Preface

This proceeding is a compilation of scientific papers presented in the 2nd International Seminar on Biosciences and Biotechnology: "Pave the Way to A Better Life" held at the University of Udayana on 23rd – 24th 2010. It includes papers (for oral and poster presentations) presented by Keynote speakers, Invited speakers, and active participants.

This conference was designed in order to gather scientists, engineers, practitioners, and industries in Biological related disciplines, so that they could discuss and share their expertise in the fields of Biosciences and Biotechnology related issues. From this intense discussion, it was expected that some brilliant ideas to be used to improve the quality of human life could be formulated, so that it was in line with the theme of the conference: "Biosciences and Biotechnology pave the way to a better life".

This 2nd International conference was held in relation to the Udayana University Anniversary and is expected to be held yearly, so that this event becomes the icon of the Udayana University in the future. The conference consisted of 8 plenary presentations delivered by keynote and invited speakers with International reputations from Japan, Australia, and Indonesia, covering general aspects of Biosciences and Biotechnology. Besides this plenary sessions, we also had four satellite symposia covering areas of health, agricultural technology and food science, agriculture, and biodiversity and environment. Totally, 175 contribution papers (oral and poster presentation) were presented in this conference and they were distributed according to the areas mentioned above. The efforts of the presenters to prepare their contribution papers for this conference are highly appreciated.

This Conference was financially supported by the Rector of Udayana University through the program of Vice Rector I (Vice Rector for Academic Affair) and some sponsors (Monsanto and Kanisius press). Therefore, in this occasion, on behalf of the committee, I would like to acknowledge their financial support.

My thanks should also go to all people who were involved in the committee of the conference. Without their hard working and efforts, I am afraid would not be able to make this event to happen.

Last but not least, I hope you all enjoyed your time in Bali, not only at the venue of the conference, but also enjoyed the beauty of Bali and the friendliness of the people, so that you all brought home some unforgettable memories about the island of Bali. See you again here next year.

Chairman of the Organizing Committee

Drs. Yan Ramona, M.App.Sc., Ph.D.
Forewords—Rector of Udayana University

Dear Distinguished guests, Invited speakers, and all other participants

This second International Conference on Biosciences and Biotechnology with the theme of Bioscience and Biotechnology pave the way to a better life is a continuation of the first International conference successfully held last year, in relation of the Udayana University Anniversary. The main aim of this conference is to gather scientists from all over the world in a venue to share their expertise in Biosciences and Biotechnology and build scientific network, so that they can develop Biosciences and Biotechnology-based methods for improving the quality of human life in the future.

In this opportunity, on behalf of the University, I welcome you all to Bali. Bali is well known as a favorite tourist destination in the world. Recently, it is also a favorite site for holding International events, such as International Conference. When people hear Bali as a site of an International conference, a lot of them will be interested to attend the event. By attending such an event in Bali, they can do two things at once. They can present scientific papers and share their expertise with other scientists known to have International reputation, and at the same time they can also enjoy the beauty of the Bali Island and the culture of Bali which is considered to be unique by foreign tourists.

Here, I would also like to acknowledge the National and International invited speakers for their willingness to come miles away to Bali and present their high standard papers. I understand that you all spend much time for this conference, and therefore I must give high appreciation on all of those effort and dedication.

I hope this International Conference become an annual agenda of Udayana University and become an ideal forum for communication and sharing ideas as well as experience in Biosciences and Biotechnology-related disciplines in the future. I also hope that this forum can serve as a forum for promoting advanced Biosciences and Biotechnology with regard to economic growth and social welfare.

Finally, I wish you most successful conference and hope that it may provide new ideas and strategies for the application of Biosciences and Biotechnology in the industries.

Rector of Udayana University,
Prof. Dr. Dr. I Made Bakta, Sp.Pd (K).
<table>
<thead>
<tr>
<th>No.</th>
<th>Content</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Keynote Presentation</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>USE OF IN VITRO BREEDING STRATEGIES IN THE DEVELOPMENT OF NATIVE PLANTS</td>
<td>KP-1</td>
</tr>
<tr>
<td></td>
<td>Acram Taji and Richard Williams</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>STEM CELL AND ITS MICROENVIRONMENT</td>
<td>KP-2</td>
</tr>
<tr>
<td></td>
<td>Ferry Sandra</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>THE DEVELOPMENT OF REVERSE GENETIC TO DEVELOP VACCINE TO CONTROL BIRD FLU IN POULTRY IN INDONESIA</td>
<td>KP-3</td>
</tr>
<tr>
<td></td>
<td>I Gusti Ngurah Mahardika, I Nyoman Suartha, and Melina Jonas</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Review</td>
<td>KP-4</td>
</tr>
<tr>
<td></td>
<td>GENE ISOLATION BY USING TRANSPONSON AND T-DNA TAGGING METHODS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I G.K. Susrama, I G.N. Bagus, and I G.P. Wirawan</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>WHY ARE THE NETWORKS FOREST ECOSYSTEM? FROM THE BIOLOGY OF ARMIILLARIA AND TERMITOMYCES</td>
<td>KP-10</td>
</tr>
<tr>
<td></td>
<td>Jooyoung Cha and IGP Wirawan</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>ONLINE SIMULATION OF BIOPROCESSES</td>
<td>KP-11</td>
</tr>
<tr>
<td></td>
<td>Klaus-Uwe Gollmer</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ELICITORS INDUCING PLANT DEFENSE RESPONSES</td>
<td>KP-14</td>
</tr>
<tr>
<td></td>
<td>Kazuhito Kawakita</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>THE CONTROL OF GONADOTROPIN-RELEASING HORMONE (GNRH) IN MAMMALS: A WAY TO IMPROVE THE FERTILITY IN DOMESTIC ANIMALS</td>
<td>KP-23</td>
</tr>
<tr>
<td></td>
<td>Kei-ichiro Maeda, Kinuyo Iwata, Yoshihisa Uenoyma, Satoshi Ohkura and Hiroko Tsukamura</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>CONSERVATION ACTIVITIES OF AN ENDANGERED ANIMAL</td>
<td>KP-29</td>
</tr>
<tr>
<td></td>
<td>Mitsuaki Ogata</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>CELL WALL DEGRADATION AND MODIFICATION ENZYMES OF C.R.A.-4- POSITIVE BACTERIA: HISTORY, IMPORTANCE AND FUTURE ASPECTS</td>
<td>KP-33</td>
</tr>
<tr>
<td></td>
<td>Sekiguchi J.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>STRUCTURAL ANALYSIS OF THE PHOTOREACTIONS OF FLAVIN-BINDING PROTEINS BY FTIR SPECTROSCOPY</td>
<td>KP-36</td>
</tr>
<tr>
<td></td>
<td>Tatsuya Iwata</td>
<td></td>
</tr>
</tbody>
</table>

