

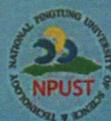


THE 2nd INTERNATIONAL CONFERENCE on FOOD, AGRICULTURE, and NATURAL RESOURCES 2016

Exploring local potential for strengthening food and energy security through sustainable agriculture and natural resources

FACULTY OF AGRICULTURAL TECHNOLOGY
BRAWIJAYA UNIVERSITY

August the 2nd - 4th 2016 | Malang - Indonesia



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LIST OF PRESENTERS

PROCEEDING THE 2ND INTERNATIONAL CONFERENCE
ON FOOD, AGRO CULTURE AND NATURAL RESOURCES 2016:

EKSPLORING LOCAL POTENTIAL FOR STRENGTHENING
FOOD AND ENERGY SECURITY THROUGH
SUSTAINABLE AGRICULTURE AND NATURAL RESOURCES
August the 2nd-4th 2016 Malang - Indonesia

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Keynote Speakers of The Plenary Session

NO.	NAME	TITLE	INSTITUTION
1	Prof. Dr. Percy E. Sajise	Biodiversity for Ensuring Food and Nutrition Security	<ul style="list-style-type: none"> • Bioversity International • SEARCA • University of the Philippines at Los Baños (UPLB)
2	Dr. Valerien Pede	The ‘New Deal’ on Climate Change and the Implications for ASEAN	International Rice Research Institute (IRRI), Los Banos, Laguna, Philippines
3	Dr. Roy Sparringa	National Policy on Food Safety and Food Security Assurance	<ul style="list-style-type: none"> • Agency for the Assessment Application and Technology • National Agency for Drug and Food Control of The Republic of Indonesia
4	Prof. Dr. Mad Nasir Shamsudin	Emergence of 3GU in Developing Economies for Food Security Enhancement	Universiti Putra Malaysia, Malaysia
5	Dr. Thanakorn Naenna	Information Integration in Supply Chain Management	Mahidol University, Thailand
6	Prof. Dr. Y.H. Taufiq-Yap	Transforming Oil Palm Biomass to Renewable Bioenergy	Universiti Putra Malaysia, Malaysia

Keynote Speakers of The Symposium on Food and Agroindustrial Management

NO.	NAME	TITLE	INSTITUTION
1	Prof. Dr. Bhesh Bhandari	New and safe product technology for sustainable fruit ripening and controlling the germination of agriculture produce	The University of Queensland, Australia
2	Prof. Dr. Jenshinn Lin	Facing Global Climate Change, Contemporary Development of Cereal Processing Technology in Taiwan	National Pingtung University of Science and Technology, Taiwan
3	Prof. Dr. Simon B. Widjanarko	Glucomannan Processing Technology	Universitas Brawijaya, Indonesia

Keynote Speakers of The Symposium on Agriculture, Energy And Environment

NO.	NAME	TITLE	INSTITUTION
1	Dr. Rosnah Abdullah	Green Energy Technology Applications towards Sustainability	Universiti Brunei Darussalam, Brunei Darussalam
2	Prof. Dr. Yo-Chia Chen	Two novel cellulase genes of a rumen fungus <i>Orpinomyces</i> sp. Y102	National Pingtung University of Science and Technology, Taiwan
3	Prof. Dr. Toshifumi Sakaguchi	Tellurium Conversion and Recovery by Marine Microbes	Prefectural University of Hiroshima, Japan

FOOD SCIENCE AND TECHNOLOGY (FS)

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
1	FS-001	Rusdah	ANTIOXIDATIVE PEPTIDE FROM TEMPE	Oral and Poster	Bogor Agricultural University (IPB)
2	FS-002	Dr. Farapti	UNDERSTANDING SODIUM AND POTASSIUM CONTENT OF COCONUT WATER AND THE ROLE AS HEALTHY FOOD	Oral	Airlangga University
3	FS-003	Dr. Wenny Bekti	CHEMOMETRIC MODELLING OF COFFEE FLAVOUR	Oral	The University of Queensland/ Brawijaya University
4	FS-004	Mohd Nazri	PHYSICOCHEMICAL AND CAROTENOID COMPOSITION OF PEELS, PULP AND ARILS OF <i>Momordica cochinchinensis</i> SPRENG FRUITS GROWN IN MALAYSIA	Oral	Universiti Malaysia Sabah
5	FS-005	Anis Khairunnisa,	THE EFFECT OF USING COMBINING ALBEDO AND AGAR POWDER FOR PHYSICOCHEMICAL OF WATERMELON FRUIT LEATHER	Flash-Oral	Bogor Agricultural University (IPB)
6	FS-006	Aryanis Mutia Zahra	CHARACTERISTICS OF WATERGLASS FROM LAMPUNG SILICA SAND VIA ALKALI FUSION WITH SODIUM HYDROXIDE AND ITS APPLICATION ON POSTHARVEST HANDLING OF TOMATO (<i>Solanum lycopersicum</i>)	Flash-Oral	Brawijaya University
7	FS-007	Satiti Kawuri Putri	RECEPTIVITY OF LAMBAK DRIED FISH AS AN ADDED VALUE OF LOCAL PRODUCTS OF JAMBI	Flash-Oral	Bogor Agricultural University (IPB)
8	FS-008	Diah Nuri	PERFORMANCE TEST OF "DEEPTECH MACHINE" WITH DEEP FAT FRYING TECHNOLOGY FOR FISH SHREDDED	Flash-Oral	Universitas Brawijaya
9	FS-009	Rima Ayu Disca Yulinda	STUDY OF NUTRIENT CHARACTERISTICS, ANTI NUTRITIONAL FACTOR AND ANTIOXIDANT ACTIVITY IN PEELED SWORD BEAN (<i>Canavalia gladiata</i> L.) USING VARIOUS PRE-TREATMENT	Oral and Poster	Bogor Agricultural University (IPB)
10	FS-010	Muhammad Alvian_ Sheisa Fitria Saverina	GO BABY HEALTH" THE PREVENTION MOVEMENT AND BAD NUTRITION REHABILITATION FOR TODDLERS THROUGH SOPAN COMBINATION (SOCIALIZATION AND AWARENESS) AND PMT-P (ADDITIONAL RECOVERY FOOD AND COMPLEMENT FOOD) IN NGBERUK VILLAGE, SUMBERPUCUNG SUB-DISTRICT, MALANG DISTRICT	Flash-Oral	Universitas Brawijaya
11	FS-011	Dr. Endang Noerhartati	FLAKE SORGHUM (<i>Sorghum sp</i>): STUDY ON TYPE AND CONCENTRATION OF SORGHUM FLOUR	Oral	University of Wijaya Kusuma Surabaya
12	FS-012	Dr. Pavalee Chompoorat	DEVELOPMENT OF HIGH NUTRITION AND FUNCTIONAL CUPCAKE FOR OLDER ADULTS	Oral	Maejo University - Thailand
13	FS-013	Dr. Alwani Hamad	THE USE OF BAY-LEAF ESSENTIAL OIL AS RAW CHICKEN'S NATURAL PRESERVATIVE	Oral	University of Muhammadiyah Purwokerto
14	FS-014	Alif Ummami	PRODUCTION OF OMEGA 3 AND OMEGA 6 FROM FERMENTATION PROCES OF OVERRIPE BANANA WASTE USING <i>Rhodotorula Glutinis InaCC y110</i>	Flash-Oral	Universitas Brawijaya
15	FS-015	Ana Fairuza Fajriana	THE EFFECT OF BRAN AND MSG (<i>MONOSODIUM GLUTAMATE</i>) ADDITION TO PRODUCE RED PIGMENTS AND LOVASTATIN OF ANGKAK ON RICE IR 64	Flash-Oral	Universitas Brawijaya
16	FS-016	Ahfad Ulhidayati	MICROALGAE <i>Nannochloropsis sp.</i> EXPLORATION IN SUPER FOOD PRODUCTION IN SINGLE CELL PROTEIN FORM AS AN ALTERNATIVE FUNCTIONAL FOOD SOURCE TO OVERCOME MALNUTRITION AND FOOD INSECURITY IN INDONESIA USING TOFU WASTE	Flash-Oral	Universitas Brawijaya
17	FS-017	Ikhtiar Eka Prasetyani	EXTRACTION AND ENCAPSULATION OF BUTTERFLY PEA (<i>Clitoria ternatea</i>) PETALS IN CROSS-LINKED ALGINATE MATRICES BY COACERVATION TECHNIQUE	Flash-Oral	Universitas Brawijaya
18	FS-018	Mas Wisnu Aninditya	SYSTEM DESIGN OF YOGHURT BIOREACTOR CONTROL USING DS18B20 SENSOR AND E201C9 pH TYPE WITH FUZZY METHOD	Flash-Oral	Universitas Brawijaya

