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Semarang State University



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1st Unnes International Conference

on Research Inovation and Commercialization (UICRIC) for Better Life 2015

Patra Jasa Hotel Semarang, November 27 - 28th 2015



FOREWORD

First, we would like to express our gratitude to Allah Almighty for His blessings so that this proceeding of the “1ST UNNES International conference on research and commercialization for better life 2015” can be published. These proceedings consist of all papers presented at the conference on 27th-28th November 2015 at Patrajasa Hotel Semarang Central Java Indonesia. The papers were internally reviewed by the qualified reviewers.

The theme of the conference was “1ST UNNES International conference on research and commercialization for better life 2015”. It was expected that through this proceeding, we are able to disseminate the results of studies in the field of research.

This event invited seven speakers who presented materials closely related to the theme, namely: (by Prof. Muhammad Nasir), (by Prof. Fathur Rokhman), (by Prof. Prof. Rahim MD.Sail), (by Joop Van De Flier), (by Asst. Prof. Rotchanatach Darnsawadi), (Prof. Chow Yang lee) and (by Dr. Ayami Nakaya). We hope that this proceeding will be beneficial for the society in terms of education, research, and community services.

Semarang, 26th November 2015

Editorial Board

WELCOMING SPEECH FROM THE COMMITTEE CHAIR PERSON

In order to realize the vision of Semarang State University (UNNES) as the University of ¹³ conservation with an international repute, Institute for Research and Community Services (LP2M) establish 1st *UNNES International Conference on Research Innovation and Commercialization (UICRIC) for the better life 2015*. This event aims to increase the number of research publications and improvement of academic atmosphere through improving the quality of research works which we expect to occur downstream of research results to be a product that can be mass produced in an attempt to increase the welfare of society in general. It also aims to increase the capacity of researchers in generating better quality of research proposals in the future.

The scope of the research clusters that will be presented in this international seminar are: Education Innovations, Science and Technology, Quality of Life and Resource Development, Conservation, and the Art, Culture and Humanity.

Chairman of the Committee

¹⁵
Evi Widowati, S.KM., M.Kes.

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1. Prof. Dr. Totok Sumaryanto F.,M.Pd.
2. Prof. Dr. Ety Soesilowati, M.Si.
3. Prof Dr. Sucihatiningsih Dian Wisika Prajanti, M.Si.
4. Dr. Subiyanto, M.Si.
5. J. A. van der Flier
6. Prof. Rahim MD. Sail
7. Asst. Prof. Rotchanatch Darnsawasdi

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Medicinal Plants in Semarang State University

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Abstract—Back to nature concept develop follow the increasing of modern drug cost and side effect. Many people believe that traditional therapies give advantage more than modern drug, that are safe and cheap. Medicinal plant, one of traditional therapy, were used thousand years ago and exist until now. Many people prefer medicinal plant more than modern drug. Semarang State University occupies a high land area of 105 Ha. Cold temperature, fertile soil and large land is an ideal condition of medicinal plant growth. The potential of campus as source of medicinal plant were explored to get the kind of plant. A survey conducted to identified the medicinal plant in Semarang State University campus. The survey found 172 species of medicinal plants growth in all faculty. It consist trees, shrubs, bushes, herbaeus, liana, and bryoids. Suggested to explore the medicinal effect of plants and find scientific reason for using it.

Keywords—medicinal plant, traditional theurapeutic, Semarang State University campus

INTRODUCTION

Back to nature therapetic concept develop follow the increasing of modern drug cost, that too expensive for unfortune peoples. The people prefer used medicinal plant for many, i.e *Psidium guajava* leaf were used to treat diarrhea (1,2); *Apium graveolens L* for hypertension (3,4); garlic for hyperlipidemia; and etc. These fact showed the great potential to develop medicinal plant for theurapeutic agents.