Bali, Indonesia | 23-24 September 2010
<table>
<thead>
<tr>
<th></th>
<th>ORAL PRESENTATION: AGRICULTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GROUND WATER USE EFFICIENCY BY MAIZE CROP UNDER DIFFERENT IRRIGATION TECHNIQUES</td>
</tr>
<tr>
<td></td>
<td>I Komang Damar Jaya and I Nyoman Soemeinaboedhy</td>
</tr>
<tr>
<td>2</td>
<td>DISTINCT CHARACTERISTICS OF CHRYSANTHEMUM VIRUS B (CVB) ISOLATED FROM CHRYSANTHEMUM IN INDONESIA</td>
</tr>
<tr>
<td></td>
<td>I Gede Rai Maya Temaja</td>
</tr>
<tr>
<td>3</td>
<td>ALLELOPATHIC EFFECT OF Wedelia trilobata, Ageratum conyzoides, Chromolaena odorata AND Mikania micrantha ON GREEN MUSTARD GROWTH</td>
</tr>
<tr>
<td></td>
<td>Nanik Setyowati, Uswatun Nurjanah and Donly Avrin Togatorop</td>
</tr>
<tr>
<td>4</td>
<td>PHYSIOLOGICAL RESPONSE OF TOMATO (Lycopersicum esculentum MILL. CV. KALIURANG) TREATED WITH NPK FERTILIZER AND PACLOBUTRAZOL</td>
</tr>
<tr>
<td></td>
<td>Kumala Dewi, Edy Widayanta, and Issirep Sümürdi</td>
</tr>
<tr>
<td>5</td>
<td>PROMOTING GROWTH AND TUBER FORMATION OF POTATO PRODUCTION AT LOWLAND BENGKULU BY APPLYING ANTI-GA (GIBERELLIC ACID) AND LOWERING SOIL TEMPERATURES</td>
</tr>
<tr>
<td></td>
<td>Fahrurrozi, Usman Kris Joko Suharjo, Sigit Sudjatmiko, and Popi S</td>
</tr>
<tr>
<td>6</td>
<td>ANTI SURFACE UNIT (SU) ANTIBODY RESPONSE OF BALB/C MICE IMMUNIZED WITH SPLEEN AND TISSUE CULTURE VACCINE OF JEMBRANA DISEASE VIRUS</td>
</tr>
<tr>
<td></td>
<td>Ni Luh Putu Manik Widiyanti</td>
</tr>
<tr>
<td>7</td>
<td>SUCCESSIVE SPAWNING STUDY ON AUSTRALIAN RED CLAW CRAYFISH (Cherax quadricarinatus): I. EFFECT OF PROTEIN AND ENERGY CONTENT OF FEED ON DURATION INTER SPAWNING</td>
</tr>
<tr>
<td></td>
<td>Muhammad Idris, Tjandra Anggraeni, Ahmad Ridwan, and Edy Yuwono</td>
</tr>
<tr>
<td>8</td>
<td>THE 5'-END NON-CODING REGION AND CODING REGION OF POLYMERASE GENE COMPLEX OF BIRD FLU VIRUS FROM POULTRY AND SWINE IN INDONESIA</td>
</tr>
<tr>
<td></td>
<td>Kencana Y., Asmara W., Tabbu CR and Mahardika IGNK</td>
</tr>
<tr>
<td>9</td>
<td>EMBRYOGENIC CALLUS INDUCTION FROM MALE INFLORESCENCE OF LOCAL BANANA CULTIVARS WITH A VIEW TO PRODUCE FUSARIUM WILT RESISTANT PLANT VIA IN VITRO SELECTION</td>
</tr>
<tr>
<td></td>
<td>Sugiyono, Alice Yuniaty and Lucky Prayoga</td>
</tr>
<tr>
<td>10</td>
<td>BRINGING DOWN POTATO CROPS TO LOWER ELEVATIONS IN INDONESIA</td>
</tr>
<tr>
<td></td>
<td>Usman Kris Joko Suharjo</td>
</tr>
<tr>
<td>11</td>
<td>SUSTAINABLE MANAGEMENT OF LAND AGRICULTURE IN BALI BASED ON SOIL HEALTH</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>I Made Adnyana</td>
</tr>
<tr>
<td>12</td>
<td>THE EFFECT OF “EFFECTIVE MICROORGANISMS-4” (EM4&quot;) AND STARBIO ON THE PERFORMANCE OF CHERRY VALLEY (CV) 2000 DUCK AGED OF 0 – 4 WEEKS OLD</td>
</tr>
<tr>
<td></td>
<td>Indrawati, RR., NM Laksmiwiati, and IK Anom Wiyana</td>
</tr>
<tr>
<td>13</td>
<td>SMALL-SCALE ORGANIC FARMING EMPOWERMENT FOR LOWER-MIDDLE INCOME COMMUNITY (A SYSTEMATIC APPROACH FOR NATIONAL FOOD SECURITY AND POVERTY REDUCTION)</td>
</tr>
<tr>
<td></td>
<td>Nyoman Sutarsa</td>
</tr>
</tbody>
</table>

**ORAL PRESENTATION: AGRITECH AND FOOD**

<table>
<thead>
<tr>
<th>1</th>
<th>STRUCTURE AND ABSOLUTE CONFIGURATION OF BIOACTIVE 3 ALKYLPIPERIDINE ALKALOIDS FROM A BALINESE MARINE SPONGE OF THE GENUS HALICHONDRIA</th>
<th>OAF-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I Wayan Mudianta, Peter L. Katavic, Lynette K. Lambert, Patricia T. Hayes, Martin G. Banwell, Murray H. G. Munro, Paul V. Bernhardt, and Mary J. Garson</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>EFFECT OF AMYLOSE CONTENT AND TEMPERING TIME ON CHARACTERISTICS OF FRESH RICE FLOUR-BASED SPRING ROLL WRAPPERS</td>
<td>OAF-4</td>
</tr>
<tr>
<td></td>
<td>A. Ingani Widjajaseputra, Harijono, Yunianta and Teti Estiasih</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SYNERGISTIC SACCHARIFICATION PROCESS OF DIFFERENT SOURCES OF STARCH BY GLUCOAMYLASE AND PULLULANASE IN THE GLUCOSE SYRUP PRODUCTION</td>
<td>OAF-8</td>
</tr>
<tr>
<td></td>
<td>Yunianta</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CONSTRUCTION OF pYαF-Af VECTOR FOR SECRETION OF α-L-ARABINOFRANOSIDASE (AbfA) IN Saccharomyces cerevisiae</td>
<td>OAF-13</td>
</tr>
<tr>
<td></td>
<td>I Nengah Wirajana, Ni Nyoman Tri Puspaningsih, Eddy Bagus Wasito, Sockry Erfan Kusuma, Tetsuya Kimura and Kazuo Sakka</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>MICROPATTERNED BIOACTIVE LAYER ON NONBIOFOULING SURFACE FOR HIGHLY SENSITIVE IMMUNOASSAY</td>
<td>OAF-17</td>
</tr>
<tr>
<td></td>
<td>James Sibarani, Madoka Takai and Kazuhiko Ishihara</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>THE DEVELOPMENT APPLICATION OF ULTRAFILTRATION TECHNOLOGY ON AQUACULTURE: HARVESTING AND CONCENTRATING MICROALGAE FOR LARVICULTURE PURPOSES</td>
<td>OAF-24</td>
</tr>
<tr>
<td></td>
<td>Pande Gde Sasmita J. and I G. Wenten</td>
<td></td>
</tr>
</tbody>
</table>

Bali, Indonesia | 23-24 September 2010
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>TAMARIND LEAF EXTRACTION (Tamarindus indica L.) ETHANOL-DEXTRIN ENCAPSULATION: STUDY OF ANTIRADICAL AND ANTIOXIDANT</td>
<td>Sri Mulyani and Lutfi Suhendra</td>
<td>OAF-28</td>
</tr>
<tr>
<td>8</td>
<td>USING OF Pediococcus acidilactici U318 POWDER AS STARTER CULTURE IN PRODUCTION OF URUTAN: STUDY ON CONDITIONING PERIOD AND CASING USED IN URUTAN PRODUCTION</td>
<td>Nyoman Semadi Antara, Ni Ketut Alit Warini, I Kadek Alex Artha Wiguna, Ida Bagus Wayan Gunan and I Gusti Ngurah Agung</td>
<td>OAF-34</td>
</tr>
<tr>
<td>9</td>
<td>STUDY OF ANTIOXIDANT ACTIVITY OF GRAPE SKIN AND GRAPE SEED FROM THE SOLID WASTE OF A WINE INDUSTRY</td>
<td>Agung Suryawan Wiranatha and Agung Raditya Wisesa Wedananta</td>
<td>OAF-40</td>
</tr>
<tr>
<td>10</td>
<td>FORMULATION AND EVALUATION OF COMPACT POWDER WITH ETHYL VITAMIN C IN ALLYL METHACRYLATE CROSSPOLYMER (AMP) AS A DRUG DELIVERY SYSTEM</td>
<td>Dolih Gozali, Marline Abdassah, Anang Subghan, Winda Annisningtias</td>
<td>OAF-44</td>
</tr>
<tr>
<td>11</td>
<td>PROBIOTIC PROPERTIES AND GENETIC IDENTIFICATION OF Lactobacillus sp. SKG34</td>
<td>I N Sujaya, NP. Desy Aryantini, KA Nocianitri, AA. Nanak Antarini, Y Ramona</td>
<td>OAF-47</td>
</tr>
<tr>
<td>12</td>
<td>EFFECT OF MATURITY STAGE OF Carica papaya-THAILAND VARIETY ON LIPIDS SERUM PROFILE OF SPRAGUE DAWLEY RATS</td>
<td>Th. Endang Widoeri Widyastuti</td>
<td>OAF-52</td>
</tr>
<tr>
<td>13</td>
<td>PRODUCTION AND PURIFICATION OF LIPASE FROM Aspergillus niger AND IT’S POSSIBILITY FOR α-LINOLENIC ACID PRODUCTION</td>
<td>Kahar Muzakhar</td>
<td>OAF-56</td>
</tr>
<tr>
<td>14</td>
<td>OPTIMIZE GENISTEIN OF REJECTED EDAMAME SOYBEAN FLOUR USING β-GLUCOSIDASE PRODUCED BY BACTERIA</td>
<td>Yossi Wibisono</td>
<td>OAF-61</td>
</tr>
<tr>
<td>15</td>
<td>BIOETHANOL FERMENTATION FROM SAGO (Metroxylon sagu Rottb.) PITH POWDER USING COCULTURES Pichia stipitis CBS 5773, Saccharomyces cerevisiae D1/P3GI AND Zymomonas mobilis FNCC 0056</td>
<td>Ratu Safitri, Dr. Bambang Marwoto, Peristiwati, Ria Khoirunnisa and Apriyani</td>
<td>OAF-62</td>
</tr>
<tr>
<td>1</td>
<td>ALLELIC DIVERSITY OF SAMPOERNA AGRO’S EKONA PISIFERA OIL PALM BASED ON MICROSATELLITE MARKERS</td>
<td>OBE-1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>PLANT COMMUNITY STUDY IN LAKE BUYAN-TAMBLINGAN FOREST AREAS BALI</td>
<td>OBE-5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>THE EFFECT OF LAND-USE TYPE ON BIRD COMMUNITY IN NORTH BANDUNG AREA, WEST JAVA</td>
<td>OBE-9</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>IS IT POSSIBLE TO TRACK DOWN WHO’S POLLUTING THE RIVER?</td>
<td>OBE-13</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>POPULATION DYNAMICS AND IDENTIFICATION OF PHOSPHATE SOLUHBLIZING BACTERIA IN COMPOST OF AGRICULTURAL LITTERS</td>
<td>OBE-17</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>ISOLATION, IDENTIFICATION AND DEGRADATION CAPACITY TEST OF PETROLEUM DEGRADATION MICROBE FROM SEA WATER IN CELUKAN BAWANG HARBOUR, BULELENG</td>
<td>OBE-22</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>MITOCHONDRIAL DNA CYTOCHROME OXYDASE II (COII) SEQUENCES ANALYSIS OF BALI STARLING IN WEST BALI AND NUSA PENIDA CAPTIVITY</td>
<td>OBE-26</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>GENETIC RELATIONSHIP BETWEEN GEMBRONG GOAT, KACANG GOAT AND KACANG x ETAWAH CROSSBRED BASED ON THEIR MITOCHONDRIAL DNA</td>
<td>OBE-30</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>THE POTENCY OF WEST NUSA TENGGARA SEAWEED AS BIOFERTILIZERS</td>
<td>OBE-35</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>SELECTION OF PANCREATIC LIKE AMYLASE PRODUCING LACTIC ACID BACTERIA AND PARTIAL CHARACTERIZATION OF THE ENZYME</td>
<td>OBE-42</td>
<td></td>
</tr>
</tbody>
</table>
## ORAL PRESENTATION: HEALTH