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
19	FS-019	Sulistya Eka Putri	UPGRADING NUTRITIONAL STATUS AND IMAGE OF TRADITIONAL FOOD CENIL WITH INGREDIENT AND SHAPE REFORMULATION	Flash-Oral	Universitas Brawijaya
20	FS-020	Ahmad Habib Elfikri	OSMOTIC SALTED EGG MAKER TECHNOLOGY, SALTED TOOL-BASED EGG OSMOSIS AS SOLUTION INCREASES EFFECTIVENESS AND EFFICIENCY OF THE SALTING PROCESS	Flash-Oral	Universitas Brawijaya
21	FS-021	Haniful Razi and Fajriyana	"CENDOK BESI" (WATER HYACINTH AND TREMBESI) ANTI MICROBIAL BASED-MODERN CATERING FOOD PACKAGING INNOVATION	Flash-Oral	Universitas Brawijaya
22	FS-022	Dr. Umi Purwandari	TEXTURAL AND COOKING CHARACTERISTICS OF GLUTEN FREE NOODLES MADE FROM FLOUR OF UN-GERMINATED OR GERMINATED YELLOW PEA OR CHICKPEA	Oral	Universitas Trunojoyo
23	FS-023	Maria Florencia Puspitasari Schonherr	CRESPATECH-CRACKED EGG SEPARATOR AND PASTEURIZATION TECHNOLOGY, APPLICATION EGG PASTEURIZATION TECHNOLOGY TO INCREASE PRICE OF CRACKED EGG AT UKM GALIH PUTRA, TLEKUNG VILLAGE, JUNREJO, BATU CITY	Flash-Oral	Universitas Brawijaya
24	FS-024	Prof. Chanif Mahdi	DETECTION OF ILLGEL FOOD ADDITIVES IN VARIOUS MATERIALS OF FOOD AND SEAFOOD PRODUCTS WITH QUICK TEST SPOT METHOD AND NEGATIVE EFFECT TO THE HUMAN BODY	Oral	Universitas Brawijaya
25	FS-025	Dr. Herlina Marta	PRODUCTION AND CHARACTERIZATION OF MALTODEXTRIN FROM CORN STARCH BY ENZYMATIC HYDROLYSIS METHOD	Oral	Universitas Padjadjaran
26	FS-026	Dr. Iwan Taruna	EXPERIMENTAL COATING OF TANGERINE FRUITS USING TAPIOCA GEL IN A VARIETY OF STORAGE TEMPERATURES	Poster	University of Jember
27	FS-027	Dr. Tita Rialita	EFFECT OF OZONATION ON MICROBIAL POPULATION AND SENSORY CHARACTERISTICS OF WHOLE AND FRESH-CUT CARROTS DURING STORAGE	Oral	Universitas Padjadjaran
28	FS-028	Dr. Endrika Widyastuti	PRETREATMENT OPTIMIZATION AND CHARACTERIZATION OF GELATIN FROM YELLOWFIN TUNA (<i>Thunnus albacares</i>) BONE	Oral	Universitas Brawijaya
29	FS-029	Dr. Hardoko	FUNCTIONAL DRINK COUGH DEDUCTION OF KARUK LEAVES (<i>Piper sarmentosum</i> Roxb. ex Hunter), LIME (<i>Citrus aurantifolia</i> Swingle) JUICE AND HONEY	Poster	Universitas Pelita Harapan - Tangerang
30	FS-030	Dr. Nurul Isnaini Fitriyana	ENCAPSULATION OF ANTIOXIDANT FROM COFFEE CHERRIES EXTRACT USING ARABIC GUM COMBINED WITH OXIDIZED TAPIOCA AS ENCAPSULAN MATERIAL : APPLICATION ON KLENTIK OIL	Oral	University of Jember
31	FS-031	Dr. Suttioporn Pinijsuwan	DEVELOPMENT OF OPTICAL BIOSENSOR FOR OCHRATOXIN A DETECTION USING PEPTIDE PROBE AND AU-BALL LABEL	Oral	Mae Fah Luang University - Thailand
32	FS-032	Dr. Sudarma Dita Wijayanti	A SIMPLE AND RAPID PAPER-BASED ENZYME BIOSENSOR FOR DETECTION OF RESIDUAL PENICILLIN IN FOOD	Oral	Universitas Brawijaya
33	FS-033	Dr. Jaya Mahar Maligan	ACUTE TOXICITY TEST (LD ₅₀) OF MARINE MICROALGAE <i>Tetraselmis chuii</i> ETHANOLIC EXTRACT AGAINST WISTAR RATS LIVER	Oral	Universitas Brawijaya
34	FS-034	Dr. Nur Aini	QUALITY DETERIORATION AND SHELF LIFE ESTIMATION OF CORN YOGURT PACKAGED WITH POLYETHYLENE TEREPHTHALATE	Oral	Jenderal Soedirman University
35	FS-035	Dr. Yuli Witono	PHYSICAL, CHEMICAL, AND FUNCTIONAL CHARACTERISTIC OF 'WADER' (<i>Rasbora jacobsoni</i>), 'BADER' (<i>Puntius javanicus</i>), AND 'PATIN' (<i>Pangasius hypophthalmus</i>) FILLET	Oral	University of Jember
36	FS-036	Dr. Erminawati	QUALITY EVALUATION OF COCOGHURT DRINK WITH ADDITION OF COCONUT SUGAR AND STABILIZERS	Oral	Jenderal Soedirman University
37	FS-037	Dr. Riska Rian Fauziah	ANTICANCER ACTIVITY OF NANOENCAPSULATED NONI (<i>Morinda citrifolia</i> L) EXTRACT	Oral	University of Jember
38	FS-038	Dr. Enny Karti Basuki Susiloningsih	CHEMICAL AND MICROBIOLOGICAL PROPERTIES CARROT (<i>Daucus carota</i>) SOYGHURT	Oral	Universitas Pembangunan Nasional Veteran - Surabaya

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
39	FS-039	Dr. Rosida	CHARACTERISATION OF MODIFIED WATER YAM FLOUR (<i>Dioscorea alata</i>) MADE FROM AUTOCLAVING-COOLING CYCLES FOR BIHON PRODUCT	Oral	Universitas Pembangunan Nasional Veteran - Surabaya
40	FS-040	Dr. Jenny E R Markus	PHYSICOCHEMICAL AND ORGANOLEPTIC PROPERTIES OF ANALOG RICE FROM MAIZE	Oral	Universitas Nusa Cendana - Kupang
41	FS-041	Dr. Lilik Eka Radiati	EFFECT OF CARROT JUICE (<i>Daucus carota</i> , L) ON PHYSICOCHEMICAL-ORGANOLEPTIC AND MICROBIOLOGICAL OF SYMBIOTIC YOGURT ICE CREAM	Oral	Universitas Brawijaya
42	FS-042	Dr. Yuniwaty Halim	UTILIZATION OF MUNG BEAN (<i>Vigna radiata</i> [L.] R. Wilczek) AND POHPOHAN (<i>Pilea melastomoides</i> [Poir.] Wedd) POWDERS AS PARTIAL SUBSTITUTION OF WHEAT FLOUR IN PRODUCTION OF NOODLES	Poster	Universitas Pelita Harapan - Tangerang
43	FS-043	Dr. Siti N. Wulan	ENERGY AND PROTEIN BIOAVAILABILITY OF EXTRUDED "PUFF DRY" PRODUCTS PREPARED WITH MAIZE AND PIGEON PEAS: THE ROLE OF NIXTAMALIZATION AND GERMINATION	Oral	Universitas Brawijaya
44	FS-044	Dr. Ratna Handayani	EVALUATION OF TAPIOCA-ARROWROOT COMPOSITE STARCH BASED EDIBLE FILMS AND ITS APPLICATION TO TOMATOES (<i>LYCOPERSICON ESCULENTUM</i>)	Poster	Universitas Pelita Harapan - Tangerang
45	FS-045	Dr. Eveline	ANTIBACTERIAL ACTIVITY AND STABILITY OF BINTARO (<i>Cerbera odollam</i> Gaertn.) LEAVES EXTRACT AGAINST FOOD BACTERIA	Oral	Universitas Pelita Harapan - Tangerang
46	FS-046	Dr. Zita L. Sarungallo	EFFECT OF HEAT TREATMENT TO THE YIELD AND QUALITY OF RED FRUIT (<i>Pandanus conoideus</i>) OIL DURING DRY EXTRACTION	Oral	Papua University
47	FS-047	Dr. Eveline	UTILIZATION OF RED KIDNEY BEANS FLOUR (<i>Phaseolus vulgaris</i> L.) IN THE MAKING OF HIGH PROTEIN MANTOU	Poster	Universitas Pelita Harapan - Tangerang
48	FS-048	Dr. Rifda Naufalin	THE EFFECT OF ANTIMICROBIAL KECOMBRANG (<i>Nicolaia speciosa</i>) POWDER ON THE CHEMICAL AND MICROBIOLOGICAL PROPERTIES OF TEMPE NUGGET DURING STORAGE	Oral	Jenderal Soedirman University
49	FS-049	Dr. Sony Suwasono	ANTIMICROBIAL ACTIVITIES OF POLYPHENOL-RICH EXTRACTS AGAINST <i>Sireptococcus mutans</i> AND <i>Candida albicans</i> FROM COCOA GRANULES INFESTED BY <i>Conopomorpha cramerella</i> Snellen	Oral	University of Jember
50	FS-050	Dr. Efri Mardawati	KINETIC MODELLING OF THE ENZYMATIC HYDROLYSIS OF CORN STARCH TO PRODUCE GLUCOSE SYRUP USING α -AMYLASE	Oral	Universitas Padjdjaran
51	FS-051	Dr. Mohamad Djali	PHYTOCHEMICAL SCREENING OF <i>Ficus lyrata</i> FRUIT EXTRACT USING FRACTIONATION EXTRACTION METHOD	Oral	Universitas Padjdjaran
52	FS-052	Ulfatu Layinatinnahdliyah Arrozyadi	ANTIOXIDANT AND ANTIHYPERTENSIVE PROPERTIES OF FUNCTIONAL BEVERAGES BASED ON DECAFFEINATED COFFEE AND MANGOSTEEN RIND	Flash-Oral	University of Jember
53	FS-053	Dr. Een Sukarminah	THE EFFECT OF OZONATION OF POTATO ON MICROORGANISMS REDUCTION AND PHYSICAL CHARACTERISTICS DURING STORAGE	Oral	Universitas Padjdjaran
54	FS-054	Hesty Nur Lailatul Khoiroh	EFFECTIVENESS OF ELF MAGNETIC FIELD STERILIZATION TECHNOLOGY (ELF-BASED FUNGUS STERILIZER) TO REDUCE CONTAMINATION RATES OF FUNGUS IN COCOA BEANS	Flash-Oral	University of Jember
55	FS-055	Dr. Mardiah	FORMULATION OF READY TO DRINK (RTD) FROM ROSELLE (<i>Hibiscus sabdariffa</i> , L) TEA AND STEVIA (<i>Stevia rebaudiana</i>) LEAF FOR DIABETICS	Oral	Juanda University - Bogor
56	FS-056	Dr. Hidayah Dwiyaniti	BETA CAROTENE AND TOCOPHEROLS RETENTION OF COCONUT SUGAR ENRICHED WITH RED PALM OIL: INFLUENCE OF END COOKING TEMPERATURE AND MALTODEXTRIN	Oral	Jenderal Soedirman University
57	FS-057	Dr. Siti Irma Rahmawati	EXTRACTION OF PHYCOCYANIN FROM <i>Spirulina plantesis</i> AS BIOPIGMENT FOR HIGH ANTIOXIDANT CARBONATION SOFTDRINK	Oral	Juanda University - Bogor
58	FS-058	Dr. Jariyah	SENSORY EVALUATION OF BISCUIT PRODUCED	Oral	Universitas

