

# CONFERENCE PROGRAMME PAPERS ABSTRACTS



**6th International Conference on  
Sustainable Agriculture, Food  
and Energy.  
October 19 - 21, 2018 in MANILA,  
Philippines.**

## **Inclusive Agri-food Energy Production for Community Empowerment in a Changing Climate**



# SAFE 2018 COMMITTEE

## Patron

**Prof. Dr. Tafdil Husni**, The Rector of Andalas University, Indonesia.  
**Dr. Honorio Soriano**, The PCountry of Pampanga State Agricultural University (PSAU), The Philippines.  
**Rolando de Asis, PhD**, The PCountry of Central Bicol State University of Agriculture (CBSUA), The Philippines.  
**Dr. Baldwin G. Jallorina**, Director IV of Philippines Center for Postharvest and Mechanization (PhilMech), The Philippines

## Executive Chairman

**Prof. Dr. Novizar Nazir**—Andalas University-INDONESIA

## Local Conference Coordinator

**Norman G. De Jesus, Ph.D**  
Director, PSAU-ALIAS R&DE Center.  
Pampanga State Agricultural University-Magalang, Pampanga, Philippines

## Conference Secretary

**Dr. Helen Martinez**  
The Philippines Center for Postharvest and Mechanization (PhilMech), Philippines

## Advisory Committee

**Dr. Paul Kristiansen**—University of New England, AUSTRALIA (Co-ordinator)  
**Prof. Dr. Werry Darta Taifur**, Andalas University, INDONESIA  
**Dr. Lili Nurlaili**, Indonesian Attache on Education and Culture (Philippines)  
**Prof. Dr. Hj. Khudzir Bin Hj Ismail**, Dean of Faculty of Applied Science, UiTM, MALAYSIA  
**Prof. Dr. Nguyen Hay**—Nong Lam University Ho Chi Minh City-VIETNAM  
**Dr. Yunardi Yusuf-Syiah** Kuala University-INDONESIA  
**Prof. Dr. Djumali Mangunwijaya**—Bogor Agricultural Agriculture, INDONESIA  
**Prof. dr. Dewa Putu Widjana, DAP&E. Sp.Par.K-Warmadewa** University—INDONESIA  
**Dr. Anak Agung Gde Oka Wisnumurti, M.Si-Warmadewa** University—INDONESIA  
**Prof. Dr. Bohari M Yamin**, Universiti Kebangsaan Malaysia, MALAYSIA  
**Prof. Dr. Masateru Senge**, United Graduate School of Agricultural Science, Gifu University, JAPAN  
**Prof. Dr. Wan Mohtar Wan Yusoff**—Universiti Kebangsaan Malaysia, MALAYSIA  
**Prof. Dr. Wan Azizah Hanom Ahmad**, UiTM, Malaysia

## Steering Committee

**Prof. Dr. Helmi**—Andalas University-INDONESIA (Co-ordinator)  
**Assoc. Prof. Dr. Nurul Huda**—SAFE-Network Country Co-ordinator (Malaysia)  
Universiti Sultan Zainal Abidin (UniSZa), MALAYSIA  
**Prof. P.M.C.C de Silva, PhD**, University of Ruhuna, SAFE-Network Country Co-ordinator (SRI LANKA)  
**Assoc. Prof. Keng-Tung Wu, PhD**, SAFE-Network Country Co-ordinator (TAIWAN)  
**Prof. Dr. Fauzan Azima**—Andalas University-INDONESIA  
**Dr. Munzir Busniah**—Andalas University-INDONESIA  
**Prof. Dr. Amitava Basu**—Bidhan Chandra Krishi Vidyalaya, INDIA  
**Prof. Nasser Aliasghar zad**—Department of Soil Science- Faculty of Agriculture. The University of Tabriz-Iran.  
**Assoc. Prof. Nguyen Huy Bich, Ph.D**—Nong Lam University Ho Chi Minh City-VIETNAM  
**Prof. Kohei NAKANO, Ph.D**—Gifu University-JAPAN  
**Prof. Dr. MD MIZANUR RAHMAN BHUIYAN**, Khulna University-BANGLADESH  
**Dr. Ir. Ujang Paman Ismail, MSc**. Universitas Islam Riau-INDONESIA