<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Authors</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ROLE OUTER MEMBRANE PROTEIN 53 kDa <em>Salmonella typhi</em> JEMBER ISOLATED AS PROTEIN HEMAGGLUTININ AND ADHESIN</td>
<td>Diana Chusna Mufida, Candra Bumi and Heni Fatmawati</td>
<td>OH-1</td>
</tr>
<tr>
<td>2</td>
<td>POLYMERASE CHAIN REACTION RESTRICTION FRAGMENT LENGTH POLYMORPHISM FOR BETA GLOBIN GENE MUTATION DETECTION AT SUNDANESSE PEOPLE</td>
<td>Eriska Riyanti, Roosje Rosita Oewen, Edeh Rolett Haroen, Ani Melani Maskoen and Mieke Hemilawati Satari</td>
<td>OH-5</td>
</tr>
<tr>
<td>3</td>
<td>INFLUENZA H3 VIRUS AND HUMAN META PNEUMOVIRUS (HMPV) DETECTED IN PATIENTS WITH ACUTE RESPIRATORY INFECTIONS IN MOEWARDI HOSPITAL SURAKARTA, INDONESIA</td>
<td>Jimmy Tanamas, Afiono Agung Prasetyo, Suradi, Harsini, Maryani, Seiji Kageyama and Hiroki Chikumi</td>
<td>OH-10</td>
</tr>
<tr>
<td>4</td>
<td>HEPATITIS C VIRUS 1A AND 1C IN NARCOTIC DRUGS USERS IMPRISONED IN WOMEN PRISON SEMARANG, INDONESIA</td>
<td>Afiono Agung Prasetyo, Paramasari Dirgahayu, Hudiyono and Seiji Kageyama</td>
<td>OH-14</td>
</tr>
<tr>
<td>5</td>
<td>IDENTIFICATION OF DRUG RELATED PROBLEMS AT SANGLAH HOSPITAL BALI</td>
<td>Desak Ketut Ernawati</td>
<td>OH-13</td>
</tr>
<tr>
<td>6</td>
<td>FIBRIN GLUE: NEW ADDHESIVE SUBSTANT FOR FIXATION ON PTERYGIUM SURGERY</td>
<td>Ariesanti Tri Handayani and Eka Sutyawan</td>
<td>OH-22</td>
</tr>
<tr>
<td>7</td>
<td>CHARACTERISTIC OF CAROTID INTIMA-MEDIA THICKNESS OF PREDIALYSIS CHRONIC KIDNEY DISEASE PATIENTS IN SANGLAH GENERAL HOSPITAL- A PRELIMINARY STUDY</td>
<td>Elysanti Dwi Martadiani, Nyoman Sutarka, Ketut Suwitra, Raka Widiana, Jodi S Lockman, Wayan Sudana, Yeni Kandarini and Nyoman Margiani</td>
<td>OH-26</td>
</tr>
<tr>
<td>8</td>
<td>MOLECULAR ANALYSIS OF NS4B PROTEIN OF HEPATITIS C VIRUS SUBTYPE 1A</td>
<td>Faqihuddin Ahmad, Afiono Agung Prasetyo, Sofina Kusnadi, Dewi Okta Anggraini and Medika Putri Perwita Sari</td>
<td>OH-30</td>
</tr>
<tr>
<td>9</td>
<td>IN VITRO RELEASE PROPERTIES OF IBUPROFEN-LOADED MICROSHERES BASED ON BLENDS OF POLY(LACTIC ACID) AND POLY(c-CAPROLACTONE) USING POLYVINYLALCOHOL AS EMULSIFIER</td>
<td>Tetty Kemala, Emil Budianto, Bambang Soegiyono</td>
<td>OH-34</td>
</tr>
<tr>
<td>No.</td>
<td>Title</td>
<td>Authors</td>
<td>Page</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>10</td>
<td>Study about Indonesian blue bottle jellyfish venom from the waters of Papuma Jember</td>
<td>Al Munawir</td>
<td>OH-35</td>
</tr>
<tr>
<td>11</td>
<td>Infectivity of lytic phage to EPEC (Enteropathogenic Escherichia coli) from diarrheal patients in Indonesia</td>
<td>Sri Budiarti</td>
<td>OH-36</td>
</tr>
<tr>
<td>12</td>
<td>Antibacterial effect of lactoferrin and lactoferrin hydrolyzate on Enterobacter sakazakii</td>
<td>Fatma Zuhrotun Nisa, Hafsyah Laili Nurwandari and Elza Ismail</td>
<td>OH-37</td>
</tr>
<tr>
<td>13</td>
<td>A novel of replacing Caco-2 cell with enterocyte mice to determine bacteria adhesion activity in vitro</td>
<td>Sukrama, I D. M.</td>
<td>OH-38</td>
</tr>
</tbody>
</table>

**Poster Presentation: Agriculture**

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ornamentation structure of flower pollen on Enthomophyli pollination</td>
<td>Ni Putu Adriani Astiti</td>
<td>PA-1</td>
</tr>
<tr>
<td>2</td>
<td>Weight loss and respiration rate of salaca fruit in modified atmosphere using polyethylene plastic packaging at various perforation</td>
<td>Ida Ayu Rina Pratiwi Pudja</td>
<td>PA-4</td>
</tr>
<tr>
<td>3</td>
<td>Soybean (Glycine max (L) Merrill) in planta transformation of sunflower albumin gene using Agrobacterium tumefaciens</td>
<td>I Wayan Suberata and I Putu Suparthana</td>
<td>PA-8</td>
</tr>
<tr>
<td>4</td>
<td>How to use and treat the land according to Vedic knowledge and authority</td>
<td>Wayan Suena</td>
<td>PA-11</td>
</tr>
<tr>
<td>5</td>
<td>Post harvest management of gladiol (Gladiolus hybridus) as cut flower</td>
<td>Made Ria Defiani</td>
<td>PA-15</td>
</tr>
<tr>
<td>6</td>
<td>Chromosomes observation on cultivars of Brassica napus L.</td>
<td>Made Pharmawati, A.A. Gde Indraningrat, Ni Nyoman Wirasiti</td>
<td>PA-18</td>
</tr>
<tr>
<td>7</td>
<td>Response of offering pancreas extract and ration supplemented by probiotic on carcass, blood sugar concentration, and blood lipid profile to broiler</td>
<td>Tjokorda Gede Belawa Yadnya and Anak Agung Ayu Sri Trisnadewi</td>
<td>PA-22</td>
</tr>
</tbody>
</table>