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
			FROM WHEAT AND MANGROVE FRUIT FLOUR (MFF) MIXTURES		Pembangunan Nasional Veteran - Surabaya
59	FS-059	Dr. Karseno,	ADDITION OF NATURAL PRESERVATION ON TOTAL PHENOLIC AND ANTIOXIDANT ACTIVITY OF COCONUT SUGAR	Oral	Jenderal Soedirman University
60	FS-060	Dr. Kartika Yurlisa	THE ROLE OF INDIGENOUS VEGETABLES IN HOUSEHOLD FOOD SECURITY IN INDONESIA: A REVIEW	Oral	Universitas Brawijaya
61	FS-061	Dr. Tri Dewanti Widyaningsih	CHONDROITIN SULFATE AND GLUCOSAMINE EXTRACTION FROM CHICKEN FEET CARTILAGE	Poster	Universitas Brawijaya
62	FS-062	Dr. Adolf J. N. Parhusip	LACTIC ACID BACTERIA'S ROLE IN RED MELINJO PEEL FERMENTATION BEVERAGE TO INCREASE ORGANOLEPTIC VALUES AND ANTI HYPERURICEMIC BENEFITS	Poster	Universitas Pelita Harapan - Tangerang
63	FS-063	Dr. Jayus	THERMAL PROCESS OF WHITE MUSSEL (<i>Corbula faba Hinds</i>) CANNED AT VARIOUS TEMPERATURE AND STERILIZATION TIME	Oral	University of Jember
64	FS-064	Aly Firdaus Muhamad	INCREASED QUALITY AND FLAVORS OF ARABICA COFFEE THROUGH FERMENTATION USING <i>Lactobacillus plantarum</i> AND USING CRUDE PAPAINE IN FERMENTOR MACHINE	Flash-Oral	University of Jember
65	FS-065	Dr. Sri Winarti	CHARACTERISTICS OF ANALOG RICE FROM LESSER YAM TUBERS (<i>Dioscorea esculenta</i> L.) SUBSTITUTION WITH MOCAP FLOUR	Oral	Universitas Pembangunan Nasional Veteran - Surabaya
66	FS-066	Dr. Qomarudin	RHEOLOGICAL AND DYNAMIC LIGHT SCATTERING STUDY ON ALGINATE AND BETA-LACTOGLOBULIN MIXED GELS UNDER CONSTANT PRESHEARING EFFECT	Oral	Wisnuwardhana University - Malang
67	FS-067	Dr. Warkoyo	KINETICS OF MICROBIAL GROWTH AND CHEMICAL QUALITY DETERIORATION OF MEATBALLS WITH ACTIVE EDIBLE COATED AS A RESULT OF STORAGE TEMPERATURE	Oral	Muhammadiyah University of Malang
68	FS-068	Dr. Elok Zubaedah	CHEMICAL AND MICROBIOLOGICAL PROPERTIES OF KOMBUCHA FROM APPLE PEEL	Oral	Universitas Brawijaya
69	FS-069	Dr. Erni Sofia Murtini	EXPLORATION OF MERANG ASH POTENTIAL AS FOOD INGREDIENT: STUDY ON THE SELECTED MINERALS CONTENTS AND ITS EFFECT ON THE DAWET GEL QUALITIES	Oral	Universitas Brawijaya
70	FS-070	Lisa Fitri Rahayu	THE INNOVATION OF CITRUS INFUSED HONEY TEA BY INCREASING OF GINGER ROOT (<i>Zingiber officinale</i>) QUANTITY AND PERIOD OF INFUSING	Poster	Universitas Brawijaya
71	FS-071	Anastasia Intan Kurniasari	INNOVATION OF CITRUS INFUSED HONEY TEA WITH ADDED ROSELLE (<i>Hibiscus sabdariffa</i> Linn.): STUDY OF CONCENTRATION OF ROSELLE AND PERIOD OF INFUSING	Poster	Universitas Brawijaya
72	FS-072	Dr. Hesty Heryani	THE START UP OF PRODUCT OF MEDICINAL INNOVATIVE PALM SUGAR	Oral	Lambung Mangkurat University
73	FS-073	Srianta	MONACOLIN K PRODUCTION FROM <i>Monascus purpureus</i> ON SORGHUM GRAIN AND BRAN SUBSTRATES	Poster	Widya Mandala Catholic University/UB
74	FS-074	Assoc. Prof. Dr. Nitty Hirawaty Kamarulzaman	HYGIENE AND SANITARY PRACTICES AMONG FOOD TRUCK HANDLERS (POSTER)	Poster	Universiti Putra Malaysia
75	FS-075	Ms. Suhaila Mohamad Suati	SENSORY EVALUATION OF CHICKEN MEAT WITH DIFFERENT LEVEL OF PALM KERNEL CAKE FEEDING TRIAL	Oral	Universiti Putra Malaysia
76	FS-076	Ms. Siti Farhana Saludin	CONSUMERS' ACCEPTANCE AND QUALITY PREFERENCES TOWARDS LOCAL HONEY BASED ON SENSORY CHARACTERISTICS	Oral	Universiti Putra Malaysia
77	FS-077	Ms. Nur Adibah Hassan	CONSUMERS' KNOWLEDGE AND CONFIDENCE TOWARDS CONSUMING CONTAMINATED PEANUT-BASED PRODUCTS	Oral	Universiti Putra Malaysia
78	FS-078	Ms. Hani Nabila Basri	FACTORS INFLUENCING CONSUMERS' PREFERENCES TOWARDS TRACEABILITY SYSTEMS OF MEAT AND MEAT PRODUCTS IN MALAYSIA	Oral	Universiti Putra Malaysia
79	FS-079	Ms. Akma Aizatul Ain Ruslan	CONSUMERS' AWARENESS AND PERCEPTION TOWARDS ARTIFICIAL FOOD PRODUCTS	Oral	Universiti Putra

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
					Malaysia
80	FS-080	Dr. Joni Kusnadi	THE POTENTIAL OF TEAK LEAVES (<i>Tectona grandis</i>) EXTRACT AND ITS DERIVATIVES AS A SOURCE OF ANTIOXIDANTS AND ANTIMICROBIAL COMPOUNDS.	Oral	Universitas Brawijaya

AGRICULTURAL ENGINEERING (AE)

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
1	AE-001	Dr. Yusuf Wibisono	HARVESTING OF <i>Botryococcus braunii</i> MARINE MICROALGAE BIOMASS BY USING DEAD-END ULTRAFILTRATION FOR BIODIESEL FEEDSTOCK	Oral	Brawijaya University
2	AE-002	Dr. Dewi Ratih Ayu	DEVELOPMENT OF TISSUE CULTURE TECHNIQUES TO SECRETORY PROTEIN PRODUCTION IN ORYZA SATIVA	Oral	Agriculture of Exetnsion Collage - Malang
3	AE-003	Dr. Yohanes Setiyo	LEISA SYSTEM ON CULTIVATION LENTILS SWORD (CANAVALIA ENSIFORMIS)	Oral	Udayana University
4	AE-004	Dr. Tri Rahayuningsih	EXPLORATION OF PRIMARY COLOR SOURCE FOR NATURAL COLOR BATIK	Oral	University of Wijaya Kusuma Surabaya
5	AE-005	Eka Tiyas Anggraeni	DESIGN MACHINE VISION BASED ON DRYER MACHINE FOR IMPROVING THE QUALITY OF <i>Gracilaria verrucosa</i>	Flash-Oral and Poster	Brawijaya University
6	AE-006	Dr. Birgitta Narindri	CORN HUSK WASTE POTENCY AS BIOMASS IN ETHANOL PRODUCTION	Oral	Universitas Atma Jaya - Yogyakarta
7	AE-007	Ashva Afkarina	SAFARI OS-002 (SMART FARM NANOTECHNOLOGY) ABSORBENT TOOL AMMONIA (NH ₃) AND HYDROGEN SULFIDE (H ₂ S) ON POULTRY FARM IN REALIZING ECO-GREEN TECHNOLOGY	Flash-Oral	Universitas Brawijaya
8	AE-008	Bima Adinugraha	DESIGN OF AUTOMATIC NATURAL FOOD COLOURANT EXTRACTOR MACHINEBASED ON ELECTROCONDUCTIVE HEATING TECHNOLOGY	Flash-Oral	Universitas Brawijaya
9	AE-009	Chandra Ardin Hersandi Prakoso	DESIGN OF PRETREATMENT BIOETHANOL REAKTOR MADE FROM LIGNOCELLULOSIC	Flash-Oral	Universitas Brawijaya
10	AE-010	M. Reza Firmansyah	GREYWATER RECYCLE SYSTEM TECHNOLOGY, SOLUTION FOR SUSTAINABILITY CLEAN WATER SUPPLY	Oral and Poster	Universitas Brawijaya
11	AE-011	Alija Haydar Rabbani	"F-RAY (FRUIT SPOILAGE DELAY) "PRESERVATION MACHINE BASED ON AUTOMATIC ECO-CUMCO (EDIBLE COATING AND VACUUM COOLING) TO EXTEND SHELF LIFE OF FRESH FRUITS AND TO IMPROVE QUALITY OF LOCAL FRUITS	Flash-Oral	Universitas Brawijaya
12	AE-012	Novia Rahmawati	LAMP (LIGHTING APPLES MANIPULATION PHOTOPERIODISM) TO INCREASE APPLE PRODUCTIVITY AND QUALITY	Flash-Oral	Universitas Brawijaya
13	AE-013	Mutiara Kusumaningtyas	INTEGRATION TECHNOLOGY OF PHOTOVOLTAIC AND GREENHOUSE FOR CHERRY PEPPER DRYING AT TRAJENG VILLAGE, MALANG	Flash-Oral and Poster	Universitas Brawijaya
14	AE-014	Ilham Tri Laksana and Eliza Fazira	NANOFLAVON - NANO FLAVONOIDS FORMULATION FROM EXTRACT	Flash-Oral	Universitas Brawijaya