## Organizing Committee:

<b>Ass.Prof. Hanylin Hidalgo</b>	CBSUA	Philippines
<b>Dr. Amelia Nicolas</b>	CBSUA	Philippines
<b>Richard Castor</b>	CBSUA	Philippines
<b>Ma Teresa Lirag</b>	CBSUA	Philippines
<b>Presbel Presto</b>	CBSUA	Philippines
<b>Alicia Z. Maghuyop</b>	CBSUA	Philippines
<b>Michael A. Gragasin</b>	PhilMech	Philippines
<b>Bezt Zee Magararu</b>	PhilMech	Philippines
<b>Jett Molech Subaba</b>	PhilMech	Philippines
<b>Danilo Esteves</b>	PhilMech	Philippines
<b>Rosalie Feliciano</b>	PhilMech	Philippines

## SAFE-Network Regional Secretariat:

**Dr. Irawati Chaniago**, *Andalas University-INDONESIA*  
**Anak Agung Sagung Putri Risa Andriani**, *Warmadewa University. INDONESIA*  
**Dr. Wahyudi David** – *Bakrie University-INDONESIA*  
**Dr. Wiwik Hardaningsih**, *Agriculture Polytechnic of Payakumbuh. INDONESIA*  
**Aisman Rasjinin**, *MSc-Andalas University-INDONESIA*  
**Dr. Febri Doni**, *Universiti Kebangsaan Malaysia*  
**Abzar Khan**, *Universiti Kebangsaan Malaysia*  
**Rahmat Hidayat, ST, M.Sc.IT**– *State Polytechnic of Padang –INDONESIA*  
**Muhammad Iqbal Syuhada**, *Andalas University-INDONESIA*  
**Dr. Ni Luh Suriani**– *Universitas Udayana-INDONESIA*  
**Dr. Ario Beta Juanssilfero, M.Eng**– *LIPI-INDONESIA*

## Scientific Committee

**Prof. Dr. Novizar Nazir**, *Andalas University, INDONESIA*  
**Prof. Dr. Takashi Oku**-*Prefectural University oh Hiroshima, JAPAN*  
**Dr. Muhammad Ishfaq Khan**, *The University of Agriculture Peshawar. PAKISTAN*  
**Prof. Dr. Nobutaka Ito**, *Chiang Mai University. THAILAND*  
**Prof.Dr. Nurpilihan Bafdal**, *Padjadjaran University-INDONESIA*  
**Prof.Dr Roostita Balia**, *Padjadjaran University-INDONESIA*  
**Prof. Dr. Bohari M Yamin**, *Universiti Sains Islam Malaysia, USIM. Malaysia*  
**Assoc.Prof. Dr. Azwani Mohd. Lazim**, *Universiti Kebangsaan Malaysia, UPM. Malaysia*  
**Assoc. Prof. Dr. Nurul Huda**– *UniSZA, Malaysia*  
**Dr. Ario Beta Juanssilfero, M.Eng**– *LIPI-INDONESIA*  
**Rahmat Hidayat, ST, M.Sc.IT**– *IJASEIT/State Polytechnic of Padang –INDONESIA*  
**Dr. Febri Doni**, *SRI-Mas, Malaysia*  
**Dr. Amelia Nicolas**, *CBSUA. Philippines*



