2nd ICNF
IPB INTERNATIONAL CONFERENCE ON NUTRITION AND FOOD 2022

Organized by:
IPB University
Bogor Indonesia

Co-organizer:
UPM
Universiti Putra Malaysia
Berilmu Berbakti

2nd IPB International Conference on Nutrition and Food 2022

PROGRAMME BOOK

ICNF 2022

17-18 November 2022
IPB University
Bogor - Indonesia

Department of Community Nutrition
Faculty of Human Ecology
IPB University

Partner:
Malaysian Journal of Medicine and Health Sciences

"Nutrition and Food Innovation for Better Life"

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WELCOME MESSAGE FROM
DEAN OF FACULTY OF HUMAN ECOLOGY

Prof. Dr. Ir. Ujang Sumarwan, M.Sc.

The Department of Community Nutrition strongly support the achievement of sustainable Development Goals (SDGs), especially the third goal of good health and wellbeing. The third goal of the SDGs can only be achieved once the first and the third goals are achieved, good health and wellbeing for all people can be attained when there is no poverty and zero hunger. Therefore, food and nutrition security is an important element of the three goals. It is an important indicator for poverty alleviation, hunger eradication as well as improvement in health and wellbeing. In addition, it is also a pivotal part for the development of quality human resources in Indonesia, thus building a strong foundation for current and future development of the country. Surely, this premise can be extended to other countries, especially those in the developing worlds. In short, food and nutrition are main elements for achieving a better life. The Department of Community Nutrition is an academic institution that is responsible for developing strategies to provide the best attainable nutrition and food for the community, which in turn can assist the realization of the sustainable development goals in the not too distant future.

We welcome the implementation of this international convention, with the topic of "Nutrition and Food Innovation for Better Life". This topic is very relevant to the achievement of sustainable development goals. This international conference is also a media for nutritionists from around the world to gather and exchange information, building network to create and develop innovations for the achievement of better health and wellbeing as stated in the third goal of the SDGs. International conventions also provide opportunities for academia in the field of community nutrition both from the IPB university and various other institutions around the world to communicate their research and scientific works through publication in reputable journals, one of which is the Scopus indexed journal. Further, international conferences are also a media for academics to collaborate. This collaboration will strengthen the strategies to achieve SDGs. Collaboration will lead academics to learn from each other, hence leading them to novel food and nutrition innovations.

Therefore, I would like to offer my warmest welcome to you in this international conference and enjoy the event. May all of you have a fruitful sharing of knowledge and research results.

I sincerely hope that the academics in the field of food and nutrition who attend this event can publish their results in international reputable scientific journals.

Dean of the Faculty of Human Ecology, IPB University.

WELCOME MESSAGE FROM

HEAD OF DEPARTMENT OF COMMUNITY NUTRITION AND CHAIRPERSON OF 2ND ICNF

Prof. Dr. Ir. Sri Anna Marliyati, M.Si

Dear colleagues and friends,

On behalf of the Organizing Committee, Department of Community Nutrition, Faculty of Human Ecology, IPB University, it is my great pleasure to welcome all participants to the 2nd IPB International Conference on Nutrition and Food. I would also like to convey my gratitude to all the inviting speakers for your valuable participation in this conference. It is such an honor for us to have you here. I am particularly happy to be present in this unique event today and to exchange views and share experiences with colleagues and friends, who represent many well-known Universities and also their students.

This conference is the second conference on Nutrition and Food held by our department to build a strong network among scientists in this field and share valuable information as well as to yield high-quality publication in clinical nutrition, community nutrition, food innovation and sport nutrition. Recognizing the importance of promoting research and innovation in nutrition and food, we have chosen to focus on Nutrition and Food Innovation for Better Life as the theme of the conference this year. There will be 7 plenary sessions, 2 special sessions, 22 parallel oral presentation sessions, and 4 poster presentation sessions, where presenters will share their experiences and views on variety of topics related to the conference theme. In this year we collaborate with Universiti Putra Malaysia (UPM) in conducting the conference. We still conduct our conference completely on a digital platform. I hope this condition will not trouble us in achieving our objectives in this conference.