Bali, Indonesia I 23-24 September 2010
<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>TERATOGENIC TEST OF YOUNG PINEAPPLE FRUIT (<em>Ananas comosus</em>) ON MOUSE FETUS (<em>Mus musculus L.</em>)</td>
<td>Iriani Setyawati and Dwi Ariyani Yulihatuli</td>
</tr>
<tr>
<td>9</td>
<td>EFFECT OF DIFFERENT ENERGY – PROTEIN RATIO CONTAINING DIET ON PERFORMANCE OF KAMPUNG CHICKENS</td>
<td>G. A. M. Kristina Dewi, I Ketut Astiningsih, R.R. Indrawati, I Mad. Laksmiati, and I Wayan Siti</td>
</tr>
<tr>
<td>10</td>
<td>SOMATOTROPIN SUPPLEMENTATION IMPROVE SKIN AND BONE COLLAGEN CONCENTRATION ON SIX-MONTH AND ONE-YEAR OLD FEMALE RATS</td>
<td>Ni Wayan Sudatri</td>
</tr>
<tr>
<td>11</td>
<td>BIOSORPTION OF CHROMIUM (III) ON NITRIC ACID – TREATED ALGAE eucheuma spinosum BIOMASS</td>
<td>I Wayan Sudiarta, Putu Suarya, Ni Putu Diantariani, and Iryanti Eka Suprihatin</td>
</tr>
<tr>
<td>12</td>
<td>APPLICATION OF ARTIFICIAL INSEMINATION TO INCREASE LITTER SIZE ON PIG</td>
<td>NLG Sumardani, IP Amaya and IP Gede Bawa</td>
</tr>
<tr>
<td>13</td>
<td>INHIBITION POTENCY of Streptomyces sp. T9 PATHOGENIC FUNGI Fusarium sp. CAUSES STEM ROT DESEASE of Aloe barbadensis Mill.</td>
<td>Retno Kawur</td>
</tr>
<tr>
<td>14</td>
<td>USE OF WATER PLANT FERMENTED WITH Aspergillus niger LEVELS IN DIET ON VILLAGE CHICKENS PERFORMANCE AND NUMBER LACTIC ACID BACTERIA IN DIGESTIVE TRACT</td>
<td>I Nyoman Sutarpa Sutama, Sri Anggraeni Lindawati, and Ni Made Artiningsih Rasna</td>
</tr>
<tr>
<td>15</td>
<td>AMINO ACID COMPOSITION OF DICTYOTA PATENS</td>
<td>Ida Ayu Raka Astiti Asih, Ni GAM Dwi Adhi Suastuti and Eti Meirina Brahmana</td>
</tr>
<tr>
<td>16</td>
<td>EVALUATION OF UREA–AMMONIA TREATED RICE STRAW AS A SOURCE OF ROUGHAGE FOR GROWING GOATS</td>
<td>Tjok Gede Oka Susila, and IB. Gaga Partama</td>
</tr>
<tr>
<td>17</td>
<td>DETERMINATION OF THE EFFECTIVENESS OF COCONUT WATER INTERACTED WITH MILK AS AN ATTEMPT TO DIVERSIFY YOGHURT PRODUCTS</td>
<td>Miwada, I.N.S., M. Hartawan, A.A. Kartini, S.A. Lindawati, G. Suranjaya, T. Ariana and A.T. Umiarti</td>
</tr>
<tr>
<td>Page</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18</td>
<td>EFFICACY OF RIPE PAPAYA SEEDS POWDER AGAINST Ascaris suum IN PIGS</td>
<td>Ardana Ida Bagus Komang</td>
</tr>
<tr>
<td>19</td>
<td>ATTEMPT TO INCREASE THE LITTER SIZE OF BALI GILTS BY INJECTING P.G. 600 AND FEEDING GLUCOSE</td>
<td>P. Suyadnya.</td>
</tr>
<tr>
<td>20</td>
<td>STUDY THE EFFECT OF ASEM (Tamarindus indica L.) AND KATUK (Saurous androgynus) LEAF EXTRACT IN DRINKING WATER FOR DECREASING PLASM CHOLESTEROL AND ABDOMINAL FAT OF DUCK</td>
<td>N.N. Candraasih Kusumawati, A.A.A. Sri Trisnadewi, W. Wirawan, N.W. Siti I.G.N.G. Bidua, and G. K. Roni</td>
</tr>
<tr>
<td>21</td>
<td>SEROLOGICAL AND MOLECULAR DIAGNOSIS OF Toxoplasma gondii USING GRA1 ANTIGEN AND THE TACHYZOITE AND BRADYZOITE SEQUENCE SPECIFIC STAGE OF SAG1 AND BAG1 IN VILLAGE CHICKEN</td>
<td>Apsari, I.A.P.; Artama, W.T.; Sumartono; Damriyasa, I.M.</td>
</tr>
<tr>
<td>22</td>
<td>OPTIMIZING VITAMIN-MINERAL SUPPLEMENTATION IN KING GRASS-BASED RATIONS TO MAXIMIZE RUMEN MICROBIAL PROTEIN SYNTHESIS AND ITS RELATIONSHIP WITH PRODUCTIVITY OF BALI CATTLE</td>
<td>Ida Bagus Gaga Partama</td>
</tr>
<tr>
<td>23</td>
<td>PRODUCTION OF FUSARIC ACID AND EXTRACELLULAR ENZYMES OF Fusarium oxysporum f.sp. vanillae EXPOSED TO THE EXTRACT OF Aglaophenia sp., A MARINE ANIMAL</td>
<td>I Ketut Suada, Ni Wayan Suniti, I Putu Sudarta, I Gusti Ngurah Bagus, and I Putu Supartana</td>
</tr>
<tr>
<td>24</td>
<td>DEVELOPMENT AND UTILIZATION OF SOMATIC EMBRYOGENESIS IN TROPICAL TREES: AVOCADO, LITCHI AND LONGAN</td>
<td>Simon H.T. Raharjo and Richard E. Litz</td>
</tr>
<tr>
<td>25</td>
<td>LEVEL OF BIOSECURITY IMPLEMENTATION ON THE POULTRY FARMS IN BALI</td>
<td>Suciani., N.P. Sarini, IGAA. Ambarawati, AA.Oka, G. Suranjaya, M. Dewantari, I N. Ardika and Kt. Warsa P.</td>
</tr>
<tr>
<td>26</td>
<td>THE EFFECT OF THE MOWING HEIGHT ON MOWING TORQUE AND QUALITY OF TURFGRASS TIFF WAY 146</td>
<td>I Putu Surya Wirawan</td>
</tr>
<tr>
<td>27</td>
<td>THE SUPPLEMENTATION OF VIRGIN COCONUT OIL (VCO) IN THE DIET TO DECREASED BROILER MEAT CHOLESTEROL</td>
<td>Ni W. Siti, I M. Mudita, I P. Ari Astawa, Ni M. Witariadi, N. Tirta. A. and Ni N. Candraasih K.</td>
</tr>
<tr>
<td>Poster Number</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>28</td>
<td>SEROPREVALENCE OF FEVER IN BALI CATTLE (Bos taurus) AT BALI PROVINCE BY INDIRECT IMMUNOFLOUORESCENT ANTIBODY ASSAY METHOD</td>
<td>Hapsari Mahatmi, Tjok Gde Oka Pemayun and Agus Setiyono</td>
</tr>
<tr>
<td>1</td>
<td>POSTER PRESENTATION: AGRITECH AND FOOD</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MODIFICATION OF CASSAVA STARCH WITH OXIDATION TO IMPROVE BAKING EXPANSION</td>
<td>A.A. Istri Sri Wiadnyani</td>
</tr>
<tr>
<td>3</td>
<td>DETERMINATION OF THE TUBER TYPES AS A DIET FOOD OF DIABETES MELLITUS PATIENT</td>
<td>Bambang Admadi Harsojuwono</td>
</tr>
<tr>
<td>4</td>
<td>EFFECT OF SOYBEAN PROTEIN DIET ON MUSCLE PROTEIN DEGRADATION IN ALLOXAN-INDUCED DIABETIC RATS</td>
<td>N.L. Ari Yusasrini, Zuheid Noor and Suparmo</td>
</tr>
<tr>
<td>5</td>
<td>THE EFFECT OF CHLORINE CONCENTRATION ON THE VACUUM PACKED FRESH-CUT BAMBOO SHOOTS CHARACTERISTICS IN LOW TEMPERATURE STORAGE</td>
<td>P.K. Diah Kencana, S.B. Widjamako, B. Dwi Argo and Yuniarta</td>
</tr>
<tr>
<td>6</td>
<td>UV-A OXIDATION FOR CASSAVA STARCH AND ACIDIFICATION TO IMPROVE BAKING EXPANSION</td>
<td>Arifin Dwi Saputro and A.A. Istri Sri Wiadnyani</td>
</tr>
<tr>
<td>7</td>
<td>EFFECT OF METHANOL EXTRACT OF JACKFRUIT WOOD (Artocarpus integrar Merr.) ON THE GROWTH OF MICROBES DETERIORATING ARENGA PALM SAP DURING STORAGE</td>
<td>I Nengah Kencana Putra</td>
</tr>
<tr>
<td>8</td>
<td>ETHANOL PRODUCTION FROM ACID HYDROlysATE CASSAVA FLOUR WITH MIXED CULTURE Trichoderma viride AND Saccharomyces cerevisiae</td>
<td>I Wayan Armata, Dwi Setyaningsih and Nur Richana</td>
</tr>
<tr>
<td>9</td>
<td>EVALUATION OF LYMPHOCYTE PROLIFERATION ACTIVITY OF MILLET (Pennisetum sp.) ON SPRAGUE DAWLEY RATS</td>
<td>GA. Kadek Diah Puspawati</td>
</tr>
<tr>
<td>10</td>
<td>OPTIMIZING THERMAL PROCESS IN PRODUCING SIRSAK JAM WITHOUT ANY ADDITION OF PRESERVATIVES</td>
<td>Komang Ayu Nociantiri, Ida Ayu Rina Pratiwi Pudj and Sumiyati</td>
</tr>
<tr>
<td></td>
<td>THE INFLUENCE OF COMPARISON OF PURPLE SWEET POTATO FLOUR AND WHEAT FLOUR ON CHARACTERISTICS OF PAN CAKE</td>
<td>Putu Timur Ina, G. A. Kadek Diah Puspawati and Ni Ketut Ayu Royani Dewi</td>
</tr>
<tr>
<td>No.</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>EXAMINING THE RATIO OF WATER AND COW MANURE USING BIOREACTOR UAS (UPFLOW ANAEROBIC SLUDGE) TO PRODUCE BIOGAS</td>
<td>I A G Bintang Madrini, I G N Apriadi Aviantara, Ni Luh Yulianti and A A Istri Raka Pedrawati</td>
</tr>
<tr>
<td>12</td>
<td>TECHNOLOGY PACKAGING FOR THE TRANSPORTATION OF MANGOSTEEN</td>
<td>Ni luh Yulianti, Sutrisno, Emmy Darmawati and I A Gde bintang Madrini</td>
</tr>
<tr>
<td>13</td>
<td>STUDY OF WHEY POTENCY AS AN ELECTRICITY POWER SOURCE IN MFC (MICROBIAL FUEL CELL) SYSTEM USING LACTIC ACID BACTERIA</td>