SA/E-18	<p><b>EFFECTS OF ANTIFUNGAL COMPOUNDS IN CHILLI PLANT THE INTRODUCTION OF INDIGENOUS RHIZOBACTERIAL TOWARDS ANTHRACNOSE (COLLETOTRICHUM GLOEOSPORIDES).</b></p> <p><b>Fatimah</b>  <i>Faculty of Agriculture, Tamansiswa University, Padang, West Sumatera, Indonesia.*Corresponding author E-mail : fatimah.kasim16@gmail.com</i></p>
SA/E-19	<p><b>THE EFFECT ADDITION SEQUALEN IN-VITRO TO INCREASED ASIATICOSIDE HAIRYROOT CULTURE CENTELLA ASIATICA (L.) URBAN</b></p> <p><b>Zahanis</b>  <i>Faculty of Agriculture Universitas Tamansiswa Padang – Indonesia. E-mail: anis@gmail.com</i></p>
SA/E-20	<p><b>USE OF APPLIED EMBRYO TRANSFER TECHNOLOGY TO IMPROVE FERTILITY USING GNRH PLUS PROGESTERONE COMBINATION IN LOCAL PESIR COW IN WEST SUMATRA</b></p> <p><b>Zaituni Udin<sup>1</sup>, Hendri<sup>2</sup> and Masrizal Masrizal<sup>1</sup></b>  <sup>1</sup><i>Faculty of Animal Science, Andalas University, West Sumatera, Indonesia. Email: zaituniudin@yahoo.co.id</i></p>
SA/E-21	<p><b>ROLE OF COMPOST DERIVED FROM RICE STRAW AND TITHONIA IN IMPROVING CHEMICAL FERTILITY OF REGOSOL ON ONION CULTIVATION..</b></p> <p><b>Gusnidar<sup>1</sup>, F. Fitria<sup>2</sup>, L. Maira<sup>3</sup> and Yulnafatmawita<sup>4</sup></b>  <sup>1</sup><i>Soil Science Department, Agriculture Faculty, Andalas University Kampus Limau Manis, Padang Sumatera Barat, Indonesia (25163), Telp. 0751-72773, fax, 0751-77061. Corresponding author: E-mail: gusnidar.a02@gmail.com</i></p>
SA/E-22	<p><b>EFFECTS OF SEAWEED EXTRACT AS BIOSTIMULANT ON GERMINATION AND VEGETATIVE GROWTH OF RICE (ORYZA SATIVA)</b></p> <p><b>Zozy Aneloi Noli, Manyurdin, Izmiarti, Oza Sri Wahyuni, Selvie Rimayani</b>  <i>Biology Dept., Faculty of Mathematic and Natural Sciences, Andalas University, Padang, INDONESIA. E-mail: zozya@yahoo.com</i></p>
SA/E-23	<p><b>INVOLVEMENT OF JASMONIC ACID IN THE INDUCED SYSTEMIC RESISTANCE OF TOMATO AGAINST <i>Ralstonia Syzigii</i> Subsp. INDONESIAENSIS BY INDIGENOUS ENDOPHYTE BACTERIA</b></p> <p><b>Yulmira Yanti<sup>1</sup>, Warnita<sup>2</sup>, Reflin<sup>1</sup></b>  <sup>1</sup><i>Department of Plant Protection, Faculty of Agriculture, Andalas University, Padang, Indonesia.</i>  <sup>2</sup><i>Department of Agronomy, Faculty of Agriculture, Andalas University, Padang, Indonesia. E-mail: yy.anthie79@gmail.com; mira23@agr.unand.ac.id</i></p>
SA/E-24	<p><b>ORGANIC CARBON SEQUESTRATION RATE UNDER EX COAL MINING AREA: CASE STUDY IN SANGATTA, EAST KALIMANTAN INDONESIA</b></p> <p><b>Yulnafatmawita Yulnafatmawita<sup>1</sup>, Bujang Rusman<sup>2</sup>, Suci Rahmadhani<sup>3</sup></b>  <i>Department Soil Science, Faculty Agriculture, Andalas University, Padang, 25163, Indonesia</i>  <i>E-mail: yulna_fatmawita@yahoo.com; 2 bujang_rusman@yahoo.com; 3) suci_rahmadhani@yahoo.com</i></p>