I take this opportunity to convey our sincere appreciation to all who have contributed to the successful organizing of this conference: the Rector of IPB University, the Director of International Collaboration Office IPB University, and the Dean of Faculty of Human Ecology IPB University as well as The Head of Department of Nutrition UPM. I also would like to thank all the plenary speakers, oral and poster presenters, participants, and sponsors for their valuable contribution for the conference. The dedication of the Scientific Committee of ICNF 2022 from IPB University and UPM also needs to be appraised in helping research papers presented in this conference to be published in our journal partner. And the last but definitely not the least, my heartfelt gratitude to my colleagues in the Organizing Committee of ICNF 2022 for their hard work, dedication, cooperation, and support throughout the year in preparing this event.

I hope everyone will have a great time in this conference. Thank you for your attention.

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Hanifah Al Khairiyah, SGz, M. Gz

SECRETARY

Zhahrina Nasution, S.Par

INVITED SPEAKERS

PROF. DR. STEPHEN BIRD

University of Southern Queensland, Australia

"Food and nutrition for fitness and for athlete performance"

PROF. DR. VIMAL KARANI

University of Reading, UK

"Precision nutrition for preventing NCDs using Nutrigenetic and Nutrigenomic approaches"

PROF. DR. HARDINSYAH

IPB University, Indonesia

"Diet, lifestyle, and non-communicable diseases: Lesson learned from Asia"

PROF. DR. NORHASMAH BINTI SULAIMAN

Universiti Putra Malaysia, Malaysia

"Food and nutrition security in Southeast Asia"

ASSOC. PROF. DR. WANTANEE KRIENGSINYOS, RD

Mahidol University, Thailand

"The roles of registered dietitians in the prevention and management of non-communicable diseases"

ASSOC. PROF. DR. ELIZABETH RYAN

Colorado State University, USA

"Gut microbial metabolism of whole grains and legumes across the lifespan for chronic disease prevention"

DR. RINA AGUSTINA, PHD

Universitas Indonesia, Indonesia

"Environmental risk factors associated with child stunting"

PARTICIPANTS AND PRESENTERS

The 2nd IPB International Conference on Nutrition and Food (ICNF 2022) is attended by various public and private universities, research institutes, government institutions, and the industry. There are at least eight countries participated and contributed to the success of ICNF 2022. They contributed in many forms such as main speakers, presenters, participants, and as manuscript contributors. The eight countries participating are Indonesia, Uganda, Thailand, Malaysia, Filipina, United Kingdom, Unites States, and Australia. In total, the ICNF 2022 is attended by 108 participants consisting of 98 presenters and 9 non-presenters.

A total of 98 research articles will be presented in this conference. As many as 90 of them will be published through a journal partner of the ICNF. Those scientific manuscripts will be published in the supplement issue of the Malaysian Journal of Medicine and Health Sciences (MJMHS). There are 14 research articles with international author affiliations, namely 3 from the Philippines, 6 from Malaysia, and 5 from Thailand.

The manuscripts presented at the 2nd ICNF are grouped into four main topics, namely Clinical nutrition (CL) topic consist of 11 oral presentations and 3 poster presentation, Community nutrition (CO) consist of 37 paper for oral presentations and 7 poster presentations, Food Innovation (FO) topic with 31 oral presentations and 5 poster presentations, as well as Sport Nutrition (SP) topic with 3 oral presentations and 1 poster presentation. Thus, in total there are 82 oral presentations and 16 E-poster presentations.

PUBLISHING PARTNER

MALAYSIAN JOURNAL OF
Medicine and
Health Sciences

INFORMATION FOR ORAL PRESENTERS

Instructions for Online Presentations

Equipment Provided by the Presenters

1. A computer with an internet connection (wired connection recommended)
2. USB plug-in head set with a microphone (recommended for optimal audio quality)
3. Webcam (optional): built-in or USB plug-in

Environment Requirement

1. Quiet location and proper lighting
2. Stable internet connection
3. Suitable background

Duration of each Presentation

Keynote Speech	: about 30 minutes of presentation and 15 minutes of question and answer
Regular Oral Presentation	: about 10 minutes of presentation and 5 minutes of question and answer

How to use ZOOM

Step 1: Download Zoom from the link: **https://zoom.com.cn/download**
Step 2: Sign up an account.
Step 3: Set up the languages and do some basic test.

Step 4: Get familiar with the basic functions: Rename, chat, raise hands, and screen share, etc

1. **Rename:** Before you enter the conference room, please change your name to Paper ID + Name
2. **Chat and raise your hand:** During the session, if you have any questions about the operation of zoom, please let us know "raise your hands" and use "chat" to communicate with conference secretary. During the Question section, if you have any question about keynote speakers or author, you can also click "raise your hands" or "chat".
3. **Share screen:** Please click "share screen" when it's your turn to do the presentation.