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
			OYSTER MUSHROOM (<i>Pleurotus ostreatus</i>) USING SONICATION TECHNOLOGY FOR ANTI- BREAST CANCER COMPOUNDS		
15	AE-015	Dr. Iwan Taruna	EVALUATION OF THIN-LAYER DRYING MODELS FOR ESTIMATING INFRARED DRYING KINETICS OF OKARA	Oral	University of Jember
16	AE-016	Dr. Dwi Rustam Kendarto	IDENTIFICATION OF EROSION DISTRIBUTION PATTERNS ON UP LAND SLOPING AREA WITH SPATIAL ANALYSIS	Oral	Universitas Padjadjaran
17	AE-017	Dr. Zaqlul Iqbal	DESIGNING AND EXPERIMENTING SEMI-AUTOMATIC GREEN GRASS JELLY SQUEEZER	Oral	Universitas Brawijaya

AGRICULTURAL SCIENCE (AS)

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
1	AS-001	Dr. Setiani	HOUSEWIFE KNOWLEDGES ABOUT HOMEGARDEN UTILIZATION AND NUTRITION FOR DIVERSIFICATION OF FOOD CONSUMPTION IN RURAL AREA, EAST JAVA, INDONESIA	Oral	University of Trunojoyo
2	AS-002	Dr. Cokorda Javandira	BIOLOGICAL CONTROL OF <i>Fusarium oxysporum</i> CAUSE WILT DISEASE ON TOMATO PLANTS WITH BACTERIA <i>Pseudomonas</i> sp. AND <i>Bacillus</i> sp.	Oral	University of Mahasaraswati Denpasar
3	AS-003	Dr. Hudaeni Hasbi	IMPROVING SUSTAINABILITY OF THE NITROGEN USE EFFICIENCY BY USING AZOLLA BIOFERTILIZER ISOLAT BESUKI'S ON LOWLAND RICE (<i>Oryza sativa</i> L.)	Oral	University of Muhammadiyah Jember
4	AS-004	Natalia Astuti	SYNTHESIS OF RECOMBINANT COAT PROTEIN SUGARCANE MOSAIC VIRUS (SCMV) IN <i>Escherichia coli</i>	Oral	Airlangga University
5	AS-005	Dr. Nur Eastiharrah Mohmad Hairin	EFFECT OF INDIAN ALMOND, (<i>Terminalia catappa</i>) LEAVES WATER EXTRACT ON ROOT GROWTH OF STEM CUTTING (<i>Allamanda cathartica</i>)	Oral	Polytechnic Sandakan Sabah
6	AS-006	Dr. Sholeh Avivi	SCREENING OF DROUGHT TOLERANT CASSAVA (<i>Manihot esculenta</i> Crantz) USING MORPHOLOGICAL AND PROTEIN CHARACTERISTICS	Oral	University of Jember
7	AS-007	Dr. Novi Haryati	AGRIBUSINESS APPROACH AND DEVELOPMENT STRATEGY OF CORN (<i>Zea mays</i>) TO MAINTAIN FOOD SECURITY IN KEDIRI REGENCY	Oral	Brawijaya University
8	AS-008	Reisyi Rinola Tambunan	SELECTION ON F2 PROGENY OF RICE FROM HYBRIDIZATION BETWEEN IR-64 X PANDANWANGI FOR INTERMEDIATE AMYLOSE CONTENT AND AROMATIC TRAITS BASED ON MOLECULAR MARKER	Oral and Poster	Universitas Padjadjaran
9	AS-009	I Dewa Made Arimbawa	FORMULATION OF EXTRACT SOURSOP LEAF (<i>Annona muricata</i> L.) TO CONTROL <i>Crocidolomia pavonana</i> F. ON CABBAGE	Flash-Oral	University of Mahasaraswati - Denpasar
10	AS-010	Dr. Luh Putu Suciati	KEY STRATEGIES FOR MANAGING MARGINAL LAND IN PAMEKASAN REGENCY, EAST JAVA	Oral	University of Jember
11	AS-011	Ahmad Yunan Arifin	SUSTAINABLE FOOD AVAILABILITY MODEL BASED ON ISLAND GROUP IN THE DISTRICT OF SOUTH HALMAHERA IN NORTH MALUKU	Oral and Poster	Universitas Brawijaya

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
12	AS-012	Dr. Herman Cahyo Diartho	WELFARE OF RICE FARMERS : ANALYSIS OF REGION CHARACTERISTICS AND SOCIAL CAPITAL IN SOUTHERN PART OF JEMBER DISTRICT	Oral	University of Jember
13	AS-013	Dr. Sigit Soeparjono	THE EFFECT OF ORGANIC FERTILIZER AND FREQUENCY APPLICATION OF COCONUT WATER ON YIELD AND QUALITY OF RED GINGER RHIZOME (<i>Zingiber officinale</i> Rosc.)	Oral	University of Jember
14	AS-014	Radatul Munawaroh	INOVATION OF MAGGOT NURSERY WITH AUTOMATIC TEMPERATURE CONTROLLED TECHNOLOGY TO PRODUCE HIGH NUTRITION FISH MEAL	Flash-Oral	Universitas Brawijaya
15	AS-015	M. Faridlil Athrosy	OPTIMIZATION OF RESPONSE SURFACE METHODOLOGY OF PRETREATMENT REED'S LIGNIN DEGRADATION WITH OHMIC HEATING FOR BIOETHANOL PRODUCTION	Flash-Oral	Universitas Brawijaya
16	AS-016	Geofanny Tri Wibowo	MAKING LOW-SEEZER (SLOW RELEASE NANOFERTILIZER) FROM TOFU LIQUID WASTE TO PRODUCE THE SUPERIOR LIQUID FERTILIZER BY USING SONOFRAGMENTATION TECHNOLOGY	Flash-Oral	Universitas Brawijaya
17	AS-017	Dr. Ruzaini binti Ahmad	EFFECT OF FISH FEED ENRICHED IN GARLIC <i>Allium sativum</i> JUICE AT DIFFERENT CONCENTRATION TO JAVANESE BARB <i>Barbonymus gonoiotus</i> GROWTH & SURVIVAL RATE	Oral	Politeknik Sandakan Sabah - Malaysia
18	AS-018	Dr. Tunjung Mahatmanto	PLANT-DERIVED CYCLIC PEPTIDES FOR CROP PROTECTION	Oral	Universitas Brawijaya
19	AS-019	Dr. Khairunisa Binti Ab Aziz	SUSPENSION CULTURE OF <i>Aquilaria beccariana</i> van teigh	Oral	Politeknik Sandakan Sabah - Malaysia
20	AS-020	Dr. Mercy B. Yunindanova	STOMATAL PERFORMANCE, FAT AND PROTEIN CONTENT AND RESPONSE OF SOYBEAN GROBOGAN VARIETY TO SHADE CONDITION AND PERIOD OF DROUGHT STRESS	Oral	Sebelas Maret University
21	AS-021	Ayu Puspita Sari	EFFECT OF ENVIRONMENTAL CONDITION ON YIELD OF SOME KOREAN RICE VARIETIES	Oral	University of Jember / CDAST
22	AS-022	Dwi Erwin Kusbianto	THE DIFFERENCES IN GROWTH AND FATTY ACID COMPOSITION OF GROUNDNUT MUTANT AFTER MUTATION INDUCTION WITH EMS (ETHYL METHANE SULPHONATE)	Oral and Poster	University of Jember
23	AS-023	Distiana Wulanjari	EFFECT OF SILICA FOLIAR FERTILIZER CONCENTRATION AND NaCl CONCENTRATION ON TOMATO QUALITY AND SHELF LIFE	Flash-Oral	University of Jember
24	AS-024	Dr. Sudarko	REINFORCEMENT THE COMPETITIVENESS OF SMALLHOLDERS COFFEE FARMER GROUPS BY AGRIBUSINESS DEVELOPMENT PERSPECTIVE IN JEMBER REGENCY	Oral	University of Jember
25	AS-025	Johanna Suek	ROLE OF MAMAR IN HOUSEHOLD FOOD AVAILABILITY AND ACCESS IN WEST TIMOR	Oral and Poster	Gadjah Mada University
26	AS-026	Dr. Burhanuddin Rasyid	LIQUID BIO-AMELIORANT AND REDUCTION OF INORGANIC FERTILIZER TO IMPROVE SOIL QUALITY AND MAIZE PRODUCTIVITY	Oral	Hasanuddin University
27	AS-027	Dr. Hari Purnomo	INFECTIVITY OF <i>METARHIZIUM ANISOPLIAE</i> METCHS TO CONTROL WHITE GRUB LARVAE ON SUGARCANE	Oral	University of Jember

