

Security in  
food,  
renewable  
resources  
and  
natural  
medicines



# The 2<sup>nd</sup> International Conference on Security in Food, Renewable resources, and Natural Medicines 2018 (SFRN 2018)



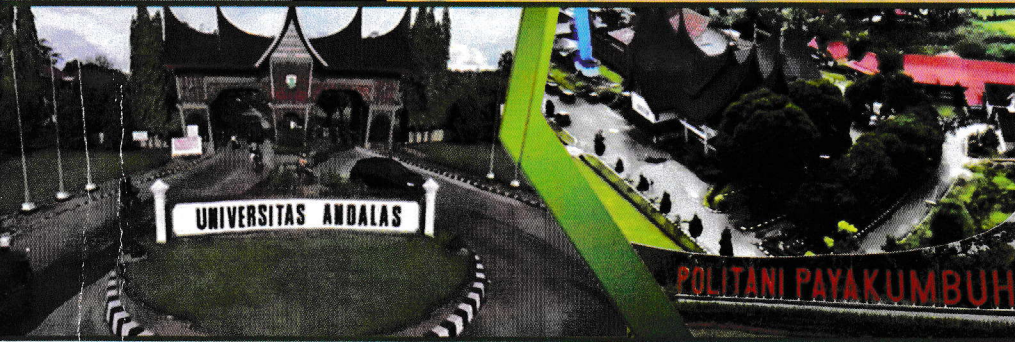
Organized by  
Universitas Andalas

Co-Host  
Politeknik Pertanian  
Negeri Payakumbuh

In collaboration with  
Indonesian Society of  
Agricultural Engineers

Editor:  
MUHAMMAD MAKKY

Convention Hall, Universitas Andalas  
Padang, West Sumatra, Indonesia  
October 25-26, 2018





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**Table of Contents**

Welcome Message  
 Conference Chair .....  
 Welcome Speech  
 Head of Institute for Research and Community Service  
 Opening Ceremony  
 Rector of Andalas University .....  
 SFRN 2018 Committee .....  
 Conference Programs  
 Day-1 .....  
 Day-2 .....  
 ABSTRACTS Keynote and Invited Speaker  
 Konstantinos A. Paschalidis .....  
 Eiji Morimoto .....  
 M. R. Sanjay .....  
 Ujung Gatot S Dinata .....  
 Zahid Iqbal .....  
 Muhammad Makky .....  
 ABSTRACTS Speakers  
 O-714/UA/PLT/IC-SFRN 2018 .....  
 O-715/UA/PLT/IC-SFRN 2018 .....  
 O-716/UA/PLT/IC-SFRN 2018 .....  
 O-721/UA/PLT/IC-SFRN 2018 .....  
 O-762/UA/PLT/IC-SFRN 2018 .....  
 O-782/UA/PLT/IC-SFRN 2018 .....  
 O-784/UA/PLT/IC-SFRN 2018 .....  
 O-708/UA/PLT/IC-SFRN 2018 .....  
 O-709/UA/PLT/IC-SFRN 2018 .....  
 O-785/UA/PLT/IC-SFRN 2018 .....  
 O-707/UA/PLT/IC-SFRN 2018 .....  
 O-713/UA/PLT/IC-SFRN 2018 .....  
 O-723/UA/PLT/IC-SFRN 2018 .....  
 O-788/UA/PLT/IC-SFRN 2018 .....  
 O-791/UA/PLT/IC-SFRN 2018 .....

|                                       |     |
|---------------------------------------|-----|
| O-783/UA/PLT/IC-SFRN 2018 .....       | 77  |
| O-792/UA/PLT/IC-SFRN 2018 .....       | 78  |
| O-817/UA/PLT/IC-SFRN 2018 .....       | 79  |
| P-822/UA/PLT/IC-SFRN 2018 .....       | 80  |
| O-820/UA/PLT/IC-SFRN 2018 .....       | 81  |
| O-827/UA/PLT/IC-SFRN 2018 .....       | 82  |
| O-759/UA/PLT/IC-SFRN 2018 .....       | 83  |
| O-775/UA/PLT/IC-SFRN 2018 .....       | 84  |
| O-776/UA/PLT/IC-SFRN 2018 .....       | 85  |
| O-802/UA/PLT/IC-SFRN 2018 .....       | 86  |
| O-818/UA/PLT/IC-SFRN 2018 .....       | 87  |
| O-757/UA/PLT/IC-SFRN 2018 .....       | 88  |
| O-749/UA/PLT/IC-SFRN 2018 .....       | 89  |
| O-720/UA/PLT/IC-SFRN 2018 .....       | 90  |
| O-725/UA/PLT/IC-SFRN 2018 .....       | 91  |
| O-764/UA/PLT/IC-SFRN 2018 .....       | 92  |
| P-768/UA/PLT/IC-SFRN 2018 .....       | 93  |
| P-769/UA/PLT/IC-SFRN 2018 .....       | 94  |
| P-780/UA/PLT/IC-SFRN 2018 .....       | 95  |
| O-795/UA/PLT/IC-SFRN 2018 .....       | 96  |
| O-796/UA/PLT/IC-SFRN 2018 .....       | 97  |
| O-797/UA/PLT/IC-SFRN 2018 .....       | 98  |
| O-798/UA/PLT/IC-SFRN 2018 .....       | 99  |
| O-799/UA/PLT/IC-SFRN 2018 .....       | 100 |
| P-803/UA/PLT/IC-SFRN 2018 .....       | 101 |
| P-805/UA/PLT/IC-SFRN 2018 .....       | 102 |
| O-807/UA/PLT/IC-SFRN 2018 .....       | 103 |
| O-810/UA/PLT/IC-SFRN 2018 .....       | 104 |
| O-812/UA/PLT/IC-SFRN 2018 .....       | 105 |
| O-814/UA/PLT/IC-SFRN 2018 .....       | 106 |
| P-819 / UA / PLT / IC-SFRN 2018 ..... | 107 |
| D-704/UA/PLT/IC-SFRN 2018 .....       | 108 |
| P-701/UA/PLT/IC-SFRN 2018 .....       | 109 |
| D-751/UA/PLT/IC-SFRN 2018 .....       | 110 |
| D-754/UA/PLT/IC-SFRN 2018 .....       | 111 |
| D-767/UA/PLT/IC-SFRN 2018 .....       | 112 |