Step 5: How to join the conference online

1. Find your paper ID and meeting ID on the conference program (Different session have different meeting ID)
2. Open the ZOOM, click the join, paste the meeting ID, then you can join the conference.
3. Click the share screen when it's your turn to do the presentation (Please open your video or powerpoint before clicking the share screen)
4. Click the stop share after you finish your presentation.

INFORMATION FOR ORAL PRESENTERS

- Please pay special attention to the **jetlag** and all schedules are arranged based on **West Indonesian Time (WIB/GMT+7)**. You can change the time on your watch and phone to WIB in advance in case you are confused with the jet lag
- Please try to find a **quiet environment**. In addition to the presentation and question section, the host will mute your microphone all the way.
- Please get familiar with the basic functions: **Rename, Chat, Raise Hands, and Share Screen.**
- Please arrive at the session 10 minutes earlier and attend the whole conference.
- To effectively control the time and avoid some unexpected situations, we advise you **record your presentation** ahead of time (12 minutes of presentation and 3 minutes of Question and Answer for each report). Please send video to the conference email.
- Only the organizer can record the video. Please **do not record** the video during the meeting

Please note:

- For pre-recorded presentations we only require slides with a Voice Over recording, however, slides with video of the presenter are encouraged as well.
- The maximum file size of the presentation is 25 MB.

INFORMATION FOR E-POSTER PRESENTERS

Instructions for E-Poster

E-posters provide viewers high-quality resolution of images and text. Like traditional posters, e-posters provide a concise snapshot of your work, but instead of a physical poster pinned to a board, e-posters are a single slide presentation which is viewed on a computer.
E-poster presenters have the option of submitting a PDF version of their poster **OR** an mp4 version with an audio recorded file (maximum of 4 minutes) to accompany their e-poster presentation. We recommend using the recording feature through PowerPoint.

Instruction

1. Prepare your e-poster as an electronic version replicating what a physical poster would look like
2. No animation or embedded video are permitted
3. We recommend using PowerPoint to prepare your e-poster. Your e-poster should be created on a single slide (one slide only)
4. There is no required e-poster size. However, note the PDF or MP4 file size limit: 100 MB
5. Poster orientation can be either horizontal or vertical.
6. Include title, author, and institutional affiliation at the top of the e-poster.
7. A brief but clearly worded "Instruction" as well as "Conclusions" are key features for understanding the data presented.
8. Text and legends for figures should be short. Make sure to use large, clear, easy-to-read print for text and legends.
9. The use of color adds emphasis and draws interest to the presentation.

Duration of Each Presentation

E-poster presentation viewing will have a specific date and time. E-poster presenters please prepare an mp4 version with an audio recorded file (maximum of 4 minutes)

How to Join the Conference Online

1. Find your paper ID and meeting ID on the conference program (Different session have different meeting ID)
2. Open the ZOOM, click the join, paste the meeting ID, then you can join the conference.
3. Click the share screen when it's your turn to do the presentation (Please open your video or powerpoint before clicking the share screen)
4. Click the stop share after you finish your presentation.

Please note:

- For e-poster presentations we only require slides with a Voice Over recording.
- If you were preparing to present a poster, you may choose to send a recorded presentation or simply the PDF of your poster. The maximum file size of the poster/presentation is 25 MB"

CONFERENCE SCHEDULE

PROGRAMME AT A GLANCE

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PRE-CONFERENCE

16TH NOVEMBER 2022, WEDNESDAY

Time (GMT+7)	Activity	Zoom Meeting Link
15.00 – 16.30	**Pre-conference workshop:** *Prof. Dr. Vimal Karani, University of Reading, UK* **"Precision nutrition for preventing non-communicable diseases using nutrigenetic and nutrigenomic approaches"** *Moderator: Dr. Zuraidah Nasution, IPB University*	https://ipb.link/guest-lecture-2nd-icnf2022 Meeting ID: 968 8507 7636 Passcode: 522012