SA/E-25	<p><b>IDENTIFICATION OF ENDOPHYTIC AND RHIZOSPHERE BACTERIA IN MAIZE (ZEA MAY L) IN LIMA PULUH KOTA REGION, WEST SUMATRA, INDONESIA</b></p> <p><b>Yun Sondang, Khazy ANTY, Ramond Siregar</b>  <sup>1</sup><i>Payakumbuh State Polytechnic of Agriculture, INDONESIA. E-mail: silitonga_yun@yahoo.co.id</i></p>
SA/E-26	<p><b>ADAPTATION TEST OF CHRYSANTHEMUM (CHRYSANTHEMUM) IN TANJUNG PATI DISTRICT, LIMAPULUH KOTA</b></p> <p><b>Rasdanelwati, Jonni</b>  <i>Department of Horticulture, Agricultural State Polytechnic of Payakumbuh. Jl. Raya Negara KM 7 Tanjung Pati, Kabupaten Limapuluh Kota. Payakumbuh- West Sumatera 26271. Email: jo_jonni@yahoo.com</i></p>
SA/E-27	<p><b>POPULATION GROWTH OF BIOLOGICAL AGENT BACTERIA FROM LOCAL MICROORGANISM (MOL) IN VARIOUS MASS PROPAGATION MEDIA</b></p> <p><b>Yulensri, Arnety, Noveri</b>  <sup>1</sup><i>Payakumbuh State Polytechnic of Agriculture, INDONESIA. E-mail: yulensri87@gmail.com</i></p>
SA/E-28	<p><b>THE EFFECT OF MEDIA ON VEGETATIVE LEAVES OF LEAVES ON THE GROWTH OF MONTHLY WINE STEKS (PHALAENOPSIS AMABILIS)</b></p> <p><b>Jonni<sup>1</sup>, Rasdanelwati<sup>2</sup>, and Muflihayati<sup>3</sup></b>  <sup>1,2</sup> <i>Horticulture Study Program</i>  <sup>3</sup> <i>Food Crop Cultivation Study Program. Agricultural State Polytechnic of Payakumbuh. Jl. Raya Negara KM 7 Tanjung Pati, Kabupaten Limapuluh Kota. Payakumbuh- West Sumatera 26271. INDONESIA. Email: jo_jonni@yahoo.com</i></p>
SA/E-29	<p><b>THE ROLE OF COMPOSITION OF TITHONIA AND MICROORGANISM ON SOIL AND PLANT CHEMICAL PROPERTIES, AND THE PRODUCTION OF ARABIC OF COFFEE FARMING IN SITUJUH, LIMAPULUHKOTA DISTRICT, WEST SUMATERA</b></p> <p><b>Agustinus Mangunsong, Soemarsono, Mamang Wahyudi,</b>  <i>Payakumbuh Agriculture Polytechnics. <sup>1</sup>payakumbuh State Polytechnic Of Agriculture, Indonesia. E-Mail: Agustinus.Mangunsong60@gmail.Com</i></p>
SA/E-30	<p><b>POLLUTION OF BATANG LAMPASI BASED ON BIOINDICATOR MICROALGAE PERIPHYTON</b></p> <p><b>Harmailis<sup>1</sup>, Reni Ekawaty<sup>1</sup>, Abizar<sup>2</sup></b>  <sup>1</sup><i>Agricultural Water Management Study Program, Agricultural Technology Department, Payakumbuh Agricultural Polytechnic, West Sumatera, Indonesia (e-mail: harmailis_chaniago@yahoo.com, ekawatyreni@politanipyk.ac.id)</i>  <sup>2</sup><i>Biology Study Program, STKIP Padang, West Sumatera, Indonesia (e-mail: abhie_zar@yahoo.co.id)</i></p>
SA/E-31	<p><b>THE STUDY OF VARIOUS COMPOSITIONS OF BIOFERTILIZERS IN ORGANIC FERTILIZER ON BIOCUMPOST QUALITY</b></p> <p><b>Mispit Putrina, Yulensri, Krisna Murti</b></p>



