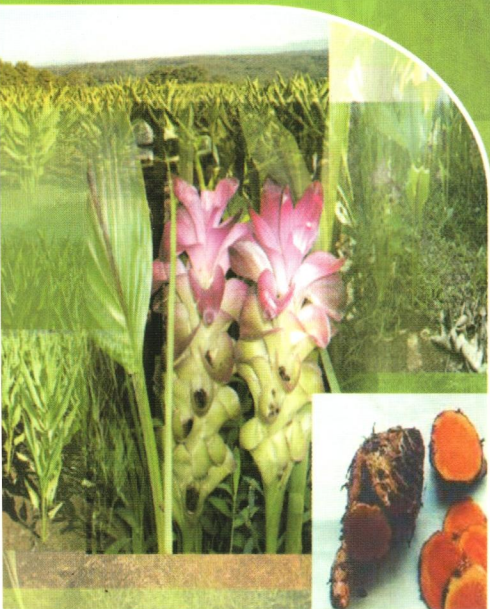


THE FIRST INTERNATIONAL SYMPOSIUM ON TEMULAWAK

(*Curcuma xanthorrhiza* Roxb.)

Curcuma xanthorrhiza
as an Essential Indonesian Herbal
Medicine toward Healthy Life

Programs and Abstracts



IPB International Convention Center (IICC),
Botani Square, Jl Pajajaran, Baranangsiang,
Bogor, Indonesia
May 27 - 29, 2008



Helmig's® **CURCUMIN** + Vitamin C

THE FIRST INTERNATIONAL SYMPOSIUM ON TEMULAWAK

(*Curcuma xanthorrhiza* Roxb.)

Curcuma xanthorrhiza

as an Essential Indonesian Herbal

Medicine toward Healthy Life

Programs and Abstracts

IPB International Convention Center (IICC),

Botani Square, Jl Pajajaran, Baranangsiang,

Bogor Indonesia

May 27 - 29, 2008

Day II (May 28, 2008)

Keynote Session II

Room : Ballroom I

Moderator : Dr. Bambang Pontjo Priosoeryanto

| Time | Code | Title | Presenter |
|---------------|------|---|--|
| 08.30 – 09.00 | K-03 | Temulawak (<i>Curcuma xanthorrhiza</i> Roxb.), Indigenous medicine, botani, chemistry and pharmacology | Prof. H. R. Sidik (Faculty of Pharmacy, Padjadjaran University, Indonesia) |
| 09.00 – 09.30 | K-04 | | Prof. Si Yinchu (Beijing University Chinese Medicine, China) |
| 09.30 – 10.00 | K-05 | Molecular Analysis, Identification and Quality Evaluation of Curcuma Drugs From China and Japan | Prof. Katsuko Komatsu (Div. of Pharmacognosy, Dept. Of Medicinal Resources Institute of Natural Medicine, University of Toyama, Japan) |
| 10.00 – 10.30 | | Tea / Coffee Break | |

Moderator : Prof. C Hanny Wijaya

| Time | Code | Title | Presenter |
|---------------|------|--|--|
| 10.30 – 11.00 | K-06 | Temulawak (<i>Curcuma Xanthorrhiza</i> Roxb.) as a potential medicinal plant for herbal industry: land suitability, metabolite profile and bioactivity. | Prof. Latifah K. Darusman (Biopharmaca Research Center, Bogor Agricultural University, Indonesia) |
| 11.00 – 11.30 | K-07 | Turmeric (<i>Curcuma longa</i>): Current Perspective on Chemistry Technology Bioactivities and Health benefits | Dr. L. Jagan Mohan Rao (Plantation Products, Spices and Flavour Technology Department Central Food Technological Research Institute Mysore, India) |
| 11.30 – 11.40 | | Bisnis Presentation | |
| 11.40 – 12.40 | | Lunch Break | |

The File

lawak (*Curcuma xanthorrhiza* Roxb.)

Moderator : Prof. C Hanny Wijaya

| Time | Code | Title | Presenter |
|---------------|------|--|--|
| 12.40 – 13.10 | K-08 | Bioactive constituents from zingiberaceous species and the future of herbal medicines | Prof. Nordin Hj. Lajlis (Laboratory of Natural Products Institute of Bioscience University Putra Malaysia-Malaysia) |
| 13.10 – 13.40 | K-09 | Antifungal and antibiofilm activity of xanthorrhizol isolated from Javanese turmeric or temulawak (<i>Curcuma xanthorrhiza</i>) | Dr. Yaya Rukayadi, (Biomaterials Research Laboratory, Department of Biotechnology, College of Engineering, Yonsei University, Korea) |
| 13.40 – 14.10 | K-10 | Inhibition of Curcumin Analogues To Cytochrome P450 Isoenzymes Activity and The Quantitative Structure Activity Relationships (QSARs). | Dr. Mayagustina Andarni (Directorate of Indonesia Medicinal, Indonesia Food & Drug Agency /BPOM and Prof.NPE.Vermeulen LACDR-Section of Molecular Toxicology,Dept of Chemistry & Pharmacology, Vrije Universiteit Amsterdam-The Nederland) |
| 14.10 – 14.30 | | Tea / Coffee Break | |