<td>Chandra Kurniawan, I Nyoman Pugeg Aryantha, Shinta Asarina</td>
</tr>
<tr>
<td>14</td>
<td>OPTIMIZATION OF INSTANT LEDOK PROCESSING METHOD.</td>
<td>I Ketut Suter, I Made Sugitha, I Nengah Kencana Putra, I Putu Supartha, Ni Made Yusa, K.A. Nocjznitri and Ni Wayan Wisaniyasa</td>
</tr>
<tr>
<td>15</td>
<td>THE INFLUENCE OF SKIM MILK POWDER CONCENTRATION ON MICROCAPSULE CHARACTERISTICS OF SALAM LEAF (Eugenia polyantha Wight.) FLAVOR EXTRACT</td>
<td>Ni Made Wartini, Gusti Ayu Vera Sukmawati and Nyoman Semadi Antara</td>
</tr>
<tr>
<td>16</td>
<td>THE INFLUENCE OF WHEAT FLOUR SUBSTITUTION WITH YELLOW PUMKIN (Cucurbita moschata ex. Poir) ON CAROTEN CONTENT AND CHARACTERISTIC OF SWEET BREAD</td>
<td>Ni Wayan Wisaniyasa</td>
</tr>
<tr>
<td>17</td>
<td>THE EFFECT OF SUGAR CONCENTRATION AND HEATING TEMPERATURE ON CHARACTERISTIC OF TAMARILLO (Cyphonamandra betacea) JAM</td>
<td>Ni Wayan Wisaniyasa, Agus Selamet Duniadji and Mawarto Sitepu</td>
</tr>
<tr>
<td>18</td>
<td>ANALYSIS COMPOUNDS AND TOXICITY TEST OF CORIANDER SEEDS (Coriandrum Sativum L.) ESSENTIAL OIL</td>
<td>Wiwik Susanah Rita, I Wayan Suirta, Ni Wayan Nita Ulantari</td>
</tr>
<tr>
<td>19</td>
<td>PROFILE BETA AND ALPHA CELLS OF PANCREATIC TISSUE ON DIABETIC RAT GIVEN TEMPE ISOFLAVONE</td>
<td>I Nyoman Suarsana</td>
</tr>
<tr>
<td>20</td>
<td>ANTIOXIDANT ACTIVITY OF SELECTED COMMERCIAL SEAWEEDS IN BALI</td>
<td>K. Sri Marhaeni Julyasih</td>
</tr>
<tr>
<td>No.</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>21</td>
<td>THE UNIQUENESS OF NATA DE COCO PRODUCED BY <em>Acetobacter xylinum</em> USING SUGAR CANE MOLASSES MEDIUM</td>
<td>Wayan Widiya</td>
</tr>
<tr>
<td>22</td>
<td>PROTEASE ACTIVITY OF PROTEIN FRACTION CONTAINING RECOMBINANT ACTINIDIN EXPRESSED IN <em>Saccharomyces cerevisiae</em></td>
<td>Anak Agung Made Dewi Anggreni, Triwibowo Yuwono and Sukarti Moeljopawiro</td>
</tr>
<tr>
<td>23</td>
<td>THE USE OF POLARIMETRIC ASSAY FOR HONEY QUALITY DETERMINATION IN CORELATION WITH ITS TOTAL REDUCTION SUGAR CONTENT</td>
<td>Ketut Ratnayani</td>
</tr>
<tr>
<td>24</td>
<td>DELIGNIFICATION OF SUGARCANE BAGASSE WITH SODIUM HYDROXIDE SOLUTION BEFORE SACCHARIFICATION ENZIMATICALLY USING CRUDE CELLULASE FROM <em>Aspergillus niger</em> FNU 6018</td>
<td>Ida Bagus Wayan Gunam, Ni Made Wartini, A.A.M. Dewi Anggreni and Pande Made Suparya</td>
</tr>
<tr>
<td>25</td>
<td>DESTRUCTION MACHINE DESIGN OF MUNICIPAL SOLID ORGANIC WASTE</td>
<td>I Made Naca, I Putu Suparthana</td>
</tr>
<tr>
<td>26</td>
<td>SURVIVAL OF FREEZE-DRIED LACTOBACILLUS RHAMNOSUS R21 IN THE PRESENCE OF SKIM MILK AS PROTECTANT DURING STORAGE</td>
<td>Ni Nyoman Pusawati</td>
</tr>
<tr>
<td>27</td>
<td>MICROBIOLOGICAL, BIOCHEMICAL AND SENSORIAL CHARACTERISTICS OF FERMENTED MILK PRODUCED BY PROBIOTIC Lactobacillus sp. SKG34</td>
<td>A.A. Nanak Antaraini, N.P. Desy Aryantini, I W. Redi Aryanta and I N. Sujaya</td>
</tr>
<tr>
<td>28</td>
<td>GENETIC IDENTIFICATION AND CARBOHYDRATES METABOLISMS OF Lactobacillus sp. SKG34, A BILE-SALT HYDROLYZING LACTOBACILLUS ISOLATED FROM SUMBAWA MARE MILK</td>
<td>N.P. Desy Aryantini, W. Nursini, A.A. Nanak Antaraini, K. A. Nocianitri, Y.Ramona, W Redi Aryanta, and I N. Sujaya</td>
</tr>
<tr>
<td>29</td>
<td>THE CHARACTERISTIC OF BABY BISCUIT WHICH MADE FROM THE KIND OF BANANA’S FLOUR</td>
<td>Amna Hartiati</td>
</tr>
<tr>
<td>Posters</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Preliminary Study of Cellulolytic Bacteria in Rice Straw Decomposition</td>
<td>Satty Arimurti, Aisyah and Kahar Muzakhar</td>
</tr>
<tr>
<td>2</td>
<td>Invitro Analysis of Isolate Microbes of Straw on Pathogens</td>
<td>Sutoyo, Erma Kuswantina and Satty Arimurti</td>
</tr>
<tr>
<td>3</td>
<td>The Diversity of Bacterial Isolates from Bandenali Coastal Area - Jember Based on Box-PCR and Biolog Gn2 Microplate</td>
<td>Kartika Senjarini, Herawati and Satty Arimurti</td>
</tr>
<tr>
<td>4</td>
<td>The Determination of Absorption Capacity of Echeng Gondok (Eichornia crassipes (Mart) Solms) to Pb, Cu and Cd in Water by the Application of Solvent Extraction with Methyl Isobutyl Ketone</td>
<td>Emmy Sahara</td>
</tr>
<tr>
<td>5</td>
<td>Bioremediation of Detergent-Containing Laundrette Wastes using Microbial Consortia of Ponds</td>
<td>Yan Ramona, I Wayan Budiarsa Suyasa, and Esti Arisetya Dewi</td>
</tr>
<tr>
<td>6</td>
<td>Distribution of Pb and Cu in Sediment and Seawater Along Sanur Beach</td>
<td>I Made Siaka</td>
</tr>
<tr>
<td>7</td>
<td>Potential Use of Organic Wastes as Part of Raw Materials in the Production of Biogas</td>
<td>Yan Ramona, Yenni Ciawi, Ni Made Utami Dwipayanti and A.A Gede Indraningrat</td>
</tr>
<tr>
<td>8</td>
<td>Plankton Production for Biofuel: The Effect of Silicate Concentration on Growth and the Determination of Its Fat Content</td>
<td>Ciawi, Y., Arya, W., Taman, G.L., Suastuti, N.G.A.M, Wirawan, I G.P.</td>
</tr>
<tr>
<td>9</td>
<td>The Shell of Mollusc Sold as Souvenir on the Beach Southern Part of Bali</td>
<td>Ni Made Suartini, Ni Wayan Sudatri and A. A. G. Raka Dalem</td>
</tr>
<tr>
<td>10</td>
<td>Isolation of Thermoacidophilic Bacteria from Kawah Beureum, Kamojang, Garut</td>
<td>Maria Ulfah</td>
</tr>
<tr>
<td>11</td>
<td>Physio-Acoustic Analysis to Determine the Deferral Time of Early Optimal Reflection of Sound in Concert Hall of Angklung Music</td>
<td>Anugrah Sabdoneo S</td>
</tr>
<tr>
<td>No.</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>CELLULAR SIGNALING OF LEPTIN RESISTANCE IN OBESITY</td>
<td>I G. A. Dewi Ratnayanti, I G. N. Mayun, I. A. Ika Wahyuniari and N. M. Linawati</td>
</tr>
<tr>
<td>2</td>
<td>DESIGN RECOMBINANT PRODUCTION OF LUM BROKINASE AND PREDICTION OF HOST WITH INSILICO MAPPING APPROACH</td>
<td>Fadilah, Surya Dwira, Aryo Tedjo and Fatmawaty</td>
</tr>
<tr>
<td>3</td>
<td>ANALYSIS INTERACTION OF HEMAGGLUTININ INHIBITOR OF INFLUENZA A FROM SPONGES COMPOUNDS BY MOLECULAR DOCKING APPROACH</td>
<td>Fatmawaty, Fadilah, Aryo Tedjo and Arfiyanti</td>
</tr>
<tr>
<td>4</td>
<td>DIFFERENTIATION OF PLASMA IL-10/TNF-α RATIO BETWEEN OF MALARIA FALCIPARUM PATIENTS WITH ANEMIA AND WITHOUT ANEMIA</td>
<td>I Nyoman Warde, Endang Retnowati, Ni Md Linawati and Puspa Wardhani</td>
</tr>
<tr>
<td>5</td>
<td>FORMULATION AND TEST OF STERILITY STERILE COMBINATION GEL ALOE VERA EXTRACT (ALOE BARBADENSIS MILL.) AND THE BANANA'S STEM EXTRACT (MUSA PARADISIACA LINN.)</td>
<td>Insan Sunan K., Sriwidodo and Grace Evanda</td>
</tr>
<tr>
<td>6</td>
<td>DIFFERENCES IN PLASMA ADIPONECTIN LEVELS IN PATIENTS WITH TYPE 2 DIABETES MELLITUS ON VARIOUS LEVELS OF HBAIC CONCENTRATION AS A CRITERIA OF DIABETES MELLITUS MONITORING</td>
<td>Ni Md Linawati, Ni Md Ratna Saraswati, I Nym Wande, Wyn Sugiritama, IA Wahyuniari and IGA Dewi Ratnayanti</td>
</tr>
<tr>
<td>7</td>
<td>THE ANALYSIS OF HEPATITIS B VIRUS (HBV) SUBTYPES ON S (Surface) REGION GENES FROM PATIENT IN MENGWI DISTRICT, BADUNG REGENCY, BALI</td>
<td>Made Agus Hendrayana, Retno Handajani, Maria Inge Lusida and Soetjipto</td>
</tr>
<tr>
<td>8</td>
<td>REALLY NECESSARY FOR THE RECONSTRUCTION OF PENIS ENLARGEMENT?</td>
<td>Made Oka Negara</td>
</tr>
</tbody>
</table>