	Payakumbuh State Polytechnic of Agriculture, Jalan Raya Negara Km 7, TanjungPati, West Sumatra, Indonesia 26271. E-mail: yulensri87@gmail.com
SA/E-32	<b>INDUCTION OF CLAY LOAM SOIL AND N-UREA IN COMPOST AS A CHARACTER OF ORGANO-COMPLEX FERTILIZER ON THE SYSTEM OF RICE INTENSIFICATION (SRI) METHODS</b> <b>Agustamar<sup>#</sup>, Benny Satria Achmad<sup>#</sup> and Eddy Susiawan<sup>#</sup></b> <sup>#</sup> Payakumbuh Agricultural Polytechnic, Jl. Raya Negara km. 7 Sarilamak 26271, Indonesia. E-mail: <a href="mailto:agustamar59@gmail.com">agustamar59@gmail.com</a>
SA/E-33	<b>REINOCULATION OF INDIGENOUS AZOTOBACTER ISOLATES WITH MULTIPLE RICE VARIETIES TO INCREASED RICE PRODUCTION METHOD OF SRI AND RICE LAND QUALITY</b> <b>Nelson Elita<sup>#</sup>, Agustamar, <sup>#</sup>1 Rita Erlinda<sup>#</sup></b> <sup>#</sup> Department of Food Crop Cultivation, State Agricultural Polytechnic Payakumbuh, Tanjung Pati Highway 7 km District District Limapuluh Kota Harau 26271. E-mail: <a href="mailto:nelsonelita@yahoo.com">nelsonelita@yahoo.com</a> and <a href="mailto:agustamar59@gmail.com">agustamar59@gmail.com</a> <sup>#</sup> 2 Department of Plantation Cultivation, State Agricultural Polytechnic Payakumbuh, Tanjung Pati Highway 7 km District District Limapuluh Kota Harau 26271. E-mail: <a href="mailto:ritaerlinda@yahoo.com">ritaerlinda@yahoo.com</a>
SA/E-34	<b>APPLICATION AZOTOBACTER AND PSEUDOMONAS FLUORESCENTS BACTERIA INDIGENOUS TO IMPROVE PLANT RICE PRODUCTION SRI METHOD</b> <b>Rita Erlinda<sup>#</sup>, Nelson Elita<sup>#</sup>, Agustamar<sup>#</sup></b> <sup>#</sup> Department of Plantation Cultivation, State Agricultural Polytechnic Payakumbuh, Tanjung Pati Highway 7 km District District Limapuluh Kota Harau 26271. E-mail: <a href="mailto:ritaerlinda@yahoo.com">ritaerlinda@yahoo.com</a> <sup>#</sup> Department of Food Crop Cultivation, State Agricultural Polytechnic Payakumbuh, Tanjung Pati Highway 7 km District District Limapuluh Kota Harau 26271. E-mail: <a href="mailto:nelsonelita@yahoo.com">nelsonelita@yahoo.com</a> and <a href="mailto:agustamar29@gmail.com">agustamar29@gmail.com</a>
SA/E-35	<b>THE ABUNDANCE OF SCIRTOTHRIPS DORSALIS AND THRIPS HAWAIIENSIS ON WILD VEGETATION IN MANGOSTEEN PLANTATION</b> <b>Fardedi</b> Department of Estate Crops, Polytechnic of Agriculture Payakumbuh, Jln Raya Negara Km 07 Tanjung Pati, 26271, Indonesia. E-mail: <a href="mailto:fardedi@gmail.com">fardedi@gmail.com</a>
SA/E-36	<b>QUALITY OF M-5 AGRONOMY CHARACTERISTICS OF BLACK RICE INDUCTION MUTATION TO GET A SHORT RODS</b> <b>Benny Warman, Hendra Alfi and Kresna Mutri,</b> Agricultural Polytechnic State of Payakumbuh, West Sumatera, Indonesia. Corresponding author: <a href="mailto:warman.benny@yahoo.co.id">warman.benny@yahoo.co.id</a>
SA/E-37	<b>THE EFFECT OF THE TIME OF GIVING COMPOST SOLUTIONS INDIGENOUS PHOSPAT AND CA EGG CUPS ON THE LANDNESS OF GROUND PEANUT</b> <b>Ani Darfi, Ngakumalem, Auzia Asman, Lenni Rosaira</b> Payakumbuh State Polytechnic. Payakumbuh, INDONESIA. E-mail: <a href="mailto:anidarfi.pyk@gmail.com">anidarfi.pyk@gmail.com</a>