DAY 1

17TH NOVEMBER 2022, THURSDAY

Thursday, 17 November 2022 (Day 1)		
Time (GMT+7)	**Activity**	**Zoom**
08.30 – 09.00	**Opening ceremony** The national anthem "Indonesia Raya" and university hymn "Hymne IPB" **Welcome speech** *(Head of Organizing Committee of ICNF 2022: Prof. Dr. Sri Anna Marliyati)* **Opening remarks** *(Rector of IPB University: Prof. Dr. Arif Satria)*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
09.00 – 09.45	**Plenary session 1:** *Prof. Dr. Hardinsyah, Department of Community Nutrition, IPB University, Indonesia* **"Diet, lifestyle, and non-communicable diseases: Lesson learned from Asia"** *Moderator: dr. Mira Dewi, PhD, IPB University*	
09.45 – 10.30	**Plenary session 2:** *Prof. Dr. Norhasmah Sulaiman, Department of Nutrition, Universiti Putra Malaysia, Malaysia* **"Food and nutrition security in Southeast Asia"** *Moderator: Dr. Budi Setiawan, IPB University*	
10.30 – 10.50	**Poster presentation session 1** 1. PL023CLP - Selection of Extraction Methods For Determination of Total Faecal Bile Acids in Malaysian Adults on A Palm Oil Diet 2. PD104CLP - Malnutrition as an Associated Factor of the Sarcopenia Risk Using SARC-Calf and SARC-Calf 31 in Oncology Patients Undergoing Chemotherapy 3. PD121CLP - The Effect of Lowering Cholesterol Levels by Intervention with Mixture of Milk Yogurt and Temulawak	
10.50 – 11.50	**Oral presentation session 1** **Zoom 1:** *Clinical Nutrition* 1. PD002CLO - Antihypertensive Activity of Moringa Oleifera Leaves: A Preliminary Meta-Analysis 2. PD067CLO - The Effect of Powdered Young Coconut Drink on Organ Weight and Lipid Profile of Experimental Diabetic Rats 3. PD003CLO - Comparison of Nutritional Status Effect Between RUTF Standard and Modified RUTF in SAM Children: A Meta-Analysis 4. PD099CLO - The Effect of Probiotic Intake on Metabolic Syndrome: A Meta-Analysis *Moderator: Dr. Rimbawan, IPB University*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
	Zoom 2: *Community Nutrition* 1. PD006COO - Parental Feeding Practice and Micronutrient Intake of Children in North Jakarta, Indonesia 2. PD013COO - Factors Associated to Protein Concentration in Breastmilk of Women 3. PL015COO - Development of Malaysian Students' Healthy Meal Plan for Public University Students in Peninsular Malaysia 4. PD033COO - Food Pattern, Dietary Diversity Score, and Money Expenditure Priorities among Mothers Living in the Stunting Locus of Muara Enim Regency *Moderator: Assoc. Prof. Dr. Chin Yit Siew, Universiti Putra Malaysia*	https://ipb.link/room2-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 975 1364 5677 Passcode: 872447