Bali, Indonesia I 23-24 September 2010
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>THE POTENCY OF L-AMINO ACIDS AND DIPEPTIDES AS POTENTIATOR OF GABA&lt;sub&gt;B&lt;/sub&gt; RECEPTORS IN RAT NEOCORTICAL SLICES</td>
<td>Ni Made Puspawati, Rolf H Prager, David I.B.Kerr, and Jenny Ong</td>
<td>PH-38</td>
</tr>
<tr>
<td>10</td>
<td>RESISTANCE OF EXTENDED-SPECTRUM BETA LACTAMASES (ESBLs) PRODUCTION AMONG Escherichia coli AND Klebsiella pneumonia TO THE THIRD-GENERATION CEPHALOSPORIN IN CLINICAL LABORATORY SANGKHLAH HOSPITAL DENPASAR</td>
<td>DAP.Rasmika Dewi, AAN. Subawa, DG.Diah Dharma Santhi and Ida Sri Iswari</td>
<td>PH-42</td>
</tr>
<tr>
<td>11</td>
<td>FORMULATION OF BURN INJURY GEL FROM AMBON BANANA STEM FRACTION (MUSA X PARADISIACA LINN) AND ALOE VERA EXTRACT</td>
<td>Sriwidodo, Yasmiwar Susilawati and Melinda Januarti</td>
<td>PH-46</td>
</tr>
<tr>
<td>12</td>
<td>CHROMOGENIC METHOD IN ENDOTOXIN TESTING FOR INTRAVENA INJECTION PREPARATION</td>
<td>Sohadi Warya, Iyan Sopyan, Insan Sunan K. and Dzikry Ilhami</td>
<td>PH-51</td>
</tr>
<tr>
<td>14</td>
<td>ETHANOL LEVEL IN BLOOD OF WISTAR RATS AFTER ACUTELY PERORAL ALCOHOL CONSUMPTION</td>
<td>Ni Made Suaniti</td>
<td>PH-58</td>
</tr>
<tr>
<td>15</td>
<td>THE CORRELATION OF WORK STRESS, NUTRITIONAL STATUS, AND METABOLIC SYNDROME IN ADULT MALE WORKERS</td>
<td>Sutadarma IWG</td>
<td>PH-62</td>
</tr>
<tr>
<td>16</td>
<td>PROTEIN PROFILE OF ANOPHELES SUNDAICUS SALIVARY GLAND AS POTENTIAL TARGET FOR TRANSMISSION BLOCKING VACCINE (TBV) AGAINST MALARIA</td>
<td>Yunita Armiyanti, Pulong Wijan Pralampita, Riska Arifani, and Kartika Senjarini</td>
<td>PH-67</td>
</tr>
<tr>
<td>17</td>
<td>THE COMPARISON EFFECT OF NATURAL HONEY AND SYRUP OF STORAGE ROOT BALINESE SWEET PURPLE POTATOES (IPOMOEA BATATAS L) LIPID PROFILE OF THE BLOOD IN RATS WITH HYPER CHOLESTEROL DIET</td>
<td>I Wayan Sumardika, I Made Jawi, and A. Wiwiek Indrayani</td>
<td>PH-72</td>
</tr>
<tr>
<td>18</td>
<td>MALIGNANT TRANSFORMATION PAPILLARY THYROID CARCINOMA IN HASHIMOTO’S THYROIDITIS : A CASE REPORT</td>
<td>I Gusti Ayu Sri Mehendra Dewi</td>
<td>PH-76</td>
</tr>
</tbody>
</table>