Paralel Session II

Room : Ballroom I

Topic : Technological Process of Temulawak

Moderator : Dr. Sulistiani

| Time | Code | Title | Presenter |
|---------------|---------------------------------|--|---|
| 14.30 - 14.45 | O-18 | A Novel Water-Soluble Turmeric Colourant Formulation and its food applications | S Nagarajan, JM Rao |
| 14.45 - 15.00 | O-19 | Correlation and Path Analysis among Growth and Yield Components To Essential Oil Production of Temulawak | L Dey, Sobir and DR Sastira |
| 15.00 - 15.15 | O-20 | The Extract of Temulawak As a Light Antenna In 3rd Generation Solar Cell | Sonyatia and S Akhlus |
| 15.15 - 15.30 | Discussion | | |
| 15.30 - 15.45 | O-21 | Techno-Economical Aspect On Irradiation Technology Application To Handle Postharvest of <i>Curcuma xanthorrhiza</i> Roxb | I Kadir, R Chosdu |
| 15.45 - 16.00 | O-22 | Research of <i>Curcuma xanthorrhiza</i> Extract for Cosmetic Use | M Tilaar, LW Wong, AS Ranti, SM Wasitaatmadja, Maily, Suryaningasih, FD Junardy |
| 16.00 - 16.15 | O-23 | Formulation of Functional Drink Containing Java Turmeric (<i>Curcuma xanthorrhiza</i>) | CH Wijaya, Herold, S Indriani |
| 16.15 - 16.30 | Discussion | | |
| 16.30 - 16.50 | Exhibition | | |
| 16.50 - 17.30 | 1. Closing Ceremony 2. Award | | At the Ballroom |

Room : Meeting Room I

Topic : Biology of Temulawak

Moderator : Dr. Yulin Lestari

| Time | Code | Title | Presenter |
|---------------|------|--|--|
| 15.10 - 15.25 | O-13 | Response of Three Promising Lines of <i>Curcuma xanthorrhiza</i> Roxb On Organic and Inorganic Fertilizer Applications | M Rahardjo, N Ajjah, Gusmaini, M Rizal |
| 15.25 - 15.40 | O-14 | Distribution Map of <i>Curcuma xanthorrhiza</i> R. and Its Characteristic in | B Barus, M Gulamahdi, |

| | | | |
|---------------|---------------------------------|---|--|
| 15.25 - 15.40 | O-14 | Distribution Map of <i>Curcuma xanthorrhiza</i> R. and Its Characteristic in Indonesia | B Barus, M Gulamahdi, A Sulandi, DI Pradono, ED Purwakusumah LK Darusman |
| 15.40 - 15.55 | O-15 | Analysis of Essential oil components from fresh leaves <i>Piper crocatum</i> Ruiz & Pav. and <i>Curcuma domestica</i> Val | AZ Adnan, Z Noer, Zulzannah |
| 15.55 - 16.10 | Discussion | | |
| 16.10 - 16.25 | O-16 | Development of model for <i>Curcuma xanthorrhiza</i> R. in Indonesia | A Sulandi, B Barus, ED Purwakusumah, DI Pradono, LK Darusman |
| 16.25 - 16.40 | O-17 | Effect Of Fungal Endophytes On Growth Of <i>Curcuma xanthoriza</i> And It's Curcumin Content | ST Putra, RO Khaslini, N Sukarno, UW Suharsono, DI Pradono, J Abe |
| 16.40 - 16.50 | Discussion | | |
| 16.50 - 17.30 | 1. Closing Ceremony 2. Award | | At the Ballroom |