Thursday, 17 November 2022 (Day 1)		
Time (GMT+7)	**Activity**	**Zoom**
10.50 – 11.50	**Zoom 3:** *Food Innovation* 1. PD004FOO - High Fiber Snack Bar Made from Purple Sweet Potato (*Ipomea batatas*) and Black Soy-Bean (*Glycine soja* Sieb) 2. PD041FOO - Sensory Acceptance, Antioxidant Activity, and Dietary Fiber Content of Tekwan Supplemented with Cassava Leaf Powder 3. PD061FOO - High Fibre Instant Noodles Made from Beneng Taro Flour (*Xanthosoma undipes*) *Moderator: Dr. Zuraidah Nasution, IPB University*	https://ipb.link/room3-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 973 0585 0903 Passcode: **777573**
	Zoom 4: *Sports Nutrition* 1. PD040SPO - Cold-Sterilized Coconut Water Improves the Rehydration and Recovery of Female Adolescent Futsal Athletes in Bogor, Indonesia 2. PD050SPO - Nutrient Intake and Body Image Perception in Bodybuilding Athletes: A Narrative Review 3. PD108SPO - The CorrelationoOf Adiposity, Energy and Macronutrients Intake with Cardiorespiratory Fitness in Obese Male Adolescents *Moderator: Mr. Muhammad Aries, IPB University*	https://ipb.link/room4-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 925 8798 8330 Passcode: **088650**
11.50 – 11.55	*Closing of Day 1 – Morning session*	
11.55 – 13.00	*Lunch break*	
13.00 – 13.45	**Plenary session 3:** *Assoc. Prof. Dr. Wantanee Kriengsinyos, RD, Institute of Nutrition, Mahidol University, Thailand* **"The roles of registered dietitians in the prevention and management of non-communicable diseases"** *Moderator: Dr. Rimbawan, IPB University*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
13.45 – 14.05	**Poster presentation session 2** 1. PD010COP - Risk Factors of Sleep Duration among Shift Workers 2. PL022COP - Socio-Economic Status, Food Security Status and its Coping Strategies among 'The Lost Food Project' (TLFP) Recipients in Klang Valley During Covid-19 Pandemic 3. PL046SPP - Body Composition and Body Satisfaction of the Bodybuilding and Physique Sports from Bangkok Sports	
14.05 – 15.05	**Oral presentation session 2** **Zoom 1:** *Clinical Nutrition* 1. PL024CLO - 4.5 Tonnes of Food Wasted Across a Hospital Ward: A Service Evaluation of Dietary Intake and Food Waste in Older Hospitalised Trauma and Orthopaedic Patients 2. PL048CLO - Multi-Level Texture Modified Diets for Elderly South-Asian Population with Oropharyngeal Dysphagia Based on Home Cooking 3. PL056CLO - Design and Development of Dietcare: An Online Nutritional Care Database Management System – An Initiative Model Proposal 4. PD069CLO - Lifestyle Factors Associated with Blood Glucose Level of Type 2 Diabetes Mellitus Patients in Pekanbaru City, Riau Province, Indonesia *Moderator: Assoc. Prof. Dr. Norhaizan Mohd Esa, University Putra Malaysia*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
	Zoom 2: *Community Nutrition* 1. PL034COO - Development of Local Food-Based Dietary Recommendations Using Linear Programming Approach for Malaysian Undernourished Children Aged 24 to 48 Months Old 2. PD037COO - Relationships of Demographic, Healthy Living Behaviour, and Maternal Nutrition Knowledge with Stunting among School-Aged Children in Cihampelas District, West Bandung Regency	https://ipb.link/room2-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 975 1364 5677 Passcode: 872447

Thursday, 17 November 2022 (Day 1)		
Time (GMT+7)	**Activity**	**Zoom**
14.05 – 15.05	3. PD039COO - Nutritional Fulfilment of Children Under Three in Stunting Area of Kepung Public Health Center, Besowo Village, Kediri Regency 4. PD042COO - The Correlation Between Body Fatness and Short-Term Memory of Primary School Children in Bogor, Indonesia *Moderator: Prof. Dr. Ali Khomsan, IPB University*	
	Zoom 3: *Food Innovation* 1. PD018FOO - Potentials of Fiber, Antioxidant Activity and Prebiotic Property of Three Indonesian Seaweed: A Narrative Review 2. PD026FOO - Total Flavonoids and Total Phenolic in Nipah (*Nypa fruticans* Wrumb) Fruit Extract as a Candidate for Hyperglycemic Control 3. PD105FOO - In Vitro Iron and Zinc Bioaccessibility of Alternative RUTFs from Locally-Available Ingredients *Moderator: Dr.agr. Eny Palupi, IPB University*	https://ipb.link/room3-2nd-ipb-icnf-2022 Meeting ID: 973 0585 0903 Passcode: **777573**
	Zoom 4: *Community Nutrition* 1. PD044COO - Diet Quality, Nutritional Intake and Double Burden of Malnutrition of School-Going Adolescent Girls in Bogor, West Java, Indonesia 2. PD051COO - The Association of Birth Weight History and Other Factors with Children's Health Status in Padang City 3. PD066COO - Eating Habits and Sleep Quality of University Students During The Covid-19 Pandemic In West Java 4. PL070COO - Evaluation of Nutritive Value of Commercially Packaged Snacks Available in Thai Supermarkets *Moderator: Ms. Resa Ana Dina, IPB University*	https://ipb.link/room4-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 925 8798 8330 Passcode: **088650**
15.05 – 15.25	**Poster presentation session 3** 1. PD049COP - Balance Nutrition Training for Raudhatul Athfal (RA) Teachers in Semarang City 2. PD071COP - Contribution of Economic and Food Consumption Factors Toward Stunting Prevalence among Children Age 0-59 Months in Indonesia 3. PD073COP - Exclusive Breastfeeding among Infants Age 6-24 Months in Jayapura City (A Study in Abepura Community Health Center)	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
15.25 – 16.25	**Oral presentation session 3** **Zoom 1:** *Clinical Nutrition* 1. PD080CLO - Lipoprotein Lipase and Cholesteryl Ester Transfer Protein Gene Polymorphisms-Dietary Intake Interactions on Lipid Traits: A Review of Nutrigenetic Studies in Asian Indians 2. PL101CLO - Development of Myanmar Protein and Calorie Counting Booklet for Chronic Kidney Disease Patients 3. PD102CLO - Weight Loss in Covid-19 Patients and its Relationship with Appetite Level and Energy Intake During Hospitalization *Moderator: dr. Karina Rahmadia Ekawidyani, IPB University*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
	Zoom 2: *Community Nutrition* 1. PD074COO - Nutrition Attitude and Covid-19 Vaccine Intention of Indonesian 2. PD079COO - Snack Consumption and Physical Activity Associated with Overweight in Adolescents at Nururrahman Islamic Senior High School in Depok City, Indonesia 3. PD082COO - Children's Eating Habits in Agricultural and Coastal Areas *Moderator: Ms. Anna Vipta Resti Mauludyani, IPB University*	https://ipb.link/room2-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 975 1364 5677 Passcode: 872447