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
28	AS-028	Yoseph Nahak Seran	SANDALWOOD (<i>Santalum album</i> L.) POPULATION STRUCTURE AND REGENERATION IN KABUPATEN TIMOR TENGAH SELATAN AND TIMOR TENGAH UTARA, WEST TIMOR, NUSA TENGGARA TIMUR	Flash-Oral	Timor University
29	AS-029	Dr. Dewi Retnaningati	PHENOTYPE AND MOLECULAR CHARACTERIZATION OF MELON (<i>Cucumis melo</i> L.) 'HIKADI' BASED ON DNA BARCODE OF matK GENE	Oral	Universitas Atma Jaya - Yogyakarta
30	AS-030	Dr. Siti Asmaniyah Mardiyani	APLICATION OF NEEM (<i>Azadirachta indica</i>) AS BIOLOGICAL PESTICIDES IN SEED COCOA STORAGE (<i>Theobroma cacao</i>) USING LOCAL VARIOUS ABSORBENT MEDIA	Oral	Universitas Islam - Malang
31	AS-031	Dr. Lis Noer Aini	LAND SUITABILITY FOR SOYBEAN (<i>Glycine max</i> (L.) <i>Merill</i>) IN SANDY COASTAL LAND OF PARANGTRITIS, KRETEK, BANTUL, DIY	Oral	Muhammadiyah University of Yogyakarta
32	AS-032	Dr. Dina Wahyu Trisnawati	THE EFFECTS OF FARMING METHODS ON BIODIVERSITY AND COMMUNITY STRUCTURE IN PADDY FIELDS	Oral	Muhammadiyah University of Yogyakarta
33	AS-033	Dr. Tinjung Mary Prihtanti	DIVERSITY OF ORGANIC RICE FARMING PRODUCTIVITY POTENTIAL	Oral	Satya Wacana Christian University
34	AS-034	Prof. Dr. Ma'ruf Kasim	GROWTH OF <i>Eucheuma denticulatum</i> ON NEW CULTIVATION TECHNOLOGY	Oral (Symposium)	Halu Oleo University
35	AS-035	Leta Rafael Levis	FARMERS BEHAVIOUR FOR FOOD SECURITY BY PRACTICING 'SALOME' FARMING SYSTEM AS LOCAL WISDOM IN WEST TIMOR- EAST NUSA TENGGARA PROVINCE	Oral and Poster	Universitas Brawijaya
36	AS-036	Dr. Ikhsan Hasibuan	APPLICATION OF ORGANIC FERTILISER MADE OF OIL PALM PRONDS ON ORGANIC RICE	Oral and Poster	University of Hazairin – Bengkulu
37	AS-037	Dr. Wiwit Widiarti	ANALYSIS OF SOYBEAN (<i>Glycine max</i> L.) MORPHO-PHYSIOLOGICAL CHARACTERISTICS ON SUGARCANE-SOYBEAN INTERCROPPING SYSTEM	Oral and Poster	University of Muhammadiyah Jember
38	AS-038	Himas Nuke Saraswati	SUPPORTIVE MORPHOLOGICAL CHARACTERIZATION FOR PRODUCTIVITY AND QUALITY WONOGIRI SAPODILLA (<i>Achras zapota</i>)	Flash-Oral	Universitas Sebelas Maret
39	AS-039	Novita Chrisna Wardani	MULTIPLICATION OF SAPODILLA (<i>Achras zapota</i>) IN VITRO USING APICAL AND LATERAL MERISTEM	Flash-Oral	Universitas Sebelas Maret
40	AS-040	Dr. Agnes Simamora	EFFECT OF COMBINED USE OF <i>Bacillus</i> , <i>Pseudomonas</i> and <i>Trichoderma</i> spp. IN THE CONTROL OF BROWN-ROT GUMMOSIS IN SoE MANDARIN	Oral	Universitas Nusa Cendana - Kupang
41	AS-041	Dr. Noer Rahmi Ardiarini	BAMBOO: A POTENTIAL SOURCE FOR FOOD SECURITY, ECONOMIC VALUES AND ECOLOGICAL SECURITY IN MALANG REGENCY-EAST JAVA	Oral	Universitas Brawijaya
42	AS-042	Dr. Novi Arfarita	THE EXPLORATION OF INDIGENOUS BACTERIA FOR STABILIZING OF LAND AGGREGATE POTENTIAL FOR BIOFERTILIZER	Oral	Universitas Islam - Malang
43	AS-043	Dr. Carolina	ECOLOGICAL RISK ADAPTATION BY SMALLHODER CASSAVA FARMERS IN SUBANG DISTRICT OF WEST JAVA	Oral and Poster	Indonesian Institute of Science
44	AS-044	Nur Shuhamin binti Nazuri	ACCEPTANCE AND PRACTICES ON NEW PADDY SEED VARIETY AMONG FARMERS IN MADA GRANARY AREA	Oral	Universiti Putra Malaysia
45	AS-045	Assoc. Prof. Dr.	CRITICAL SUCCESS FACTORS OF	Oral	Universiti Putra

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
		Norsida Man	SWIFTLET FARMING		Malaysia
46	AS-046	Ms. Nur Shuhamin Nazuri	ACCEPTANCE AND PRACTICES ON NEW PADDY SEED VARIETY AMONG FARMERS IN MUDA GRANARY AREA	Oral	Universiti Putra Malaysia
47	AS-047	Ms. Melissa Alina Yusoff	CRITICAL SUCCESS FACTOR FOR PRODUCTION SYSTEMS OF SMALL RUMINANT FARMING BASED ON RANCHER'S PERCEPTIONS	Oral	Universiti Putra Malaysia
48	AS-048	Ms. Nora Azura Jumain	THE IMPACT OF RECLAMATION ACTIVITIES TOWARDS FISHING COMMUNITY SOCIO-ECONOMIC AT MERAMBONG SHOAL, GELANG PATAH, JOHOR	Oral	Universiti Putra Malaysia
49	AS-049	Mr. Hazran Zahari	SOCIAL ADAPTATION TOWARDS FLOOD IMPACTS ON AGRICULTURE AMONG FARMERS IN KELANTAN	Oral	Universiti Putra Malaysia

ENERGY AND ENVIRONMENT (EE)

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
1	EE-001	Hardiansyah	MICROBIAL FUEL CELLS (MFCS) DOUBLE CHAMBER AND DUAL FUNCTION BASED ON ANAEROBIC LEACHATE WATER TREATMENT: THE POTENTIAL USE OF LEACHATE AS AN ALTERNATIVE RENEWABLE ELECTRICAL ENERGY	Flash-Oral and Poster	Brawijaya University
2	EE-002	Ratyawisnu Fahmiaji Winarto	AN INNOVATION OF RAPID, PORTABLE AND ECO-FRIENDLY RESIDUAL PESTICIDE ON VEGETABLES DETECTOR	Flash-Oral	Universitas Brawijaya
3	EE-003	Ditasya Kinanti Putri	MCK WASTE GOES TO ECO GREEN INNOVATION WASTE PROCESSING BATHROOM WASHING AND SCALE HOUSEHOLDS INDEPENDEN BASED BIOFILM MIKROALGA AS A FORM OF ECO GREEN	Flash-Oral	Universitas Brawijaya
4	EE-004	Fadil Arif T. Munaf	"PEREMAS" REDUCING CHIMNEY GAS EMISSIONS BY MICROALGAE (<i>Spirulina sp.</i>) AS EFFORTS TO MINIMIZE THE ENVIRONMENTAL POLLUTION	Flash-Oral	Universitas Brawijaya
5	EE-005	Dheniz Fajar Akbar	EFFECT OF IRRIGATION AND COMPOST ON ELECTRICITY VOLTAGE AND CURRENT OUTPUT FROM PADDY-PLANT MICROBIAL FUEL CELL	Flash-Oral and Poster	Universitas Brawijaya
6	EE-006	Lazuardy Tembang Smaradhana	ACID HYDROLISIS BASED RESISTIVE HEATING IN BIOTANOL PRODUCTION FROM RICE STRAW	Flash-Oral	Universitas Brawijaya
7	EE-007	Citra Fida Asteria	MODIFIED BOD5-BASED TEMPERATURE CONTROL TO ACCELERATE THE ANALYSIS OF BOD ₅ (MOBO)	Flash-Oral	Universitas Brawijaya
8	EE-008	Andry P. Ariyanto	WATER STRIDER: SEDIMENT MONITORING DEVICE AND RESERVOIR WATER QUALITY USING SONAR SYSTEM AND IMAGE PROCESSING	Flash-Oral	Universitas Brawijaya
9	EE-009	Gabrile Hardiani	SYNTHESIS OF POLYPYRROLE – CELLULOSE AS CONDUCTIVE FILM FOR DYE SENSITIZED SOLAR CELL (DSSC)	Flash-Oral and Poster	Universitas Brawijaya
10	EE-010	Musyaroh	APPLICATION OF OCTANE CYCLE CONCEPT TO ACHIEVE ZERO WASTE VILLAGE BY INDEPENDENT FOOD AND ENERGY (CASE STUDY: DESA ARGOSARI KABUPATEN MALANG INDONESIA)	Flash-Oral and Poster	Universitas Brawijaya
11	EE-011	Fidyah Afiyata	AWAST (AUTOMATIC WASTE TREATMENT): TECHNOLOGY OF BATIK WASTEWATER TREATMENT APPLICATIVE AND SOLUTION BASED AUTOMATION SYSTEMS ON UKM BATIK BLIMBING MALANG	Flash-Oral	Universitas Brawijaya
12	EE-012	Dr. Tivany Edwin	SALT WATER INTRUSION STUDY IN COASTAL AREA OF PADANG CITY OF INDONESIA	Oral	Andalas University