SA/E-38	<b>MOLECULAR ANALYSIS OF TARO WHITE CATTLE AND BALI CATTLE USING DNA MITOCHONDRIA D-LOOP SEQUENCE</b> <b>Ni Nyoman Werdi Susari<sup>1</sup>, Luh Gde Sri Surya Heryani<sup>1</sup>, I Wayan Nico Fajar Gunawan<sup>2</sup>, Luh Made Sudimartini<sup>3</sup>, Putu Henrywaesa Sudipa<sup>2</sup></b> <sup>1</sup> Laboratory of Anatomy and Veterinary Embryology <sup>2</sup> Laboratory of Clinical Diagnosis, Clinical Pathology, and Veterinary Radiology <sup>3</sup> Laboratory Physiology, Pharmacology and Veterinary Pharmacy. Contact person : <a href="mailto:nrwsusari@unud.ac.id">nrwsusari@unud.ac.id</a>
SA/E-39	<b>EFFECT OF CARCASS LENGTHEN AGING ON PHYSICAL QUALITY OF BALI PIG PORK</b> <b>Sriyani N.L.P., I. G. Suarta, N.L.G. Sumardani, B.R.T. Putri, Sayang Yupardhi W.</b> Faculty of Animal Science Udayana University, P.B Sudirman Street, Denpasar -Bali. INDONESIA. E-mail : <a href="mailto:sriyaninlp@unud.ac.id">sriyaninlp@unud.ac.id</a>
SA/E-40	<b>DEVELOPMENT, ADOPTION AND DISSEMINATION OF FERMENTATION TECHNOLOGY FOR ORGANIC FARMING IN BUNIR DISTRICT OF KHYBER PUKHTONKHWA PAKISTAN</b> <b>Zulqarnain, * Khalid Nawab, Mohd Hanif, Mohd Arif, Amir Zaman and Asghar Ali</b> Faculty of Rural Social Sciences. The University of Agriculture, Peshawar. E-mail: <a href="mailto:*zulqarnain196@gmail.com">*zulqarnain196@gmail.com</a>
SA/E-41	<b>LONG TERM IWM (INTEGRATED WEED MANAGEMENT) FOR CONTROLLING NOXIOUS WILD ONION AND SOME OTHER WEEDS IN CHICKPEA CROP</b> <b>IMTIAZ KHAN AND M.I.KHAN</b> Department of Weed Science. The University of Agriculture Peshawar-Pakistan <a href="mailto:imtiyazkhan@aup.edu.pk">imtiyazkhan@aup.edu.pk</a>
SA/E-42	<b>ALLELOPATHIC APPROACHES FOR WEED MANAGEMENT IN WHEAT (TRITICUM AESTIVUM L.) UNDER IRRIGATED CONDITIONS</b> <b>Muhammad Ishfaq Khan</b> Department of weed science, the University of Agriculture Peshawar-25130 Pakistan. <sup>2</sup> Department of Agronomy, the University of Agriculture Peshawar-Pakistan. Corresponding email: <a href="mailto:mishfaq@aup.edu.pk">mishfaq@aup.edu.pk</a>
SA/E-43	<b>ANALYSIS OF WATER BALANCE TO DETERMINE CROPPING PATTERNS OF FOOD CROP IN WATERSHED TENGGARONG- KUTAI KARTANEGARA REGENCY</b> <b>Akas Pinaringan Sujalu I, Abdul Fatah<sup>1</sup>, M Hidayanto<sup>2</sup>, Yossita Fiana<sup>2</sup> And Akas Yekti Pulihasih<sup>2</sup></b> <sup>1</sup> Faculty of Agriculture, The University of 17th August 1945 University Samarinda; Address: Ir. H. Juanda 80 road-Samarinda 75124, East Kalimantan Province, Indonesia; Ph/Fax +62541743390; Mp +6281545995696; e-mail: <a href="mailto:pinaringan_b@yahoo.co.id">pinaringan_b@yahoo.co.id</a> <sup>2</sup> Agency for Agriculture Research and Development the Province of East Kalimantan; INDONESIA Address: Jl. Pangeran M. Noor, Sempaja-PO Box 1832 Samarinda 75119-East Kalimantan. INDONESIA <sup>3</sup> Kartini University. Address: Jl. Raya Nginden 19-23 Ph'. (031) 5944462; Fax: (031) 5941954 Surabaya. INDONESIA