Thursday, 17 November 2022 (Day 1)		
Time (GMT+7)	**Activity**	**Zoom**
15.25 – 16.25	**Zoom 3:** *Food Innovation* 1. PD017FOO - Effect of Ultrasound Treatment on Quality Of Pineapple (*Ananas comosus*) 2. PD021FOO - Supercritical Carbon-Dioxide Papaya Seed Extract (*Carica papaya* L.) as Alternative Oil Raw Materials in Supporting Sustainability Development Goals (SDGs) 3. PL043FOO - Stingless Bee Honey as Superfood : An Industry Gimmick or Real Science? 4. PD086FOO - Development of Alternative Ready-To-Use Therapeutic Food (RUTF) Using Locally-Available Protein Sources: Milk, Legumes, and Fish *Moderator: Dr. Budi Setiawan, IPB University*	https://ipb.link/room3-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 973 0585 0903 Passcode: **777573**
	Zoom 4: *Community Nutrition* 1. PD008COO - Acceptance of Risk Management Plan for Indonesian School Food Environment and its Related Factor 2. PL096COO - Complementary Feeding Practices of Mothers in Three Geographical Areas in Virac, Catanduanes, Philippines 3. PD100COO - Hypertension in Pregnant Women: Relationship with Nutrients Intake, Physical Activity and Pregnancy Characteristics *Moderator: Mr. Muhamad Aries, IPB University*	https://ipb.link/room4-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 925 8798 8330 Passcode: **088650**
16.25 – 16.30	*Closing of Day 1 – Afternoon session*	

DAY 2

18TH NOVEMBER 2022, FRIDAY

Friday, 18 November 2022 (Day 2)		
Time (GMT+7)	**Activity**	**Zoom**
08.25 – 08.30	**Opening of Day 2**	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
08.30 – 09.15	**Plenary session 4:** *Assoc. Prof. Dr. Elizabeth Ryan, Department of Environmental and Radiological Health Sciences, Colorado State University, USA* **"Gut microbial metabolism of whole grains and legumes across the lifespan for chronic disease prevention"** *Moderator: Dr. Zuraidah Nasution, IPB University*	
09.15 – 10.00	**Plenary session 5:** *dr. Rina Agustina, PhD, Faculty of Medicine, Universitas Indonesia, Indonesia* **"Environmental risk factors associated with child stunting"** *Moderator: Dr. Cesilia Meti Dwiriani, IPB University*	
10.00 – 10.20	**Poster presentation session 4** 1. PD001FOP - Banana Peel and Catfish-Based Brownies as an Alternative Snack for Preventing Stunting 2. PD012FOP - Bread Made from Local Ingredients (Red Bean, Soybean, and Corn) Flour: An Acceptance and Potential Nutritive Supplementary Product for Pregnant Women 3. PD088FOP - Effect of Pumpkin Puree (*Cucurbita moschata*) Substitution and Fermentation Time Differences in The Production of Maros Bread (*Roti Maros*) 4. PL047FOO - Effect of Fermentation on Antioxidant Contents, Antioxidant Activity, and Mineral Contents of Cleome Gynandra Leaves	
10.20 – 11.20	**Oral presentation session 4** **Zoom 1:** *Food Innovation* 1. PD038FOO - Characteristics of Bread From Purple Sweet Potato Flour with the Addition of Hemicellulase Enzyme 2. PD052FOO - Antibacterial Activity of Dairy Kefir Beverage for *Escherichia coli, Staphylococcus aureus*, And *Bacillus subtilis* 3. PD083FOO - Anti-Ageing and Anti-Diabetic Potential of Watermelon Rind Kombucha: An in Vitro Exploration *Moderator: Dr. Ir. Lilik Kustiyah, IPB University*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
	Zoom 2: *Community Nutrition* 1. PD103COO - Relationship of Percent Body Fat with Hydration Status in Adolescents 2. PD110COO - Associations between College Students Nutrition Knowledge, Eating Habits, and Physical Activity during Covid-19 Pandemic 3. PD111COO - Effect of Islamic Alternate-Day Fasting (Daud Fasting) on Body Weight, Body Fat, and Skeletal Muscle in Male and Female Obese Young Adults in Dramaga, Bogor, Indonesia 4. PD112COO - High Prevalence of Metabolic Syndrome among Middle-Aged People in Rural Area of Cianjur, Indonesia *Moderator: dr. Mira Dewi, PhD, IPB University*	https://ipb.link/room2-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 975 1364 5677 Passcode: 872447

