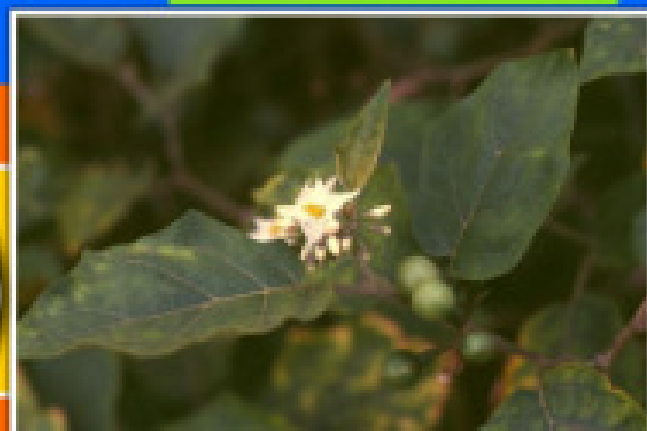
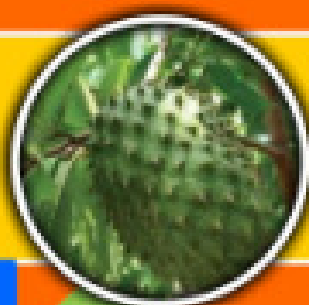
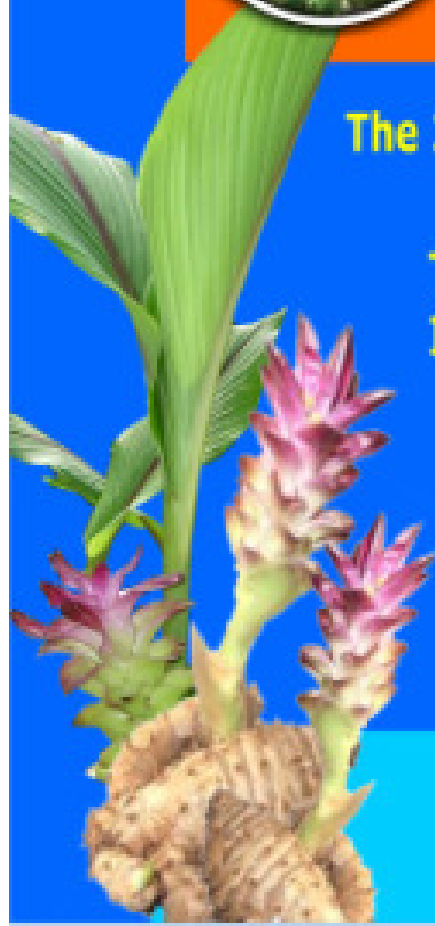


Proceedings



The 2nd International Symposium on Temulawak

**The 40th Meeting of National Working Group on
Indonesian Medicinal Plant**



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PROCEEDINGS OF THE 2nd INTERNATIONAL SYMPOSIUM ON TEMULAWAK AND THE 40th MEETING OF NATIONAL WORKING GROUP ON INDONESIA MEDICINAL PLANT



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Preface

Alhamdulillah, thanks to God, the Almighty, finally we were able to publish the Proceedings of The Second International Symposium on Temulawak. It is now ready for distribution and circulation among the related researchers, industries, and scientists around the world.

On behalf of the Scientific's Team, we would like to express our sincere appreciation to all members of the Steering Committee and the Organizing Committee for their encouragement, contribution, and assistance during the symposium and made it as a successful one. We also grateful to our editors members for their cooperation and valuable contribution during the proceedings preparation.

This proceedings is consisted of 93 titles manuscripts, which are divided into 4 chapters, including botany, efficacy, technology, and toxicity. Almost of the manuscripts are reported as research results on medicinal plants, not only regarding the efficacy but also cultivation and harvesting, written by some local and international experts in their fields. Many of them are attracted the attention due to the information of huge contribution of temulawak both in the traditional and complementary medical systems, and it is intended to raise awareness on the prospects and usage of temulawak as an important alternative commodity.