Bali, Indonesia | 23-24 September 2010  

xvii
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>ENHANCEMENT PHALLOPLASTY AND GIRTH ENHANCEMENT; IT IS AWAKE CRANIOTOMY FOR ELOQUENT AREA IN SANGLAH HOSPITAL – BALI A CASE REPORT</td>
<td>Wayan Niryana, Tjokorda Mahadewa, Nyoman Golden and Sri Maliawan</td>
</tr>
<tr>
<td>20</td>
<td>TRITERPENOID SAPONIN ANTITUMOR COMPOUND OF SAMBUNG NYAWA (Gynura procumbens [Lour.] Merr) LEAVES</td>
<td>Sri Rahayu Santi, N.W Bogoriani, and IM. Sukadana</td>
</tr>
<tr>
<td>21</td>
<td>PHAEOCROMOCYTOMA: A CASE REPORT OF A RARE ADRENAL TUMOR CAUSING HYPERTENSION</td>
<td>Ni Putu Srimidyani, Herman Saputra</td>
</tr>
<tr>
<td>22</td>
<td>ADHERENCE OF BIFIDOBACTERIUM ISOLATED FROM INFANT FECES TOWARDS SALMONELLA TYPHI ON ENTEROCYTE BALB/c MICE</td>
<td>I D. M. Sukrama</td>
</tr>
<tr>
<td>23</td>
<td>CRI DU CHAT SYNDROME IN A ONE YEAR AND THREE MONTHS OLD BALINESE GIRL</td>
<td>I Gusti Ayu Trisna Windiani</td>
</tr>
<tr>
<td>24</td>
<td>CORRELATION BETWEEN THE DEGREE OF DIABETIC FOOT ULCER AND THE PERCENTAGE OF CD4+ CARRYING CASPASE-3</td>
<td>I W. P. Sutirta Yasa</td>
</tr>
<tr>
<td>25</td>
<td>AMMONIA GAS (NH₃) ELIMINATION USING BIOFILTRATION UNDER ANAEROBIC CONDITION</td>
<td>N. M. Utami Dwipayanti</td>
</tr>
<tr>
<td>26</td>
<td>LESS HEALTHY FAMILY FUNCTION IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER</td>
<td>I Gusti Ayu Endah Ardjana</td>
</tr>
<tr>
<td>27</td>
<td>EFFECT OF CENTELLA ASIATICA EXTRACT ON THE LEVEL OF INTERLEUKIN 6 (IL-6) IN MICE</td>
<td>I Nengah Kerta Besung</td>
</tr>
<tr>
<td>28</td>
<td>COMPARISON ON EFFECTIVENESS OF Chrysomyia rufifacies AND Musca domestica larvae IN EXTRACT TEST IN VITRO, EXTRACT TEST IN VIVO AND MAGGOT DEBRIDEMENT THERAPY ON METHICILLIN-RESISTANT Staphylococcus aureus (MRSA) INFECTED WOUNDS.</td>
<td>W. Pumamasidhi</td>
</tr>
<tr>
<td>29</td>
<td>DIAGNOSTIC TOOLS FOR THE DETECTION OF RABIES VIRUS IN HUMAN</td>
<td>D.G.D. Dharma Santhi, Dap. Rasmika Dewi and A.A.N. Subawa</td>
</tr>
<tr>
<td>No.</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>30</td>
<td>SURVEY THE NUMBER OF <em>Coliform</em> AND IDENTIFICATION OF <em>Escherichia coli</em> IN SIOMAY VENDCRS’S RINSE WATER IN SUB-DISTRICT TEMBALANG, SEMARANG</td>
<td>Dwi Sutiningsih</td>
</tr>
<tr>
<td>31</td>
<td>COLONIZATION OF LACTOBACILLUS SP. F2 IN THE INTESTINAL TRACT AND ITS FUNCTIONAL EFFECT TO REDUCE BLOOD CHOLESTEROL CONTENT OF RATS (<em>Rattus norvegicus</em>)</td>
<td>W. Nursini, Np. Desy Aryantini, K.A. Nocianitri, Y. Ramona, W. Redi Aryanta and I N Sujaya1</td>
</tr>
<tr>
<td>32</td>
<td>PHACOEMULSIFICATION FOR BETTER VISION</td>
<td>Nyoman Sunerti and Putu Yuliawati</td>
</tr>
<tr>
<td>33</td>
<td>SMOKING HABIT AT SCHIZOPHRENIC PATIENT TO SEE FROM LEVEL OF MILD/SEVERE AND MOTIVATION FOR STOPING</td>
<td>I Wayan Westa</td>
</tr>
<tr>
<td>34</td>
<td>THE DUALLY DIAGNOSA PATIENT SCHIZOPHRENIA AND SUBSTANSTANCE USE DISORDERS AT PSYCHIATRIC DEPARTMENT SANGLAH HOSPITAL DENPASAR – BALI</td>
<td>Nyoman Hanati</td>
</tr>
<tr>
<td>35</td>
<td>APOPTOSIS STUDY OF RED FRUIT OIL ETHANOL EXTRACTS (<em>Pandanus conoideus</em> LAM) ON CERVIX CANCER CELL LINE SIHA</td>
<td>Ida Ayu Ika Wahyuniari, Agung Wiwik Indrayani, Ign Sri Wiryawan, N Made Linawati, and Iga Dewi Ratnayanti</td>
</tr>
<tr>
<td>36</td>
<td>NUTRITION IN PREGNANCY RELATED FERRO DEFICIENCY ANEMIA</td>
<td>I.A. Dewi Wiryanthini</td>
</tr>
<tr>
<td>37</td>
<td>FUNCTION OF T-CELL-MEDIATED IMMUNITY DURING TOXOPLASMA GONDII INFECTION</td>
<td>I W. Surudarma</td>
</tr>
<tr>
<td>38</td>
<td>NUTRITION IN CARDIOVASCULAR DISEASE RELATED HOMOCYSTEINE AND VITAMIN B6 CYSTATHIONINE BETA SYNTHASE GENE POLYMORPHISM</td>
<td>Ni Wayan Tianing</td>
</tr>
<tr>
<td></td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>40</td>
<td>MOLECULAR EPIDEMIOLOGY OF HEPATITIS C VIRUS IN KEDUNG PANF PRISON SEMARANG, INDONESIA</td>
<td>Afiono Agung Prasetyo, Paramasari Dirgahayu, Husiyono and Seiji Kageyama</td>
</tr>
<tr>
<td>41</td>
<td>HEPATOPROTECTIVE POTENTIAL OF VITAMIN C AND VITAMIN E ON THE SWISS-WEBSTER MICE (MUS MUSCULLUS) THAT EXPOSED BY AFLATOXIN</td>
<td>Ratu Safitri</td>
</tr>
<tr>
<td>42</td>
<td>SCREENING OF PENICILLIN G ACYLASE PRODUCING BACILLUS STRAINS AND CLONING OF THE PAC GENE</td>
<td>Niknik Nurhayati</td>
</tr>
<tr>
<td>43</td>
<td>CLONING AND EXPRESSION OF Bacillus subtilis AQ1 ENDOXYLANASE GENES IN Bacillus megaterium USING CONJUGATIONAL TRANSFORMATION METHOD</td>
<td>Is Helianti</td>
</tr>
</tbody>
</table>
EFFECT OF AMYLOSE CONTENT AND TEMPERING TIME ON CHARACTERISTICS OF FRESH RICE FLOUR-BASED SPRING ROLL WRAPPERS

A. Ingani Widjajaseputra*, Harijono**, Yunianta**, Teti Estiasih**
*) Agricultural Technology Faculty - Widya Mandala Catholic University,
**) Agricultural Technology Faculty - Brawijaya University

ABSTRACT

The effects of amylose content and tempering time on characteristics of fresh rice flour-based spring roll wrappers were investigated by using added free amylose of cassava to rice flour. The used rice flour in this research was from variety Mentik (an Indonesian local rice variety). Amylose content of blended rice flour ranged from 25% up to 40%. The fresh rice flour-based spring roll wrappers were made without frying oil on Teflon frying pan at 72°C during 4 minutes. After heating, the product was tempered for 30, 45 and 60 minutes at 25°C. The product was evaluated for rice starch granules size, moisture content, water activity and elongation at break. Each experiment was conducted by three replications. All of the data were analyzed by analysis of variance (α 5%). Duncan multiple range test (α 5%) was used to determine the significant difference among the treatments. The result showed that free amylose adding to rice flour blends homogenized the swelling of rice starch granules. The increasing of amylose content more than 34% increased water activity. The amylose content from 31% up to 40% increased the moisture content but tempering time from 30 up to 60 minutes did not affect moisture content and elongation significantly. Increasing amylose content decreased elongation at break.