Chrysophyta, and Euglenophyta. Diversity index are between 2.55 -2.75. Based on Shannon-Wiener Index, Batang Lampasi has been light polluted because its pollution index is between 2 - 3.

Keywords— Batang Lampasi, Bioindicator, Pollution

### SA/E-31

## THE STUDY OF VARIOUS COMPOSITIONS OF BIOFERTILIZERS IN ORGANIC FERTILIZER ON BIOCOMPOST QUALITY

Mispit Putrina, Yulensri, Krisna Murti

Payakumbuh State Polytechnic of Agriculture, Jalan Raya Negara Km 7, TanjungPati, West Sumatra, Indonesia 26271. E-mail: yulensri87@gmail.com

The use of agricultural production facilities produced from natural resources are not renewable such as fertilizers and pesticides continuously with excessive doses feared it would disrupt environmental sustainability. Intensive soil treatment and for a long time can result in reduced fertility and soil quality. One of the technologies that can overcome the problem of fertility and soil quality is the use of bio-compost which combines biological fertilizers with organic fertilizer (compost). Biological fertilizers used contain three types of bacteria namely *Serratia marcescens* SLK, *Bacillus thuringiensis* SBI and *Pseudomonas fluorescens* PYK. The three types of bacteria can increase total N nutrients and P2O5 is available in the soil, hormone auxin producer and control of plant pests and diseases. The purpose of this study was to find the percentage of biological fertilizers in organic fertilizers which can improve how the bio-compost quality. Factorial Randomized Complete Design was used in this experiment. First factor applied was biological Fertilizer levels (10, 20, 30 %). While the second factor applied was Compost Type; Straw Compost, *tithonia* compost, Chicken manure compost. The results showed that the three types of compost used met the Indonesian national standards (SNI) for organic fertilizer. biological fertilizer at a dose of 10% in *tithonia* compost can increase the total K2O from 4.7% to 8, 59%, total N decreased from 2.8% to 2.46% and total P2O5 increased from 1.83% to 1.89%. The percentage of biological fertilizer in compost did not affect the bacterial population at the age of fourteenth day after bacterial inoculation.

keywords; biological fertilizer, organic fertilizer, bio-compost

### SA/E-32

## INDUCTION OF CLAY LOAM SOIL AND N-UREA IN COMPOST AS A CHARACTER OF ORGANO-COMPLEX FERTILIZER ON THE SYSTEM OF RICE INTENSIFICATION (SRI) METHODS

Agustamar<sup>#</sup>, Benny Satria Achmad<sup>#</sup> and Eddy Susiawan<sup>#</sup>

<sup>#</sup>Payakumbuh Agricultural Polytechnic, Jl. Raya Negara km. 7 Sarilamak 26271, Indonesia. E-mail: agustamar59@gmail.com

**Abstract** — Organo-complex fertilizer is a combination of compost from sources of cow manure and nitrogen inorganic fertilizer (N) from urea, phosphorus (P) from SP-36 and potassium (K) from KCl. Organo-complex fertilizers that have been produced previously have not been stable and still cause problems from the source N (Urea) which has been applied 75% of the recommended dosage of SRI rice plants. The problem is the stinging odor of the N source from inorganic. If the organo-complex fertilizer is directly used it does not cause problems but can be problematic if stored for a long time, especially after being illustrated. The use of clay loam soil works well to reduce the strong scent caused by ammonia. The combination of the percentage of mixed soil with N dose can give rise to a characteristic or stable character of organo-complex fertilizer. The study was designed in the following: (1) determination of source of cow manure as compost material, (2) composting process for 42 days, (3) organo-complex treatment between N dose of (Urea) and percentage of clay soil substitution, (4) combination determination was chosen as organo-complex character, and (5) rice plant growth pot test method of SRI (the System of Rice Intensification). The survey results showed that: (1) the source of manure was determined to come from cattle located in Sungai Ipun Limapuluh Kota, West Sumatra, (2) quality compost was obtained, (3) a combination of N (Urea) dosage and the percentage of clay loam soil that was not scent after 21 days into organo-complex fertilizer, (4) testing the combination of selected treatments on the growth of SRI method rice leads to saving dose of N (150 kg Urea / ha) by adding 20% clay loam soil to organo-complex fertilizer not scent

Keywords—Organo-complex, ammonia, compost, SRI methods.