Room : Meeting Room II

Topic : Biology of Temulawak

Moderator : Dr. Erni Sulistiawati

| Time | Code | Title | Presenter |
|---------------|---------------------|---|--|
| 15.10 - 15.25 | O-24 | The Origin of <i>Curcuma xanthorrhiza</i> Roxb. - where is it native? | M Ariyani, JL-Skornickova |
| 15.25 - 15.40 | O-25 | The Biology of Temulawak (<i>Curcuma xanthorrhiza</i> Roxb.) | MS Prana |
| 15.40 - 15.55 | O-26 | Opportunity of Temulawak under kesambi (<i>Scheleira oleosa</i>) Stands | T Rostiwati, AS Kosasih and H Santoso |
| 15.55 - 16.10 | Discussion | | |
| 16.10 - 16.25 | O-27 | Isolation, Identification, Modification and Bioactivity of Phytochemicals from <i>Curcuma xanthorrhiza</i> Roxb | HM Sirat, LL Meng, NM Hong, and MH Jauri |
| 16.25 - 16.40 | O-28 | Potential Use Of Nano-Tube Imogolite For Supporting Drug Material : Photo Sheltering Effect | Z Abidin, N Hidayati, N Matsue, T Henmi |
| 16.40 - 16.50 | Discussion | | |
| 16.50 - 17.30 | 3. Closing Ceremony | | At the Ballroom |

0-23

FORMULATION OF FUNCTIONAL DRINK CONTAINING JAVA TURMERIC (*Curcuma xanthorrhiza*)

C. Hanny Wijaya^{1,2)}, Herold¹⁾ and Susi Indriani²⁾

¹⁾ Dept. Food Science and Technology, Faculty of Agricultural Technology
Bogor Agricultural University, Bogor-INDONESIA

²⁾ Biopharmaca Research Center, Bogor Agricultural University, Bogor-INDONESIA

Development of new functional drink formulations enriched with bioactive ingredients in order to highlight their functionality and effect on human health are becoming popular recently. The challenge of developing this kind of drink is not only on the effectiveness of its bio-ability but also on the acceptance of consumers toward its flavor and appearance. This research aimed to formulate a mixture drink containing temulawak which having higher antioxidant activity comparing to the other commercialized traditional functional drinks as well as acceptable in its flavor and colour. The research has been carried out by preparing extract of each ingredients, formulating a model drinks, then continuing with optimization the selected formula by Mixture Experiment approach using Design Expert 7.0® software and at last the selected formula has been stored to monitor its stability in different level of temperatures. The products has been analyzed for their sensory, antioxidant activity, physico-chemical properties, total polyphenols content and total microbes. A new formulated mixture drink containing extracts of temulawak, java-tea, sappan wood, ginger and lemon has been established. This functional drink has antioxidant capacity as 621.78 ppm AEC, higher comparing to several commercial similar drinks. There was no different in hedonic acceptance scores (moderate like) of flavor and color comparing to the commercial drinks. The stability of this drink should be improved since it only can be stored up to 15 days. No significant changes in polyphenols content during storage.

0-24

THE ORIGIN OF *Curcuma xanthorrhiza* Roxb. WHERE IS IT NATIVE?

Marlina Ardiyani¹ & Jana Leong-Skornickova²

¹⁾ Herbarium Bogoriense, Botany Division, Research Centre for Biology,
LIPI, Cibinong Science Centre, Cibinong-INDONESIA

²⁾ The Herbarium, Singapore Botanic Gardens, SINGAPORE

Curcuma xanthorrhiza has played an important role in traditional Indonesian folk medicine for several centuries. The species was described in 1820 based on a specimen from Ambon. It has been regarded as a native species to Indonesia since then. It is however known to be widely distributed in Asia, including China, India, Sri Lanka, Burma, Thailand, Vietnam and the Malasian region and various ethnobotanical uses were reported. *Curcuma xanthorrhiza* is a highly polyploid sterile species ($2n = 9x = 63$) reproducing exclusively vegetatively. There are 16 *Curcuma* species in Java with only two species, namely *C. aurantiaca* Zijp and *C. mangga* Valeton & Zijp ($2n = 6x = 42$), capable of setting seeds, the other 14 species being sterile. Possible ancestors of these sterile species, including *C. xanthorrhiza*, seem to be missing in Java, but are potentially present in countries with monsoonal climate and high *Curcuma* diversity e.g. India, Burma and Thailand. The presented paper explores the origin of *C. xanthorrhiza* and discusses its morphological similarity with other Javanese *Curcuma* species sharing the character of orange rhizomes such as *C. brogii*, *C. soloensis*, *C. euchroma* and *C. colorata*, of which some could be misidentified as Temu Lawak. The most recent investigations based on analysis of genome sizes and chromosome counts suggest that several South Indian high polyploid *Curcuma* species including *C. xanthorrhiza* have arisen from seed setting *Curcuma* species in NE India. Notably both Javanese seed-setting species, *C. aurantiaca* and *C. mangga*, also occur in South India. It is likely that none of *Curcuma* species in Java is native and they might have been brought to Indonesia through the early human migration from Indian subcontinent - a theory yet to be confirmed by molecular markers in our future study.