Conference Programme
Papers Abstracts

Global Innovation on Sustainability and Sustainable Development

SAFE 2017

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SAFE NETWORK
Asia Pacific Network for Sustainable Agriculture, Food and Energy

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SAFE NETWORK

Asia Pacific Network for Sustainable Agriculture, Food and Ene

Mission:

SAFE Network is an Asia Pacific network of university and college educators, researchers, and activists collaborate in analysis, synthesis, connecting and educating the people for a better economy, ecology, and in agriculture, food and energy system.

Objectives:

- Increase the capacity of the scientific community to address major sustainability challenges in agriculture, food and energy.
- Increase the capacity of the scientific community to enrich people through programs, services and support that help them increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.

Activities:

- SAFE Network provides annual workshop and conference under the theme of sustainable agric food and energy.
- SAFE Network publish an International Journal in sustainable agriculture, food and energy.
- SAFE Network enables scholars to collaborate more effectively in applying an International Re research grant.
- SAFE Network provides Exchange scholars/lecturers between members.
- SAFE Network provides program, services and support to help people increase their capa produce a better economy, ecology, and equity in agriculture, food and energy system.

Working Group

- WG1- Sustainable Agriculture
- WG2- Food Technology and Sustainable Nutrition
- WG3- Sustainable Energy
- WG4- Extention, Community Development and Scientific Communication

Let's Join!

Any organization or individual committed to Sustainable Agriculture, Food and Energy can join the Netwo

- Get the latest information on Sustainable Agriculture, Food and Energy
- Build connections with colleagues across the country
- Access helpful assistance, workshop, training and resources.
- Get support to programs, services and support that increase capacity to produce a better e ecology, and equity in agriculture, food and energy system.
- Share your knowledge and experience on Sustainable Agriculture, Food and Energy

IPD-33

The Development of an Instant Functional Drink made from Ciplukan (*Physalis angulata*,L.) Flavored with Cassia Vera

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Abstract— **This study aims to develop varieties of instant functional drinks made from the Ciplukan plant with the addition of Cassia vera. This plant has been known in West Sumatra, Indonesia, as a source of a traditional health drink with bitter after taste. In this experiment, the Ciplukan plant was combined with Cassia veraand sucrose, as additive material, to enhance the aroma and reduce the bitter taste, respectively. The concentrations of Ciplukan used in this research were as follows: A (0.2%), B (0.4%), C (0.6%), D (0.8%), and E (1%), with a composition of Cassia veraand sucrose;both were constant The observations was conducted for raw materials and the final product.Emphasis was thrown on the antioxidant capacity, chloroplyll content, physalin identification, and sensory test. The best product was a product with formula C (Ciplukan powder 0.6 g and Cassia vera 0.2 g), based on sensory with an average value insoluble parts (1.07%), soluble time (16.62 s), water content (0.76%), ash content (0.86%), Physalin (+), antioxidant activiy (39.63%), and chlorophyll content (6.67%). The results indicated that the development of instant functional drink made from the Ciplukan plant is promising to enrich the diversity of a functional drink in Indonesia.**

Keywords— **ciplukan, cassia vera, functional drink, antioxidant**

IPD-34

Tensile and Gel Strength of Different Biodegradable Starches and their blend with Polyvinyl Alcohol (PVA)

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Abstract— **Due to the increased use of a variety of petroleum-derived plastic and their non-biodegradable nature which cause environmental problems, the use of biodegradable plastics has been of great interest. Biodegradable plastics can be made from many different sources and materials. But the most preferable in biodegradable plastics industry is starch due to its renewability, its low cost and its biodegradability.**
In this study, starch based plastics are fabricated from potato, tapioca, glutinous and sago. To form films, two different samples were made, the first set of blends is composed of native starch and the second set formulation is 70% starch and 30% of PVA. Films with PVA are much easier to form compared to those without PVA. The strength performance of different starches i.e. tensile and gel strength was examined by tensile and bloom tests and structural investigation made via Fourier Transform Infra-Red Spectroscopy (FTIR).
The bloom tests showed that native sago has the highest value of gel strength (more than 300) and all samples without PVA have more gel strength, compared to those with PVA. Gel strength showed the elasticity of the polymer that is related to amylose content which have more linear chain structure. The different starches have different gel strength due to variable amylose content from various plant sources. The tensile strength was highest for native sago (100%) film and high rigidity film of highest modulus exhibited by Tapioca starch/ PVA samples. Tapioca thus exhibited more brittle features as compared to other blend. For structural investigation, FTIR tests showed significant hydroxyl absorption O-H bond for Starch PVA films with all cross-linked film exhibited C-O group absorption band between 1050 to 1200 cm^{-1}.

Keywords— **Starch; PVA; Biodegradable; Tensile Strength ; FTIR; Gel strength.**