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**Fostering
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Collaboration**
on Sustainable Agriculture,
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(1) SUSTAINABLE AGRICULTURE

SUB-THEME	Author (s)	COUNTRY	TITLE
SA-01	Hasanuddin ¹ , Gina Erida ¹ , Siti Hatsah ¹ , and Rahmayani ¹ ¹ Department of Agrotechnology, Faculty of Agriculture, University of Syiah Kuala Banda Aceh-Indonesia. E-mail: hasanuddin@unsyiah.ac.id	INDONESIA	The Application of Glyphosate Herbicide Dosages and Its Effect on Characteristics Of <i>Eleusine Indica</i> weed
SA-02	Yulnatamawita Hermansah ¹ Department Soil Sci., Andalas University, Kampus Unand, Padang, 25163, Indonesia. Corresponding author: yulna_fatmawita@yahoo.com	INDONESIA	Chemical Characteristics of Soils Based on Toposequence under Wet Tropical Area in Bukit Sarasah Padang
SA-03	I Gusti Made Ariana*, Yohanes Parliindungan Situmeang*, I Nengah Suaria*, and Ni Komang Sulasmini Mudra* *Faculty of Agriculture, Warmadewa University, Denpasar, Bali E-mail: igm.ariana@gmail.com, ypsitumeang63@gmail.com	INDONESIA	Effect of Plant Material and Variety for Production and Quality Chrysanthemum
SA-04	I Gede Mangku P Faculty of Agriculture Warmadewa University, Denpasar-Bali, Indonesia E-mail: pasek_mangku@yahoo.com	INDONESIA	Stabilitation Of Strawberry Puree By Adding Of Ascorbic Acid And Sodium Acid Pyrophosphate (Sapp) During Processing
SA-05	Purnama Dini Hari Faculty of Agricultural Technology-Andalas University. INDONESIA. E-mail: purnamadini@gmail.com	INDONESIA	The Growth Rate of Various Commercial Mushroom Grown on Artificial Mediums and Spawn Made of Waste Materials
SA-06	Nurbailis and Martinus* *Department of Plant Protection, Agriculture Faculty, Andalas University, Padang West Sumatera, Indonesia	INDONESIA	Colonisation Ability of <i>Trichoderma viride</i> T1sk on several Banana Cultivar Roots and its Effect Against Fusarium Wilt Disease
SA-07	Yulmira Yanti ¹ , Trimurti Habazar ² , Chainur Rahman Nasution ³ ¹ Faculty of Agriculture, Andalas University, Limau Manis, Padang, 25163, Indonesia. E-mail: yy.anthier79@gmail.com; trimurtihabazar@yahoo.com rahman.nasution1995@gmail.com	INDONESIA	Phenylalanineylase Enzyme activity of rhizobacterial introduced soybean's seedlings, which the ability to induce the resistance of soybeans toward bacterial pustule (<i>Xanthomonas axonopodis</i> pv. <i>glycines</i>).
SA-08	Reni Lestari ¹ , L. Agus Sukamto ² , Winda Utami Putri ¹ , Popi Aprilianti ¹ and Sri Wahyuni ¹ ¹ Center for Plant Conservation Botanic Gardens-Indonesian Institute of Sciences ² Research Center for Biology-Indonesian Institute of Sciences Email : reni_naa@yahoo.com, reni001@iipi.go.id	INDONESIA	Evaluation and Selection of Lowland and Midland West Java Avocado (<i>Persea americana</i> Mill.) for All Year Round Fruit Availability

SA-05

The Growth Rate of Various Commercial Mushrooms Grown on Artificial Mediums and Spawn Made of Waste Materials

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Abstract: Several commercial cultivated mushrooms (*Agaricus bisporus*, *Auricularia sp.*, *Volvariella volvacea*, *Pleurotus ostreatus*) were subjected to cultivation in several artificial mediums (*Potato Dextrose Agar (PDA)*, *Water Agar (WA)*, *Czapek's Agar (CA)*, *Malt Extract Agar (MA)*). the diameter of colony were measured after and the widest of each species were chosen to cultivated in several waste materials based spawn (soy pulp, shredded paper) and corn seed as a control. The research represented the significant effect of artificial mediums and spawn substrates to mycelium growth. *Agaricus bisporus* shown a significant growth of in MEA similar to *Auricularia sp.* A maximum diameter of *Volvariella volvacea* had appeared in CA, while *Pleurotus ostreatus* performed the best result in PDA. *Agaricus bisporus* mycelium also shown a high covering percentage in soy pulp based spawn, while *Auricularia sp.*, *Volvariella volvacea* and *Pleurotus ostreatus* with better covering in shredded paper based spawn. All of species tested had shown a highest covering in corn seed.

Keywords : commercial mushroom, colony, spawn, soy pulp, shredded paper

SA-06

The Chitinase Activity In Banana Seedling That Induced By *Trichoderma* Spp As Resistance Responce To *Fusarium Oxysporum* F.Sp.Cubense

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Abstract

This experiment was conducted to study the chitinase activities of banana seedling that induced by *Trichoderma* spp. The experiment consisted of two parts: 1. Testing chitinase activity in banana seedlings induced by *Trichoderma* spp., Using a factorial in a completely randomized design with two factors: a. types of inducers (solid, liquid culture and filtrate), b. Isolates of *Trichoderma* spp. (*T. Koningii*-S6sh, *T. Viride*-T1sk, *T. harzianum*-P4sh and control.) with 4 replications. Parameters measured were, the specific activity of the chitinase enzyme were detected in stems, leaves and roots of banana seedlings. 2. Testing of several types of inducers of *Trichoderma* spp. in inducing resistance in banana seedlings to *Foc*, together with the study design 1. Parameters measured were: incubation period, the percentage of symptomatic leaves and percentage discoloration of vessels. The results showed that 1. Liquid culture of inducer *T. Viride* -T1sk and *T. koningii*-S6sh and biomass of *T. koningii*-S6sh and *T. harzianum*-P4sh were effective in increasing the specific activity of chitinase enzyme on banana seedling. The increase the amount specific activity of chitinase enzyme on banana seedling tissues by liquid culture of *T. Viride*- T1sk 346% and 131,32% by *T. koningii* could be suppress fusarium wilt disease on banana seedling.

Keywords: *Trichoderma* spp, *Fusarium oxysporum* f,sp, cubense, chitinase enzymes, induced resistance