THE STUDY OF VARIOUS COMPOSITIONS OF BIOLOGICAL FERTILIZER IN LIQUID ORGANIC FERTILIZER ON BIOLOGICAL LIQUID ORGANIK FERTILIZER QUALITY

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Abstract

Liquid fertilizer is a fertilizer made from animal waste which is still fresh from cows, goats, chickens and leaves that are composted in the water. The benefit of liquid fertilizer is that the elements in it have been described so that the plants can directly use these elements. Liquid organic fertilizer can be applied to plants through leaves. Application of organic fertilizer on leaves has three benefits, namely, fertilizing, sowing and treating plants. Nutrient content of liquid organic fertilizer is usually lower than compost therefore technology is needed to increase the efficiency of this liquid organic fertilizer by adding biofertilizers to it. The purpose of the study to determine the composition of biofertilizer that can improve the quality of biological liquid organic fertilizers. Factorial Randomized Complete Design was use in this experiment. First factor applied was biological Fertilizer levels (10, 20, 30 %). While the second factor applied was liquid organic fertilizer type namely 1) cow urine added organic matter, 2) water added organic matter, 3) water added molas. The results showed that the addition of biological fertilizers in liquid organic fertilizer can increase total N content from 0.013% to 0.196%, P<sub>2</sub>O<sub>5</sub> decreases from 0.036 to 0.026%, increases K<sub>2</sub>O content from 0.086% to 0.394% with pH 8.36 (alkaline atmosphere is very good for the development of biological fertilizer bacteria). Eh the solution increases with the thickening of the solution. Biofertilizer concentration did not affect the bacteria population in biological liquid organic fertilizer at the age of 14 days after inoculation. The highest bacterial population was found in the treatment of cow urine liquid organic fertilizer with the addition of 30% biofertilizer, namely  $29,333 \times 10^8$  CFU / 100ml samples

Keywords; biological fertilizer, organic fertilizer, biological liquid organik fertilizer

ISOLATION OF PHOSPHATE SOLUBILIZING and NITROGEN FIXING BACTERIA FROM GOLDEN SNAIL, BAMBOO SHOOTS, AND COCONUT WATER MEDIA PRODUCTION ON ALTERNATIVE MEDIA

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Abstract

Various types of microorganisms are beneficial for plants, especially phosphate solubilizing bacteria. Phosphate solubilizing bacteria can be packaged as one of the types of biological fertilizers. Microorganisms as biological fertilizers have been used to date. Therefore, it is necessary to develop agricultural biological fertilizers from indigenous isolates considering microorganisms are very diverse. In connection with this, it is necessary to develop biological fertilizers such as phosphate solubilizing bacteria. Isolates must be mass-produced on media that is easily available. The purpose of the study was to find indigenous bacterial isolates capable of phosphate solubilizing and nitrogen fixation. Indigenous bacteria were isolated from Golden Snail, IMO from Banana Stump and IMO from Coconut Water. Phosphate solubilizing bacteria are obtained by growing it on pikovskaya's medium. The mass production media used were Nutrient broth, Coconut water, soybean boiled water and Molasses. Bacteria that were isolated from IMO from banana stump were Bacillus, Aeromonas. Bacteria that were isolated from Golden Snail were Azotobacter, Azospirillum, Pseudomonas, lactobacillus. Bacteria that were isolated from bamboo shoots were Azotobacter, Azospirillum, Laktobacillus. The isolates found were capable of phosphate solubilizing, and nitrogen fixation. The growth of Pseudomonas sp. Azotobacter, Azospirillum in Molasses observation continues to increase and still shows population growth. Azotobacter and Aeromonas the highest and continues to grow in soybean boiled water.

Keywords : IMO from golden snail, IMO from banana stump, Coconut water media, Molasses