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
13	EE-013	Shafira Adlina	OIL SPILL DISPERSANT (OSD) FORMULATION OF PALM OIL BASED SURFACTANT FOR BIOREMEDIATION OF HYDROCARBON CONTAMINATED SOIL	Flash-Oral and Poster	Bogor Agricultural University (IPB)
14	EE-014	Dr. Maria	CRITICAL LAND MANAGEMENT FOR AGRICULTURAL IN COASTAL ZONE TOWARDS SUSTAINABLE AGRICULTURE	Oral	Satya Wacana Christian University
15	EE-015	Dr. Hasrul Satria Nur	REDUCING OF GAS EMISSIONS BY COMBINING FERTILIZERS AND THEIR EFFECT OF CHANGES IN DIVERSITY OF SOIL FUNGI	Oral	Lambung Mangkurat University
16	EE-016	Satyaguna Rakmatulloh	THE REDUCTION OF EFFECTS OF GREENHOUSE GASES THROUGH THE UTILIZATION OF BIOGAS FROM ANIMAL WASTE AS AN ALTERNATIVE FUEL IN PANGPAJUNG VILLAGE, BANGKALAN REGENCY, EAST JAVA	Oral and Poster	Gadjah Mada University
17	EE-017	Abiyoso Purnomosakti	COMPARISON ANALYSIS OF WATER MASS CHARACTERISTICS AT INDONESIAN THROUGHFLOW'S EXIT PASSAGE AND SOUTH JAVA SEA	Flash-Oral	Universitas Brawijaya
18	EE-018	Zainal Arif Sayid	ANALYSIS OF LANDSAT8 IMAGERY BAND COMBINATION IMPACT INTO CORAL REEF REMOTE SENSING ON SEMPU ISLAND STRAIT MALANG	Flash-Oral	Universitas Brawijaya
19	EE-019	Ayu Yunita Rohmasari, Dr. Bambang Semedi	STUDY OF SPATIAL DISTRIBUTION HEAVY METAL LEAD (Pb) AND CADMIUM (Cd) IN LEKOK COASTAL WATERS, PASURAN, INDONESIA	Oral	Universitas Brawijaya
20	EE-020	Reskyani Fajri	ASSESSING SHORELINE CHANGE USING SATELLITE - IN SITU DATA IN KUTA BEACH, BALI ISLAND	Flash-Oral	Universitas Brawijaya
21	EE-021	Dr. Nyimas Wardah	BUILDING A RESILIENT FOREST COMMUNITY (INSTITUTIONAL STRENGTHENING OF COMMUNITY GROUPS AND DEVELOPING NON TIMBER FOREST PRODUCTS/NTFPs ENTERPRISES)	Poster	GIZ Bioclimate - Biodiversity and Climate Change Indonesia - Palembang
22	EE-022	Dr. Nyimas Wardah	UNDERSTANDING FOREST AS A SAFETY NET	Poster	GIZ Bioclimate - Biodiversity and Climate Change Indonesia - Palembang
23	EE-023	Ms. Nurshahirah W Merican	FACTORS INFLUENCING PUBLIC'S PERCEPTION AND ATTITUDE TOWARDS SUSTAINABLE MANGROVE FOREST PROGRAMS IN MALAYSIA	Oral	Universiti Putra Malaysia

AGROINDUSTRIAL MANAGEMENT

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
1	AM-001	Soveaddh Pech	FOOD LOGISTICS SERVICE PROVIDERS BUSINESS MODEL CANVAS DEVELOPMENT BASED ON SCOR MODEL: A CASE STUDY	Oral	Mahidol University
2	AM-002	Dr. Isti Fadah	IDENTIFICATION OF PROBLEMS AND POTENTIAL MAPHOME-BASED SMALL BUSINESS CASSAVA IN JEMBER REGENCY	Oral	University of Jember
3	AM-003	Dr. Diana Sulianti K Tobing	THE EFFECT OF TRANSFORMATIONAL LEADERSHIP, CAREER MANAGEMENT, AND WORK SATISFACTION ON EMPLOYEE PERFORMANCE IN PT PERKEBUNAN NUSANTARA XII EAST JAVA INDONESIA	Oral	University of Jember
4	AM-004	Dr. Wiji Utami	THE INFLUENCE OF JOB DISCIPLINE, JOB MOTIVATION AND JOB SATISFACTION TOWARD THE PERFORMANCE OF EMPLOYEES IN PT KERETA API INDONESIA (PERSERO) OPERATIONAL AREA OF 9 JEMBER	Flash-Oral	University of Jember
5	AM-005	Mohamad Reyza	URBAN FOOD LANDSCAPE ON THE	Oral and Poster	The University of

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
		Ramadhan	MOVE: UNDERSTANDING BANDUNG STREET FOOD SECTOR		Adelaide - Australia
6	AM-006	Dr. Azmi Alvian Gabriel	DEVELOPMENT STRATEGY OF <i>BORASSUS FLABELLIFER</i> LIQUID SUGAR INDUSTRY: CASE OF SMALL AND MEDIUM ENTERPRISES (SMEs) <i>BORASSUS FLABELLIFER</i> LIQUID SUGAR, IN TUBAN REGENCY	Oral	Universitas Internasional Semen Indonesia - Gresik
7	AM-007	Dr. Rizky L. R. Silalahi	CONFORMITY LEVEL ASSESSMENT OF QUALITY ATTRIBUTES ON KOP SAE PUJON'S PASTEURIZED MILK	Oral	Universitas Brawijaya
8	AM-008	Dr. Sujarwo	CONSUMER BEHAVIOR OF RICE AND THE IMPLICATION OF FOOD SECURITY POLICY IN INDONESIA	Oral	Universitas Brawijaya
9	AM-009	Dwi Aulia Puspitaningrum	BEEF SUPPLY DEMAND ANALYSIS USING DINAMIC SYSTEM APPROACH	Oral and Poster	Gadjah Mada University/UPN-Veteran
10	AM-010	Prof.Dr. Irham, MSc	FOOD SOVEREIGNTY: LEARNING FROM TRADE INTERCONNECTIVITY OF CASSAVA COMMODITY WITHIN ASIA PACIFIC REGION	Oral (Symposium)	Centre for Asia Pacific Studies - Gadjah Mada University
11	AM-011	Retty Ikawati	PRODUCT DEVELOPMENT OF CATFISH MEATBALLS WITH EXTRA TEMPE AS AN ALTERNATIVE SCHOOLFOODS IN THE CITY OF YOGYAKARTA	Flash-Oral	Gadjah Mada University
12	AM-012	Dr. Devi M. Rahmah	IDENTIFYING CORN AGROINDUSTRIAL DEVELOPMENT SYSTEM IN INDONESIA THROUGH SYSTEM THINKING APPROACH	Oral	Padjadjaran University
13	AM-013	Dr. Devi Maulida Rahmah	DEFINING SME'S : BEHAVIOUR OF AGRICULTURAL SMALL MEDIUM ENTERPRISE SYSTEM FOR SUSTAINABLE IMPROVEMENT PROCESS	Poster	Padjadjaran University
14	AM-014	Rahayu Relawati	THE INFLUENCE OF PSYCHOGRAPHIC FACTORS ON PURCHASING BEHAVIOR OF LOCAL AND IMPORTED APPLE: A STUDY ON CONSUMERS IN MALANG AND SURABAYA	Oral and Poster	Muhammadiyah University of Malang/UGM
15	AM-015	Dr. Siti Asmaul Mustaniroh	THE RISK ASSESMENT OF SUPPLY CHAIN INSTITUTIONAL FOR APPLE BEVERAGES WITH FUZZY FMEA IN SMES KTMA, BATU CITY	Oral	Universitas Brawijaya
16	AM-016	Dr. Panji Deoranto	MARKETING STRATEGY PLANNING OF ORGANIC VEGETABLE "ViO" WITH SWOT METHOD AND ANP(CASE STUDY IN VIGUR ORGANIC FARMERS GROUP, MALANG)	Oral	Universitas Brawijaya
17	AM-017	Dr. Mas'ud Effendi	ANALYSIS OF INFLUENCE OF MEMBERSHIP CARD ON CUSTOMER SATISFACTION AND LOYALTY IN THE CAFÉ	Oral	Universitas Brawijaya
18	AM-018	Dr. Ika Atsari Dewi	SUPPLY CHAIN RISK MEASUREMENT FOR ORGANIC HORTICULTURAL PRODUCTS USING FUZZY FAILURE MODE EFFECT ANALYSIS (A CASE STUDY IN KOPERASI BRENJONK, MOJOKERTO)	Oral	Universitas Brawijaya
19	AM-019	Dr. Imam Santoso	STRATEGY FOR STRENGTHENING THE SUPPLY CHAIN PERFORMANCE (A CASE STUDY IN THE CHICKEN INDUSTRY)	Oral	Universitas Brawijaya
20	AM-020	Dr. Inggit Kentjonowaty	MILK HOUSE CAFE AND RESTO: A MULTI-PURPOSE BUSINESS BASED IN CAMPUS	Oral	Universitas Islam - Malang
21	AM-021	Dr. Ismail AbdLatif	IDENTIFYING TECHNICAL EFFICIENCY	Oral	Universiti Putra

NO.	CODE	NAME	TITLE	TYPE OF PRESENTATION	UNIVERSITY
			AMONG OIL PALM SMALLHOLDERS ACCORDING TO CROP AGE CATEGORY IN PENINSULAR MALAYSIA: DATA ENVELOPMENT ANALYSIS APPROACH		Malaysia
22	AM-022	Dr. Nolila Mohd Nawi	CONSUMER'S PREFERENCES TOWARDS TRADITIONAL RETAIL FORMAT TYPES IN PURCHASING AGRICULTURE PRODUCTS (POSTER)	Oral	Universiti Putra Malaysia
23	AM-023	Dr. Juwaidah Sharifuddin	PRODUCERS INTENTION TOWARDS THE IMPLEMENTATION OF MESTI CERTIFICATION SCHEME	Oral	Universiti Putra Malaysia
24	AM-024	Dr. Rika Terano	DISSATISFIED CONSUMERS' REPURCHASING BEHAVIOR ON ONLINE SHOPPING IN KLANG VALLEY, MALAYSIA	Oral	Universiti Putra Malaysia
25	AM-025	Ms. Fatin Najiha Mohd Tammili	EFFECTIVENESS OF MICROCREDIT FINANCE PROGRAM IN ENHANCING MICRO ENTERPRISE ENTREPRENEURS' INCOME IN SELANGOR	Oral	Universiti Putra Malaysia
26	AM-026	Ms. Anis Shaira Sulastri	CONSUMER BEHAVIOR TOWARDS ONLINE GROCERY SHOPPING IN MALAYSIA	Oral	Universiti Putra Malaysia