We do believe that this Proceedings of The Second International Symposium on Temulawak would enrich our knowledge not only in *temulawak* (*Curcuma xanthorrhiza*) but also *takokak* (*Solanum torvum*), soursop (*Annona muricata*), etc., and turn out to be beneficial to mankind. We hope that it will serve as a useful reference for all concerned with the research and sustainable development of related industries.

Thank you very much.

Best regards,
The Editors

*Remark from
The Chairperson of Organizing Committee of*

The 2nd International Symposium on Temulawak
the 40th Meeting of National Working Group on Indonesian Medicinal Plant

Praise and gratitude towards Allah who has given His Grace so that the Symposium with theme of globalization of Jamu Brand Indonesia could be conducted in IPB International Conference Center on May 24-29, 2011.

As Chairperson of the second International Symposium on Temulawak (*Curcuma xanthorrhiza*), which is also the 40th Meeting of National Working Group on Indonesian Medicinal Plant, I would like to welcome all of you in this symposium. It is my great pleasure that we successfully organized this even with other satellite meetings composing of workshop quality assurance, workshop on natural therapy, business meeting, and scientific output dissemination. We also successfully conducted *Batik* Design Competition and Temulawak Welcome Drink Formula competition. In conjunction with symposium presentation, there is the exhibition of Jamu Products held throughout the symposium period.

The symposium is organized by Bogor Agricultural University (IPB) in collaboration with various government and private institutions as well as foreign parties. The aim of the symposium is to promote the utilization and research development of temulawak as Indonesian medicinal herbal toward healthy life of global society.

The conference has brought 535 participants coming from Indonesia and overseas, 190 research paper with various topics coming from researcher of many institutions, 148 batik designs and 67 workshop participants, 14 invited speakers coming from Indonesia, Japan, Hungaria, India, Malaysia, and the Netherlands. There will be 48 oral presentations and 128 poster presentations coming from Indonesia and overseas. In this occasion we also launch the Indonesian road map Jamu and database of Indonesian jamu.

We wish to thank the meeting sponsors and co-sponsors for their support, without which this symposium would not have been possible. Their support greatly facilitated the participation of several researchers from abroad, accommodation, exhibition, small/medium entrepreneurs, and farmers to joint this event.

Ladies and gentlemen, and all participants,

Due to our limitation, we do apologize for any inconvenience during the symposium. We are grateful for the advice and support of the Steering Committee. We wish to the guest speakers, papers contributors, participants and sponsors for their cooperation in organizing this symposium.

Finally, on behalf of the Organizing Committee, I would like to express my gratitude and hoping that all of you will have a nice symposium and enjoy the atmosphere of Bogor "Rain" City.

Thank you,

Dr Min Rahminiwati

*Acknowledgement from
Rector of the Bogor Agricultural University*



RECTOR SPEECH

The 2nd International Symposium on Temulawak
the 40th Meeting of National Working Group on Indonesian Medicinal Plant

Assalamualaikum wr. wb.
Salam sejahtera bagi kita semua
Good morning.

It is our pleasure today that we are all here to attend the important event so called 'Globalization of Jamu Brand Indonesia' which consists of several agenda such as the 2nd International Symposium on Temulawak (*Curcuma xanthorrhiza*); the 40th Meeting of National Working Group on Indonesian Medicinal Plant; Workshops, Business Meeting, Jamu Festival, 'Jamu' Batik Design Competition and Temulawak 'Welcome Drink' Formula Competition here in Bogor, Indonesia.

