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ICSAFS

**International Conference
on Sustainable Agriculture and Food Security:
*Challenges and Opportunities***

Proceeding

UNIVERSITAS PADJADJARAN

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**International Conference
on Sustainable Agriculture and Food Security:
*Challenges and Opportunities***

**Proceeding
(Poster Papers)**

Editors:

Anne Nurbaity (Indonesia)

Edy Subroto (Indonesia)

Endang Yuni Setyowati (Indonesia)

Florin Stanica (Romania)

Ichsan Nurul Bari (Indonesia)

Klaus Wimmers (Germany)

Nono Carsono (Indonesia)

Oviyanti Mulyani (Indonesia)

Pasi Lehmousloto (Finlandia)

Paul S. Teng (Singapore)

Shantosa Yudha Siswanto (Indonesia)

Stevica Aleksic (Republic of Serbia)

Universitas Padjadjaran

Indonesia

2012

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Published by Faculty of Agriculture Universitas Padjadjaran Indonesia

April 2012

Nurbaity, A., Subroto, E., Setyowati, E.Y., Stanica, F., Bari, I.N., Carsono, N., Mulyani, O., Lehmousloto, P., Teng, P.S., Siswanto, S.Y., Aleksic, S. 2012. Proceeding of International Conference on Sustainable Agriculture and Food Security (ICSAFS). 782p.

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Jl. Raya Jatinangor km. 21 Bandung 40600 West Java Indonesia

ISBN 978-9798426-13-5 [printed version]
ISBN 978-979-8246-14-2 [electronic version]

Technical editing and design: Ichsan Nurul Bari and Gigih Ibnu Prayoga

development and food security. According to this, it is required to develop strategies, a new paradigm, and holistic approach to support the agricultural growth continuum.

In order to make a significant contribution to the better understanding of sustainable agriculture for meeting food security needs and addressing climate change challenges, an International Conference on Sustainable Agriculture and Food Security was held in Bandung Indonesia on 27-28 September 2011. This conference was organized by collaboration of four faculties in Universitas Padjadjaran: Faculty of Agriculture, Faculty of Animal Husbandry, Faculty of Fishery and Marine Science, and Faculty of Agricultural Industrial Technology. Ministry of Agriculture of Republic Indonesia and internationally well-known experts from USA, Finlandia, Singapore, Germany, Malaysia, Romania, Republic of Serbia, China as well as Indonesia were invited as resource speakers.

More than 250 participants from 15 countries attended the conference. The conference shared experiences and views regarding agricultural production in a changing environment towards sustainable agriculture development to maintain food security, and stimulated cooperative research among participating institutions.

About 180 papers are presented and the committee hopes that these papers will be a lasting record of the contributions to this conference and a useful reference for all practitioners in the fields of agriculture in general. Some of the topics presented include critical issues dealing with sustainable agriculture and food security, agrosocio-economy, agritechnology, plant sciences, animal production, and food technology. The committee would like to thank the many reviewers of the papers for their contribution to these proceedings.

The conference and proceeding would have not been accomplished without the support of many individuals, groups and academic units. We owe our gratitude to those who commit and dedicate their self to this conference.

Benny Joy
Chair of ICSAFS

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Abstract

In Indonesia, more than 70 % healthy ecosystem of irrigated land has been degraded. This can be seen from low organic matter (<2%), acid soil, and low diversity of microorganism and soil mesofauna. Rice straw compost is one of the organic matter that can be easily found, which influence the soil in three ways which are physically, chemically and biologically. A healthy ecosystem was expected to improve rice production. The investigation on utilization of rice straw compost aimed to evaluate the application in every cropping season using four rice varieties. The experiment has been conducted using demonstration plots at farmer's land, in Marjasari's village, district of Cibogo, Subang regency, during three cropping season, began in February 2010 until March 2011. The result of the experiment indicated that the addition of rice straw compost 4 ton ha⁻² during two cropping season (CS II and CS III) can increase and varied rice yield varieties Ciherang, Mekongga, Cigeulis, and Ciliwung. Ciliwung variety has the highest yield were to 35,72 % (CS II), and 71,55% (CS III) than CS I. In the cropping season III has increased 26.62% compared to Cropping Season II.

Keywords: rice straw compost, wetland ecosystems, rice yield

Introduction

The utilization of straw directly have a negative impact, for example contamination of germs on the straw from the previous cropping and the formation of methane due to anaerobic decomposition. The solution by giving some compost. The main obstacle of straw composting are preparation of materials, transportation, maintenance, and a relatively high cost. The alternative solution is to perform inoculation with consortium decomposer (Turmuktini, et al., 2011 b).

Nowadays to approach the increasing rice production is through the intensification program by relying on intensive use of external inputs (inorganic fertilizers and pesticides). The efforts to produce about 4-6 tons / ha of rice is needed fertilizer around 200-300 kg of urea, SP-100 kg and 100 kg KCl per hectare. Intensive use of N fertilizer will stimulate mineralization of soil organic matter, this will decrease levels of C-organic matter in soil.

The efforts to increase rice productivity with intensive fertilization (based on using artificial fertilizers) has already reached saturation point (leveling off) and causes soil degradation and healthy fields degradation. On the other hand, the main product of the actual rice farming is an organic fertilizer in the form of straw, which was about 1 - 1.2 times the grain yield. When grain yield 6 tons / ha, then the straw around 6-7 tons / ha, therefore can double the utilization of straw, as a source of macro and micro nutrients as well as an