Friday, 18 November 2022 (Day 2)		
Time (GMT+7)	**Activity**	**Zoom**
10.20 – 11.20	**Zoom 3:** *Food Innovation* 1. PD027FOO - Administration of Milk-Based Drinks (MDs) Containing Lactic Acid Bacteria (LAB) Improves Calcium Femur Level of The Rat'S Offspring 2. PL035FOO - Proximate Composition and Calcium Content of Adlai (*Coix lacryma*-Jobi L.)- Pili (*Canarium ovatum* L.) Drink 3. PD045FOO - Effect of Soymilk Substitution on Nutrient Profile, Oxidative Stability and Sensory Preference of Malay Chicken Curry 4. PD062FOO - Development of Nutrition Shake Made from the Substitution of Cow Milk, Mung Bean and Corn as a Beverage for Underweight Toddlers *Moderator: Prof. Dr. Sri Anna Marliyati, IPB University*	https://ipb.link/room3-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 973 0585 0903 Passcode: **777573**
	Zoom 4: *Community Nutrition* 1. PD125COO - The Risk Factors of Hypertension among Female Batik Workers 2. PD032COO - Canalization, the Synthesized Model on Improving Determinant Factors of Sunting in 1000 Early Life in West Bandung Region, Indonesia 3. PD113COO - Effects of Two-Year Covid-19 Pandemic on the Consumption of Beverages among Indonesian Women *Moderator: dr. Karina Rahmadia Ekawidyani, IPB University*	https://ipb.link/room4-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 925 8798 8330 Passcode: **088650**
11.20 – 11.25	*Closing of Day 2 – Morning session*	
11.25 – 13.00	*Lunch break*	
13.00 – 13.45	**Plenary session 6:** *Prof. Dr. Stephen Bird, School of Health and Medical Sciences, University of Southern Queensland, Australia* **"Food and nutrition for fitness and for athlete performance"** *Moderator: Dr.agr. Eny Palupi, IPB University*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
13.45 – 14.05	**Poster presentation session 5** 1. PD097FOP - Proximate Analysis and Antioxidant Activity Assay of Four Selected Indonesian Fruit: *Clausena excavata*, *Kadsura scandens*, *Pyrenaria serrata*, and *Phaleria macrocarpa* 2. PD117COP - Effect of Audio Visual Educational Media on Adolescent Knowledge of Anaemia in SMP 7 Jambi City, Indonesia 3. PD031COP - Acceptance of Catfish Nuggets to Improve the Health of Children Under Five Years Old in Preventing Stunting in the Coastal Area at Semarang	
14.05 – 15.05	**Oral presentation session 5** **Zoom 1:** *Food Innovation* 1. PD019FOO - A Preliminary Study on Protein and Mineral (Ca, P, Fe, And Zn) Content of Chicken Feet Porridge as Food Ingredient for Pregnant Women 2. PD077FOO - Cookies from Velvet Beans Tempeh (*Mucuna pruriens*) as Potential Snack from Indigeneous Legumes: Acceptability, Nutritional and Amino Acids Assessments 3. PD109FOO - Antioxidant Activity and Mineral Content of Pohpohan (*Pilea trinervia*) Nori with Yam (*Dioscorea alata*) Starch and Carrageenan 4. PL122FOO - Effect of Enzymatic Hydrolysis Time on Antioxidant Activity of Protein Hydrolysates from Sea Cucumber (*Holothuria scabra*) *Moderator: Ms. Reisi Nurdiani, IPB University*	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**

