faculty of Animal and Agriculture, Diponegoro University, Semarang
13.	17:20-17:30	168	Improving Production System of Beef Cattle Agribusiness	Akhmad Sodiq, Pambudi Yuwono, Yusmi Nur Wakhidati, Muahamad Raihan, Arif Mulianto	Faculty of Animal Science, University of Jenderal Soedirman
DAY 2 – Wednesday, 24 October 2018					
No	Time	Paper ID	Title	Authors	Affiliation
Parallel 2 Chairman: Dr. Suyono					
14.	10:30-10:40	170	Indicator of Supply Chain Management Performance in Small Households Agro-Industry	Dindy Darmawati Putri, Dwidjono Hadi Darwanto, Slamet Hartono, Lestari Rahayu Waluyati	Doctoral Program in Faculty of Agriculture, Gadjah Mada University
15.	10:40-10:50	176	The Ineffective Business of Dairy Farming in Banyumas District, Central Java: Lacking of Information Cause Loss in Dairy Farming	Anisur Rosyad, Triana Yuni Astuti, Ratna Satriani	Jenderal Soedirman University, Indonesia
16.	10:50-11:00	123	Strategic Ways to Develop New Variety of Upland Rice: Case Study of Inpago Unsoed 1 in Central Java, Indonesia	Budi Dharmawan, Akhmad Rizqul Karim, and Ulfah Nurdiani	Department of Agricultural Economics and Social Sciences, Jenderal Soedirman University,
17.	11:00-11:10	049	Decomposition of Chromolaena Odorata and Straw in Fresh and Composted form to Growth and Yield of Rice	Rohmatin Agustina	University of Muhammadiyah Gresik
18.	11:10-11:20	050	In Vitro Micropropagation of Banana Cultivar Raja Bulu on Media Supplemented with Coconut Water and NAA	Wiesya Kresna Bayu Ajie, Rossa Malinda , Endang Yuniastuti, Ahmad Yunus	Agriculture Faculty, University of Sebelas Maret

19.	11:20-11:30	052	Probiotic Potential and Acceptability of Growol with Varying of Cassava Varieties	Sandi Afrianto, Muhammad Akbar Suseno, Regina Puspasari Paulina and Chatarina Wariyah	Faculty of Agroindustry, Mercu Buana University of Yogyakarta
20.	11:30-11:40	053	Effectiveness of Some Clove and Citronella Oil Based-Pesticide Formula	Setyowati Retno Djiwanti, Supriadi and Wiratno	Indonesian Agricultural Agency Research and Development Indonesian Spice and Medicinal Crop Research Institute (ISMECRI), Plant Protection Division, Bogor, Indonesia
21.	11:40-11:50	058	The Effect of Crotalaria Juncea in Coffee Ecosystem to Diversity of Insect Predators and Parasitoides	Supriyadi, Retno Wijayanti, Retna Bandriyati Arniputri, Nuri Estiy Fadho, Nurhayati Puspitarini	Agriculture Faculty, University of Sebelas Maret
22.	11:50-12:00	059	Compost and Micoryza Arbuskula Onthe Growth of Artemisia Annua in Middle Land	Yosi Putri Purwadi , Vita Tjandra, Dwi Harjoko, Ahmad Yunus	Agriculture Faculty, University of Sebelas Maret
	12:00-13:00	**Lunch**			
Parallel 3 Chairman: Dr. Saparso					
23.	13:00-13:10	096	The Effect of Concentration Nanosilica Fertilizer	Tety Suciaty, Supriyadi, Amalia T. Sakiya	Department of Agricultural Science, graduate school of Sebelas Maret university
24.	13:10-13:20	099	Growth and Development of Pigeon Pea	Elizabeth Windy Gitiara, Endang Yuniastuti, Nandariyah	Faculty of Agriculture UNS
25.	13:20-13:30	100	Propagation and Growth of Persimmon (*Diospyros kaki* L.) in Indonesia	Marshelina Noor Indah Delfianti , Endang Yuniastuti, Vita Ratri Cahyani	Faculty of Agriculture, Sebelas Maret University
26.	13:30-13:40	104	Enhanced Potatoes (*Solanum tuberosum* L.) Yield by Used Biologycal Organic Fertilizer and Soil Conservation Methods on The Slope Andisols	Tamad, L. Soesanto, and P. E. Agustin	Agriculture Faculty, The University of Jenderal Soedirman
27.	13:40-13:50	107	Evaluation of Yield Stability of Black Soybean Mutant Lines in Ten Environments	Winda Puspitasari, Tarmidzi, and Arwin	Center for Isotopes and Radiation Application,