- Collins FI, Cartter JL. 1956. Variability in chemical composition of seed from different portions of the soybean plant. *Agron. J.* 48 216–219
- Dai YJ, Shen ZG, Liu Y, Wang LL, Hannaway D, Lu HF. 2009. Effects of shade treatments on the photosynthetic capacity, chlorophyll fluorescence, and chlorophyll content of *Tetrastigma hemsleyanum* Diels et Gilg. *Environ. Exp. Bot.*, 65, pp. 177–182
- Datta, S.C., Evenari, M. and Gutterman, Y. (1970) The heteroblasty of *Aegilops ovata* L. *Israel Journal of Botany* 19, 463–483.
- Deng YM, Li CC, Shao QS, Ye XQ, She JM. 2012. Differential responses of double petal and multi petal jasmine to shading: I. Photosynthetic characteristics and chloroplast ultrastructure. *Plant Physiol. Biochem.*, 55, pp. 93–102
- Escalante EE, Wilcox JR. 1993. Variation in seed protein among nodes of determinate and indeterminate soybean near isolines. *Crop Sci.* 33. 1166–1168.
- FAO Statistical Databases. 2013. Food and Agriculture Organization of the United Nations, <http://faostat.fao.org>.
- Farooq M, Wahid A, Kobayashi N, Fujita D, Basra SMA. 2009. Plant drought stress: effects, mechanisms and management. *Agronomy for Sustainable Development*, Springer erlag/EDP Sciences/INRA, 29 (1), pp.185–212. hal-00886451
- Handajaningih M, Sukarjo EI, Lidiawati N. 2013. Pertumbuhan awal mahkota dewa (*Phaleriamacrocarpa*) pada beberapa dosis vermikompos dan intensitas naungan. *J Agrotrop* 3(2): 43-50 ISSN: 2088-155X
- Kaufman PB. 1989. *Plants: their biology and importance*. Harper and Row. New York.
- Kim, T.H., Böhrer, M., Hu, H., Nishimura, N., Schroeder, J.I., 2010. Guard cell signaltransduction network: advances in understanding abscisic acid, CO₂, and Ca²⁺ signaling. *Ann. Rev. Plant Biol.* 61, 561–591.
- Mohsen, Nik M, Babaeian M, Abolfazl, Tavassoli. 2012. Effects of seed position on the parental plant on seed weight and nutrient content of wheat (*Triticum aestivum*) grain in different genotypes. *Annals of Biological Research*, 3 (1):534-542
- Monda, K., Negi, J., Iio, A., Kusumi, K., Kojima, M., Hashimoto, M., Sakakibara, H., Iba, K., 2011. Environmental regulation of stomatal response in the Arabidopsis Cvi-0 ecotype. *Planta* 234, 555–563.
- Moravcová L., Perglová I., Pyšek P., Jarošík V. and Pergl J., 2005. Effects of fruit position on fruit mass and seed germination in the alien species *Heracleum mantegazzianum* (Apiaceae) and the implications for its invasion. *Acta Oecologica* 28: 1-10
- Muhartini S, Kurniasih B. 2000. Pertumbuhan dan hasil temulawak (*Curcuma xanthorrhiza*) pada berbagai intensitas cahaya dan dosis pemupukan. *J Ilmu Pertanian* 7(1): 17-21
- Rogondino M and Rogondino P. 2000. *Process Color Manual: 24,000 CMYK Combinations for Design, Prepress, and Printing*. Chronicle Books, 256 pages.
- Schroeder, J.I., Allen, G.J., Hugouvieux, V., Kwak, J.M., Waner, D., 2001a. Guard cell signal transduction. *Ann. Rev. Plant Biol.* 52, 627–658.
- Schroeder, J.I., Kwak, J.M., Allen, G.J., 2001b. Guard cell abscisic acid signalling and engineering drought hardiness in plants. *Nature* 410, 327–330.
- Song R, Kelman D, Johns KL, Wright AD. 2012. Correlation between leaf age, shade levels, and characteristic beneficial natural constituents of tea (*Camellia sinensis*) grown in Hawaii, *Food Chem.* 133. 707e714
- Sundari T and Purwantoro. 2014. Kesesuaian Genotipe Kedelai untuk Tanaman Seladi Bawah Tegakan Pohon Karet. *Penelitian Pertanian Tanaman Pangan* VOL. 33 NO. 1 p 44-53.
- Taufik A, Adie MM. 2013. Pengaruh kekurangan air terhadap karakter agronomis dan fisiologis genotipe kedelai hitam. *Penelitian pertanian tanaman pangan* 32(1): 25-35.
- Yokoyama VY, Mackey BE. 1987. Protein and Tannin in Upper, Middle, and Lower Cotton Plant Strata and Cigarette Beetle (Coleoptera: Anobiidae) Growth on the Foliage. *Journal of Economic Entomology* Vol 80 Issue 4. Pp. 843 – 847. DOI: <http://dx.doi.org/10.1093/jee/80.4.843> 843-847 First published online: 1 August 1987
- Zhao D, Hao Z and Tao J. 2012. Effects of shade on plant growth and flower quality in the herbaceous peony (*Paeonia lactiflora* Pall.). *Plant Physiology and Biochemistry*. Volume 61, Pages 187–196. doi:10.1016/j.plaphy.2012.10.005

Effect of environmental condition on yield of some Korean rice varieties

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ABSTRACT

Over the past decade, global warming has increased the environmental problems, affecting numerous areas of the world. This caused the high temperatures and drought in some areas in Indonesia. Plants are trying to adapt to the global warming changes. The growing seasons for many plants are becoming altered as the temperature change. As the temperature changes, many plants are not capable of reproducing, causing many numbers of plant species to become limited. This study investigated the effects of climate change on paddy rice growth and production. Five of Korean (Cheongcheong, Chucheong, Pungmi, Ilpum, Nagdong) and a local (Ciherang) rice varieties were grown in paddy fields with the normally farming system in local area (Jember District). All data were determined by analysis of variance and Duncan multiple range test. Cheongcheong, Chucheong, and Pungmi varieties showed adaptability to a tropical environment. Their yields were 8.42, 8.37, and 7.88 ton/ha, respectively. A local variety (Ciherang) was 7.45 ton/ha, showed it was lower yield than three Korean rice varieties. Other Korean rice (Nagdong and Ilpum) varieties were low yield. Chucheong variety contained higher amount of carbohydrate, approximately 83.45%. Some overseas varieties able to adapt on different environmental condition such as: temperature, long day period, light intensity, and other conditions).

Keywords: rice, yield, global warming.

I. INTRODUCTION

Rice (*Oryza sativa* L.) is one of the three major food crops are cultivated in various regions of the world, especially in Asia. In Indonesia, rice has been a staple food, so that it was as an important food commodity. Rice contains some nutrients that are required by the human body, such as 70-75% carbohydrates, 6-7.5% proteins, 3% fat and a little vitamin B2 (Pratiwiri,2006), and also calories as an energy source for the human body about 354 kcal/100 g (Shafwati, 2012).

The increasing population caused the rice as a staple food increased. Since 2014, rice production decreased 0.63% to reach 70 million tons over the previous year. (Direktorat Jenderal Tanaman Pangan Kementerian Pertanian, 2015). Indonesian peoples consumed large amounts of rice is about 139.5 kg/year, which the consumption of rice

was 2 times than other peoples in the world (of 60 kg/year) (Christianto, 2013). According to the Sekretaris Jenderal Kementerian Pertanian (2014), the availability of rice in 2014 reached 40 million tons with total area of 13,797,307 hectares of paddy crop.

Environmental factors, especially climate change cause the decreasing of rice yield. Development of new varieties from abroad are expected to increase the rice yield. This study may open up opportunities to develop the new varieties from abroad that can adapt in a different environment in Indonesia.

II. MATERIALS AND METHODS

The experiment was conducted in two places on the farm lands and in Tegal Besar Laboratory CDAST Jember Jember University conducted from November 2015 until April 2016. The experiment used a randomized block design (RAK) one factor that consists of 6 treatments varieties, among which Ciherang and 5 varieties of rice Japonica namely Cheongcheong, Naghdong, Chucheong, Pungmi and Ilpum obtained from South Korea as well as 3

Deuteronomy. Differences of experimental results from each treatment were tested by using a analysis of variance (ANOVA) and a multiple range test (Duncan test).

Some components of the observations were made for data retrieval, ie: yield (t/ha), weight of filled grain per hill (g), weight of filled grain per panicle (g), weight of filled grain per

1000 seeds (g), Amylose (%), carbohydrates (%), proteins (%), fat content (%), ash (%), and water content (%).

III. RESULTS AND DISCUSSION

Analysis of variance of all variables observation some Japonica rice varieties were showed in Table 1.

Table 1 Analysis of variant of some parameters in some japonica rice.

Variable Observation	Square value		
	Variety	Group	Error
Weight of filled grain/panicle (g)	0,98	0,11 ns	0,
Weight of filled grain/hill (g)	451,82*	50,48 ns	21,
Weight of filled grain/1000 Seeds (g)	9,85	2,64 ns	1,
Yield (ton/ha)	27,50	3,21 ns	1,
Water (%)	6,68 **	0,03 ns	0,02
Ash (%)	68,36 ns	0,89 ns	20,62
Amylosa (%)	9,55 **	0,23 ns	0,34
Protein (%)	5,14 *	1,90 ns	1,37
Fat (%)	0,252 **	0,06 ns	0,06
Carbohydrate (%)	68,50 ns	75,49 ns	23,88

Information: * = Significantly Different

** = Highly Significant

ns = Not Significant

Japonica rice plants showed that each variety of rice had a different ability to adapt and therefore contributes to a significantly difference to the parameters investigated. (Table 1). Japonica rice varieties had a significantly difference on the production parameter (yield, grain weight/hill, weight of filled grain/panicle, and weight of filled grain/1000 seeds), when they planted in the regosol type soil in Jember district. All of qualities parameters (Water content, ash, protein, fat, and amylose) showed significant difference compared with each of varieties, but not significant different on carbohydrate content.