Keywords: amylose content, tempering time, fresh spring roll, rice flour, characteristics.

INTRODUCTION

Tempering time of fresh spring roll wrapper is a given time to the product after heating until it can be removed from the frying-pan at room temperature. In cooling process still occur water vapor evaporation and water migration through the system slowly (Anonymous, 2007). During the process of heating and tempering occur evaporation of water to produce solid material which is a group of polymers of inter-connected polymer chains (Andersen et al., 2000). This change resulted in a drop of temperature and provided the product was in rubbery state and then became the glassy state (Moraru and Kokini, 2003). In these conditions the product will become more cohesive and it could be removed from the frying-pan easily.

Starches with higher amylose content will form stronger gel and will be more difficult to damage. Increasing of amylose content will inhibit the swelling of the granules thus maintained the integrity of the swollen starch granules. Too short tempering time will produce a sticky product which is related to high amount of surface water as a result of insufficient water migration from the surface to interior parts of the product. In contrary long tempering time will dehydrate the product (Anonymous, 2007). Longer time of tempering may increase the alignment of free amylose molecules and starch crystallization which lead to decrease of water binding ability of the system. It resulted in increasing of free water molecules that make increasing $A_w$ (Yao et al., 2003). The purpose of this study is to investigate the influence of amylose content and tempering time on the characteristics of fresh rice flour-based spring roll wrappers.

MATERIALS AND METHODS.

Materials. Mentik rice from Candi, Nglandes, Madiun, obtained from the UD. Eka Jaya rice mill, Surabaya. Rice flour obtained by grinding the rice in dry process (without
soaking) and sifted with a 80 mesh sieve size. Amylose extraction from tapioca used modified method of Takeda et al. (1986) and Patindol et al. (2003). Leghorn chicken eggs obtained from a local shop in Surabaya.

**Methods.** The research design was factorial experiment with randomized completely block design. Various factors is the amylose content consists of six levels, namely: 25%; 28%; 31%; 34%; 37% and 40% (w/w); while tempering time with three levels of factors (30, 45 and 60 minutes) at 25°C. The observed dependent variables are starch granules size, aw, moisture content and elongation at break. The data were processed by analysis of variance, the difference of among treatments were tested by Duncan Multiple Range Test with α = 5%. Starch granules size was measured by using Olympus DP 20 Digital Camera Microscope. Water activity was measured with a Rotronic hygrometer AW1 Hygro Palm at 85% RH +/- 1% at temperature of 25 °C +/- 2 °C. Moisture content was measured by gravimetric method (AOAC, 2000). Elongation at break was measured by Shimadzu Autograph. The batter has been mixed to be homogeneous by placing the mixture on a magnetic stirrer with a speed of 100 rpm for 2 minutes, then placed on a Teflon material frying pan (diameter 10 cm). Heating was held at 72 °C for 4 minutes.

**Table 1. Formula of Fresh Rice flour-based Spring Roll Wrapper**

<table>
<thead>
<tr>
<th>Ingredients (g)</th>
<th>Amylose Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice Flour</td>
<td>25</td>
</tr>
<tr>
<td>Crude amylose of</td>
<td>28</td>
</tr>
<tr>
<td>85% purity*</td>
<td>31</td>
</tr>
<tr>
<td>White Egg</td>
<td>34</td>
</tr>
<tr>
<td>Water</td>
<td>37</td>
</tr>
<tr>
<td>Tapioca</td>
<td>40</td>
</tr>
</tbody>
</table>

**RESULTS AND DISCUSSION**

**Rice Starch granules size**

Data in Table 2. showed a significant difference in the effects of amylose content and there was interaction between two factors to the size of rice starch granules.

**Table 2. Rice Starch Granule Size of Fresh Rice Flour-based Spring Roll Wrappers on Different Levels of Amylose and Tempering Time**

<table>
<thead>
<tr>
<th>Tempering Time (minutes)</th>
<th>Rice Starch Granule Size (µm2)*</th>
<th>Amylose Content (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>1596.59 h 1531.39 ef</td>
<td>1476.12 d 1408.92 c</td>
</tr>
<tr>
<td>45</td>
<td>1568.19 g 1515.53 e</td>
<td>1470.49 d 1403.02 e</td>
</tr>
<tr>
<td>60</td>
<td>1539.75 f 1512.84 e</td>
<td>1468.43 d 1402.06 c</td>
</tr>
</tbody>
</table>

DMRT 5% 18.23 - 20.51

*Values in same column with different letter are significantly different based on DMRT test with α = 5%*

It also showed that starch granules size decreased significantly with increasing amylose content on tempering time for 30, 45 and 60 minutes.
Water activity ($a_w$)
Data showed a trend of increasing in $a_w$ as levels of amylose increasing. This phenomena could be influenced by amylose alignment molecules, the freed water molecules will lead increasing of $a_w$.

Table 3. $a_w$ of Fresh Rice Flour-based Spring Roll Wrappers on Different Levels of Amylose

<table>
<thead>
<tr>
<th>Amylose Content (%)</th>
<th>$a_w^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0.516 a</td>
</tr>
<tr>
<td>28</td>
<td>0.518 a</td>
</tr>
<tr>
<td>31</td>
<td>0.521 a</td>
</tr>
<tr>
<td>34</td>
<td>0.524 ab</td>
</tr>
<tr>
<td>37</td>
<td>0.529 b</td>
</tr>
<tr>
<td>40</td>
<td>0.539 c</td>
</tr>
</tbody>
</table>

DMRT 5% 0.0075 - 0.0084

*Values with different letter are significantly different based on DMRT test with $\alpha = 5\%$

Table 4. $a_w$ of Fresh Rice Flour-based Spring Roll Wrappers on Different Time of Tempering

<table>
<thead>
<tr>
<th>Time of Tempering (minutes)</th>
<th>$a_w^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0.520 a</td>
</tr>
<tr>
<td>45</td>
<td>$&lt;0.526$ ab</td>
</tr>
<tr>
<td>60</td>
<td>0.529 b</td>
</tr>
</tbody>
</table>

*Values with different letter are significantly different based on DMRT test with $\alpha = 5\%$

Moisture Content
The average moisture content showed a trend of increasing water content as increasing levels of amylose. This phenomenon is caused by the amount of water entrapped in the gel system will be more and more with the increased amylose content. This deals with the role of amylose on gel formation (Gimeno, et al., 2004).

Table 5. Water Content of Fresh Rice Flour-based Spring Roll Wrappers on Different Levels of Amylose Content

<table>
<thead>
<tr>
<th>Amylose content (%)</th>
<th>Water content (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 %</td>
<td>36.30 a</td>
</tr>
<tr>
<td>28 %</td>
<td>36.83 a</td>
</tr>
<tr>
<td>31 %</td>
<td>39.25 b</td>
</tr>
<tr>
<td>34 %</td>
<td>40.24 b</td>
</tr>
<tr>
<td>37 %</td>
<td>41.27 b</td>
</tr>
<tr>
<td>40 %</td>
<td>41.29 b</td>
</tr>
</tbody>
</table>

DMRT 5% 2.2834 - 2.5690

*Values with different letter are significantly different based on DMRT test with $\alpha = 5\%$

Elongation
The result in Table 6 showed increasing of amylose content and it affected the distance of molecular components which decreased cohesiveness. In this condition water in the system acted as a plasticizer materials (Chang et al., 2006).
Table 6. Elongation at Break of Fresh Rice Flour-based Spring Roll Wrappers on Different Levels of Amylose Content

<table>
<thead>
<tr>
<th>Amylose Content (%)</th>
<th>Elongation at Break (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>16.07 e</td>
</tr>
<tr>
<td>28</td>
<td>14.32 d</td>
</tr>
<tr>
<td>31</td>
<td>14.27 cd</td>
</tr>
<tr>
<td>34</td>
<td>13.71 c</td>
</tr>
<tr>
<td>37</td>
<td>12.03 b</td>
</tr>
<tr>
<td>40</td>
<td>10.96 a</td>
</tr>
</tbody>
</table>

DMRT 5% 0.6835 - 0.07690

*Values with different letter are significantly different based on DMRT test with α = 5%.

CONCLUSION

Based on the study of all the response of depended variables, it can be concluded that the treatment of amylose content of rice flour and long of tempering time influenced the characteristics of fresh rice flour-based spring roll wrappers. Amylose content in the range of 25% to 40% tend to increase the moisture content of product. Tempering is longer than 60 minutes is not recommended in relation to the decrease of elongation.

REFERENCES