Semarang State University occupies in a high land about 259 metres above sea level. This areas had cold temperature and enough sunshine. The campus lies in the Sekaran village covered about 105 ha. A fertile soil layer arranged the land given an advantage for growing of many kind of plants. Many species of plants potentially as medicine growth and covered the campus area need to identify. The study purpose to identify the species of medicinal plant in Semarang State University campus.

METHOD

Study Design

The study was located in the centre Semarang State University campus, Sekaran village. A survey conducted to identified the morphology and taxonomy of medicinal plant which found in Semarang State University area.

Classification of Plant

All data of plant species collected and classified based on characteristic of morphology. There were six categories included tree, shrub, bush, herbaceous, liana and bryopsida.

1. Tree, a woody plant having one erect parenial stem (trunk) at least three inches in diameters at a point 4-1/2 feet above the ground, a definitely formed crown of foliage and a mature height of at least 13 feet
2. Shrub, a small to medium-sized woody plant. It is distinguished from a tree by its multiple stems and shorter height, usually under 6 m (20 ft) tall. Shrub can be large and high, the branched not far from the surface of ground.
3. Bushes, a small, low shrubs, generally less than 2 m (6.6 ft) tall, such as lavender, periwinkle and most small garden varieties of roses
4. Herbaceous, a plants usually is wet, which are dry, stems, and its overall plant can not erect above the ground / water
5. Liana, the term more widely used class for vines and hanging plants. Liana were characterized with woody stems and not strong enough to support all parts of plant.
6. Bryopsida consist of moss, ferns, and fungus. The size is divided by high vegetation. The shape and size of leaves there is a large, wide, medium, and small (needles and grasses) and mix

RESULT

Two months survey founded 172 species of medicinal plant growth in campus areas. Medicinal plants in Semarang State University were found in eight faculties. The most number of species were found in Mathematic and Natural Science Faculty, and the fewest in Law Faculty.

The Species of Medicinal Plant

Medicinal plants in Semarang State University consist tree, shrub, bush, herbaceous, liana and bryoid. The most category were herbaceous, and the fewest were bryoid (table 1).

DISCUSSION

The environment influences existency of species in the world. The difference of climate, edaphic and biotic factors leads the difference species (7,8,9). Climatic factors included temperature, sunshine and season influence the number of species. Climate variables are most important in predicting distribution of plant at regional scale, particularly for trees (10).

6
 Edaphic factors are defined as ecological influences properties of the soil brought about by its physical and chemical characteristic. Edaphic factors are depend on soil, gas and water content in it. The differences of these factors often as major cause of the change on vegetation in the same area. Therefore, edaphic factors has important role for the distribution of plants in area (18). Soil is a place to grow and development of plants. Air, water, minerals, and organic matter (living and non-living) are the basic ingredients of soils. Fertility of soil are the main factors that influences the spread or distribution of the plant (11). The parameters of soil fertility, among others, are the content of humus or organic matter, soil elements, soil texture, and water content in the soil pores. Soil provides air to the roots and affects rate of growth of trees, yield of trees and natural regeneration.

Mathematic and Natural Science Faculty occupies the second place in wide area after Sport Science Faculty, but the the most number of species found there. It were caused by the difference use of land. Most of the lands in Sport Science Faculty were used for sport field, i.e tennis court, athletic track, swimming pool or volleyball court. Biology education garden are the most wide in Mathematic and Natural Science Faculty which had most of medicinal plants species.

CONCLUSSION

Semarang State University had a great potency as source of medicinal plants. This potency were caused by geographic and edaphic factors. High land, cold temperature and fertile soil give and advantage for grow and development of plants. A large number of medicinal plant species growing well, which cover tree, shrub, bush, herbaceous, liana and bryoid.

TABLE I. MEDICINAL PLANTS IN SEMARANG STATE UNIVERSITY CLASSIFIED BASE ON MORPHOLOGY

| Categories | The number of Species |
|------------|-----------------------|
| Tree | 33 |
| Shrub | 37 |

| Categories | The number of Species |
|------------|-----------------------|
| Bush | 19 |
| Herbaceous | 68 |
| Liana | 11 |
| bryoid | 4 |

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