As most of us may still remember that 3 years ago, in 2008, I attended 'Gelar Kebangkitan Jamu Brand Indonesia' and the First International Symposium on Temulawak. The event was officially opened by the President of the Republic of Indonesia, in *Istana Negara*, Jakarta; while the symposium was held here in the same place, IPB International Conference Center. Now, we are here again to attend the Globalization of Jamu Brand Indonesia. For the two important events, held in 2008 and 2011, multisectors and international stakeholders are involved, and IPB is significantly taking parts. This clearly indicates that continuous improvement to achieve our goal, to make Jamu for the World Quality of Live, is really our concern.

We all know that Indonesia is the second largest countries in the world regarding biodiversity. The Indonesian people are used to their natural resources with knowledge they inherited from their ancestors. For example, medicinal plants, animals, and microbes are applied as preventive, promotive and curative alternatives. Jamu has long been known and applied by the society; and nowadays, there is also an increasing tendency of using herbal medicine that is popularly known as 'back to nature' for curing diseases worldwide. Jamu business keeps increasing, I heard that almost reach to 10 trillion IDR in 2010; and the support from Indonesian government becomes stronger and real actions have also been conducted, such as: Scientification of Jamu, and Roadmap of Jamu Development will be launched and used as a national guidance for Jamu development. So I believe that through the strong commitment from Jamu stakeholders, our vision that Jamu for the World Quality of Live can be achieved in the near future.

Distinguish Guest, Ladies, and Gentleman,

Bogor Agricultural University (IPB) with its vision to becoming a world class research university with core competences in tropical agriculture and bioscience with entrepreneur character, and one of our mission is to improve the welfare of human beings through the application of developed science and technology are clearly in line with our effort to improve Jamu development.

Within this context, Biopharmaca Research Center IPB keeps focusing its research development and optimizing its efforts to develop qualified biopharmaca products with the support of strong networking with international and national partners. IPB also contributes to the national policy development of Indonesian biopharmaca and committed its existence in education and research development in order to achieve national and international reputation. Currently, IPB is proposing the establishment of Indonesian Biopharmaca Center (IBC) through the support of Japan International Corporation Agency (JICA), and the visibility study of the project is now being conducted. The IBC is expected to be a center of excellence in Biopharmaca Research Development within the country and will contribute to international reputation.

Today as part of Globalization of Jamu Brand Indonesia, we also have an important international event, namely "The 2nd International Symposium on *Temulawak (Curcuma xanthorrhiza)*" which is conducted by Biopharmaca Research Center, IPB in collaboration with Indonesian government institutions, private sectors, and foreign partners. The theme of the symposium is utilization and application of *Curcuma xanthorrhiza* through scientific and technological approach toward better and healthy life.

We know that temulawak is known as one of the Indonesian indigenous herbals, which mostly used as the main ingredient for traditional medicine or 'Jamu'. The popularity of temulawak is increasing along with its commercial use and research result applications. Many scientists have conducted research to reveal the secret of temulawak. Temulawak can be used for various purposes such as for maintaining human health, animal health, and supplement beverages to increase appetite and to keep fresh our stamina. As a continuation of our commitment, IPB is conducting various aspects of research based on temulawak, e.g. brain tonic, cardiovascular diseases, diabetic; further, our research output on avian flu has been registered for patent.

Nowadays, in the middle of modern lifestyle, temulawak is occupying place in our society's heart and with its various benefits, thus temulawak deserves to be Indonesian "ginseng" herbal. IPB fully support the three days activities involving researchers and scientists all over the world to share their experience and expertise which will be conducted in IPB International Convention Center.

We do hope that through Globalization of Jamu Brand Indonesia which are involving biopharmaca stakeholders within the country and abroad, modernization of Indonesian medicine/Jamu will be accelerated and generated benefits to increase our health and welfare.

We would like to ask to the Minister of Coordinator of People's Welfare, Republic of Indonesia to officially open The Globalization of Jamu Brand Indonesia.

Finally, thank you to all of ypu who make this precious event possible.

Billahi taufik wal hidayah, wassalamualaikum wr.wb.

Bogor, May 26, 2011
Rector of IPB,

Prof Dr Herry Suhardiyo, MSc

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