					National Nuclear Energy Agency (PAIR, BATAN)
28.	13:50-14:00	142	The Performance of Sugar Palm (*Arenga pinnata* Merr. (Wurmb) and The Yield of Nira in Various Environmental Conditions	Rosi Widarawati, Prapto Yudono, Didik Indradewa, Sri Nuryani Hidayah Utami	Faculty of Agriculture, Universitas Jenderal Soedirman
Parallel 4 Chairman: Suprayogi, PhD					
29.	14:00-14:10	158	Morphology, Yield, Grain Quality and Mineral Contents	Heni Safitri, Buang Abdullah, Indrastuti Apri Rumanti, Sularjo, Cahyono	Indonesian Center for Rice Research,
30.	14:10-14:20	164	Observation of Root Architecture at Vegetative Stage of Drought Tolerant Rice	Untung Susanto, Wage R Rohaeni, Desi Prastika	Indonesian Center for Rice Research,
31.	13:20-14:30	165	Drought Tolerant Selection of Rice Genotypes	Untung Susanto, Wage R Rohaeni, and Nani Yunani	Indonesian Center for Rice Research,
32.	14:30-14:40	172	Screening of Fungi From Rhizosphere of Palm Plants in Peat Soil	Fifi Puspita, Isna Rahma Dini, and Dermala Sari	Faculty of Agriculture, University Riau
33.	14:40-14:50	174	Test Several Tablet Biofungicide Formulations with Active Ingredients	Fifi Puspita, Hadiwiyono, Susilo Hambeg Poromorto, Dewi Indriyani Roslim	Agriculture Science Department, Graduated School of Universitas Sebelas Maret,
34.	14:50-15:00	177	Genetic Relationships of Yardlong Bean (*Vigna unguiculata* Ssp. *sesquipedalis*) and Their F1 Progenies Based on RAPD Markers	Syaiful Anwar, Karno Karno, Florentina Kusmiyati*	Diponegoro University, Indonesia
35.	15:00-15:10	106	Composition of Planting Media and Biological Agents to Improve Physical, Chemical Properties of Soil and Lettuce (*Lactuca sativa* L.*)* Production	Kharisun, Fadillah, Mujiono, and Suciati	Agriculture Faculty, The University of Jenderal Soedirman

POSTER PRESENTATION

No	Paper ID	Title	Authors	Affiliation
1	003	Isolation and Screening of Potential Microorganism for Biofertilizers From Banana and Cassava Crop Plants Soil and Rhizosphere in Lampung	Agung Adi Nugroho, Nur Laili, Achirul Nditasari, Athoullah, Sarjiya Antonius	Laboratorium Mikrobiologi Pertanian Pusat Penelitian Biologi LIPI
2	013	The Factors Affecting of Farmer Participation in Sustainable Private Forest Management at Pajangan Sub-District, Bantul District, Special Regions Yogyakarta, Indonesia	B Widayanto, R Karsidi, Kusnandar, and J Sutrisno	Universitas Sebelas Maret (UNS)
3	032	Approach of Monocarpic Senescence Control by Nitrogen Manipulation in Mungbean and Cowpea	Md. Matiul Islam, Seijun Sakamoto, Shao-Hui Zheng	The United Graduate School of Agricultural Sciences, Kagoshima University, Japan;
4	057	Application of Amandement to Improve Nutrient Retention in The Medicinal Plant	Sulandjari, Amalia Tetrani Sakya, Jauhari Syamsiah	Agriculture Faculty, Sebelas Maret University Surakarta
5	064	Household Economics Activities of Upland Rice Farmers in Rain-Fed Farming	Wulandari Dwi Etika Rini, Mohammad Harisudin, Supriyadi, Endang Siti Rahayu	Department of Agribusiness, Universitas Pembangunan Nasional"Veteran" Yogyakarta
6	110	Taxa Status of Some Reported Plant Parasitic Nematodes in Indonesia	Setyowati Retno Djiwanti	Indonesian Agricultural Agency Research and Development Indonesian Spice and Medicinal Crop Research Institute (ISMECRI), Plant Protection Division, West Java, Indonesia