Change of climate condition effected to the growth and development of rice plants. The transition between the vegetative to generative phase indicated by rice plants begin flowering. In the flowering phase requires time range for 10 to 14 days and if 50% of the crop has emerged Inroads interest it has considered entering the flowering phase. Based on the results of the experiment is conducted, found that some of the varieties tested had the same flowering time or even longer between each variety, as well as the time of harvest. Varieties Nagdong and Ilpum start planting flowering at the age of 22-23 days after planting, whereas Pungmi at age 25 HST. Cheongcheong and chucheong begin flowering at age 28

Tabel 2. Production of Rice Varieties

Varieties	Variabel Observation			
	1	2	3	4
Cheongcheong	1.58 b	34.70 a	34.33 ab	8.42 a
Naghdong	0.44 c	9.48 b	30.73 d	2.37 b
Ciherang	1.28 b	29.95 a	32.73 bc	7.49 a
Chucheong	1.93 a	33.50 a	35.77 a	8.37 a
Pungmi	1.56 b	31.53 a	34.17 c	7.88 a
Ilpum	0.71 c	8.27 b	32.03 d	2.07 b

Notes : Numeral followed by the same letter on the same line no significant effect on the level of 5% Duncan test. Figures on variable observations show: (1) The weight of filled grain per panicle (g), (2) Weight filled grains per hill (g), (3) Weight of filled grain per 1000 seeds (g) and (4) Yield (ton / ha). The numbers - the numbers in bold are the best treatments.

of HST. Ciherang which is the local varieties and as a comparison start planting flowering at the age of 35 HST.

In Table 2 it can be seen that the production is related to the weight of filled grain per panicle as heavily influenced filled grain yield per clump after calculation. The results for both variables were obtained by Cheongcheong varieties is 8.42 tonnes / ha with grain weight per panicle contents of 34.70 g. Varieties Cheongcheong has no significant effect on Ciherang, Chucheong and Pungmi.

Efendi, Halimursyadah and Simajuntak (2012) reported that each variety has a different effect on the temperature on the grain filling process so that there are several varieties of grain that are not filled perfectly thereby affecting grain weight content. In this study Ciherang which is used as the Indica varieties varieties that obtain a yield of about 7.49 tonnes / ha with grain weight per panicle contents of 29.95 g. Results Ciherang is lower than the results of varieties Cheongcheong, Chucheong, and Pungmi..

The content and weight of 1000 grain weight of filled grain per panicle on Chucheong varieties showed the highest yield in the amount of 35.77 g and 1.58 g, while the varieties that have the lowest weight is Naghdong varieties of 30.73 g and 0.44 g. Chucheong varieties showed significantly different results with varieties Cheongcheong. This may imply that the varieties Cheongcheong has the second highest grain weight of 1000 amounted to 34.33 g.

formed during seed filling. In addition, environmental factors also affect the results of 1000 grain weight in seed maturation phase. At the time of planting rice, erratic weather and the rain that fell on - constantly so that the process of filling the seed can not happen to the fullest. The composition of nutrition of five rice varieties showed significant difference than that of controls. The fat content of six showed no significant different among the five variables, including Cheongcheong, Naghdong, Ciherang, Chucheong and Pungmi with a value of 2%. While the amylose content of all japonica rice were lower than lokal rice. Amylose contributed the texture and stickiness, indicated a good indicator for the gel hardness of rice properties. According to Wang et al. (2010) the possibility of varying the amylose content is influenced by genetics, growth zone, and the environme.

The amount of amylose and amylopectin can determine the level of rice stikiness. Low amylose rice (high amylopectin) preferred by the people of Japan, China, and Korea. Amylose content affects the properties of volume expansion, tenderness and weaknesses of. High amylose rice is the more bloom rice. Conversely, the lower the amylose, the more the rice is fluffier and not become hard after a cold, and it feels good. Indica rice is moderate to high amylose content, while in the Japonica rice amylose content is low to moderate (Koswara, 2009). Cheongcheong variety contained high amount of protein approximately 6.72%.

Water content of rice related with self life of seed, less than 14 % would be better and safer when stored, while rice with a moisture content of more than 14 % will lead to microbial metabolism running fast. Based on the analysis of water content, Ciherang variety contained low amout of water about 4.07% and japonica rice were more than 5%, when the rice was dried in same condition.

Tabel 3. Nutrition value of six rice varieties

Varietas	Variable observation(%)			
	Water	Amylose	Protein	Fat
Cheongcheong	5.93 b	12.63 b	6.72 a	2.00 a
Naghdong	8.00 a	12.22 bc	6.53 a	2.00 a
Ciherang	4.07 c	16.16 a	6.35 a	2.00 a
Chucheong	6.07 b	12.40 b	5.69 b	2.00 a
Pungmi	8.00 a	11.74 c	5.51 a	2.00 a
Ilpum	5.87 b	11.06 d	3.17 a	1.33 a

Notes : Numeral followed by the same letter on the same line no significant effect on the level of 5% Duncan test.

CONCLUSIONS

Varieties Cheongcheong had good results with the quantity of filled grain weight per panicle and filled grain weight per 1000 seeds, amounting to 34.70 g and 34.33 g as well as the high yield of 8.42 tonnes / ha and has a good quality with total protein content of 6.72%.

REFERENCES

- Christanto, J. 2013. Faktor Yang Mempengaruhi Impor Beras Di Indonesia. *Jurnal Jibeka* 7 (2) Direktorat Jenderal Tanaman Pangan Kementerian Pertanian. 2015. *Rencana Strategis Direktorat Jenderal Tanaman Pangan 2015 – 2019*. Jakarta : Kementerian Pertanian Republik Indonesia
- Efendi, Halimursyadah dan H. R. Simajuntak. 2012. Respon Pertumbuhan Dan Produksi Plasma NutfahPadi Lokal Aceh Terhadap Sistem Budidaya Aerob. *Jurnal Agrista* 16 (3) : 114 – 121.
- Jannah, A., Y. S. Rahayu dan K. Sulanjari. 2012. Respon Pertumbuhan Dan Produksi Padi (*Oryza sativa* L.) Varietas Ciherang Pada Pemberian Kombinasi Dosis Pupuk Kandang Ayam. *Jurnal Ilmiah Solusi* 11 (25) : 1– 15.
- Koswara, S. 2009. *Teknologi Pengolahan Beras*. ebookPangan.com.
- Patiwiri, A.W. 2006. *Teknologi Penggilingan Padi*. Jakarta : PT Gedia Pustaka Utama.
- Sekretaris Jenderal Kementerian Pertanian. 2014. *Program Swasembada Padi, Jagung Dan Kedelai Serta Peningkatan Gula Dan Daging*. Dialog Dalam Rangka Rapimnas Kadin 2014.
- Shafwati, A. R. 2012. *Pengaruh Lama Pengukusan Dan Cara Penanakan Beras Pratanak Terhadap Mutu Nasi Pratanak*. Bogor : IPB.
- Wang Xin Q., Y. L. Qing., S. G. Zhi., X. Li dan L. Q. Quan. 2010. Determination of Amylose Content and Its Relationship With Rva Profile Within Genetically Similar Cultivars of Rice (*Oryza Sativa* L. sp. Japonica). *Agricultural Sciences In China* 9 (8) : 1101 - 1107

Effect of silica foliar fertilizer concentration and NaCl concentration on Tomato quality and shelf life

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ABSTRACT

Tomato has short shelf life, so it harvested early. This causes lower tomato produced quality due to biochemical changes is not optimal yet. NaCl addition can increase the quality of tomato but it has negative effect by increasing the osmotic in excessive concentration. Silica foliar fertilizer application expected to increase the tomato firmness and decrease osmotic effect in plant cell. The aim of this research to get the combination of concentration between silica foliar fertilizer and NaCl that have produces higher quality and longer shelf life of tomato. This experiment using hydroponic substrates and conducted by Factorial RCBD with 3 replicates into two factor. The first factor was silica foliar fertilizer concentration (consist of 0 mgL⁻¹, 200 mgL⁻¹, 400 mgL⁻¹, 600 mgL⁻¹) and the second factor was NaCl concentration (consist of 0 mgL⁻¹, 50 mgL⁻¹, 100 mgL⁻¹, 150 mgL⁻¹). The gathered data were analyzed using Analysis of Variance, then followed by DMRT of 95% significant level for the treatment means test. The treatment combination of Si 200 mgL⁻¹ and NaCl 100 mgL⁻¹ generates the higher firmness and longest shelf life than other treatment. The combination Si 400 mgL⁻¹ and NaCl 100 mgL⁻¹ generates the best quality for titrable acid, vitamin c, and protein content which were 15,8%, 1,08 mg g⁻¹, and 3,94% respectively. Overall the combination of Si 200 mgL⁻¹ and NaCl 100 mgL⁻¹ generates better quality and shelf life of tomatoes. The addition of silica foliar fertilizer give effect to the quality and shelf life of tomato.

Keywords: Silica foliar fertilizer, NaCl, Tomato

I. INTRODUCTION

Tomato (*Lycopersicon esculentum* Mill) is a kind of fruit that consume freshly, because it contains the vitamins and minerals. Tomato had short shelf life, si it was harvested early by the farmer. The earlier harvaested was to increase the shelf life period and physical maintain of tomato in order to has a good condition until deliver to consument. This case caused the lower quality production of tomato due to biochemical changes in fruits not optimal yet. The addition of NaCl could increase tomato quality, but it has negative effect like osmotic potential in excessive concentration that plasmolysis causes and decrease the fruit size. (Rahmawati *et al*, 2011; Siregar 2010; Iglesias *et al*, 2015). Application of silica foliar fertilizer could increase the fruit firmness through silica polymer formation that associated



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