Friday, 18 November 2022 (Day 2)		
Time (GMT+7)	**Activity**	**Zoom**
14.05 – 15.05	**Zoom 2:** *Community Nutrition*	https://ipb.link/room2-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 975 1364 5677 Passcode: 872447
	1. PD007COO - Nutrition Behaviours of Mothers and Preschool Teachers and Their Supporting and Inhibiting Factors: A Qualitative Research Using Focus Group Discussion	
	2. PD118COO - Consumption of Iron-Rich Food in Children Under Two Years in Urban and Rural Area in Indonesia: An Analysis of Indonesian Demographic And Health Survey 2017	
	3. PD060COO - Urinary Pyridinium Crosslinks as a Convincing Biomarker of Linear Growth in Adolescents	
	Moderator: Prof. Dr. Dodik Briawan, IPB University	
	Zoom 3: *Food Innovation*	https://ipb.link/room3-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 973 0585 0903 Passcode: **777573**
	1. PD014FOO - Fatty Acid Profiles of Virgin Coconut Oils Originated from Bangka	
	2. PD020FOO - Edible Insects as an Alternative Protein: A Mini Meta-Analysis	
	3. PL036FOO - Nutrient Content, Carbohydrate Profile and In Vitro Glycemic Index of Giant Swamp Taro [*Cyrtosperma Merkusii* (Hassk.) Schott]	
	4. PD025FOO - Essential Fatty Acid, Phospholipids, and Morphological Characteristics of Bone Marrow Microcapsules	
	Moderator: dr. Naufal Muharram Nurdin, IPB University	
	Zoom 4: *Community Nutrition*	https://ipb.link/room4-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 925 8798 8330 Passcode: **088650**
	1. PD053COO - Comparison of The Effectiveness of E-Booklets and Animation Videos on Knowledge and Attitude of Anemia in Adolescent Girls in Senior High School in Bogor, Indonesia	
	2. PD063COO - Impact of a Community-Led Health and Nutrition Training for Women of Oil Palm Smallholder Farmers in Riau, Sumatra, Indonesia	
	3. PD065COO - Changes in Knowledge, Attitudes and Fruit Consumption Practices of Participants in "Let's Drink Fruit" Program	
	Moderator: Prof. Dr. Ali Khomsan, IPB University	
15.05 – 16.05	**Oral presentation session 6**	https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
	Zoom 1: *Food Innovation*	
	1. PD059FOO - Zinc and Iron Content of Biofortified Rice Variety Inpari IR Nutri Zinc	
	2. PD068FOO - Changes in Anti-Nutritional Compounds of Germinated Legumes: A Meta-Analysis	
	3. PD087FOO - Tiwai Coffee: Brightness and Sensory Characteristics and Their Effect on Human Immunity	
	Moderator: dr. Naufal Muharam Nurdin, IPB University	
	Zoom 2: *Community Nutrition*	https://ipb.link/room2-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 975 1364 5677 Passcode: 872447
	1. PD009COO - Factors Associated with Anaemia among Adolescents of Food Insecurity Households in Post-Disaster Suburban Areas	
	2. PD064COO - Nutritional Knowledge, Food Consumption, and Nutritional Status of Primary School Children at Teluk Batang Village, North Kayong District, West Kalimantan Province	
	3. PL119COO - The Effectiveness Info-Nutriteen® Education Program On The Knowledge, Attitudes And Practices of The Use of Nutrition Labels and The Nutritional Status of Adolescents	
	Moderator: Ms. Anna Vipta Resti Mauludyani, IPB University	

Friday, 18 November 2022 (Day 2)		
Time (GMT+7)	**Activity**	**Zoom**
15.05 – 16.05	**Zoom 3:** *Food Innovation* 1. PD058FOO - Development of Inpari IR Nutrizinc Instant Rice: Physical Properties, Sensory Characteristics, and Nutrients Content 2. PD091FOO - Cocoyam (*Xanthosoma sagittifolium*) Noodles for Dyslipidemia: Physicochemical and Sensory Characteristics 3. PD107FOO - Potentials of Modified Beneng Taro (*Xanthosoma undipes* K.Koch) Flour as an Alternative Functional Food Ingredient *Moderator: Dr. Cesilia Meti Dwiriani, IPB University*	https://ipb.link/room3-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 973 0585 0903 Passcode: **777573**
	Zoom 4: *Community Nutrition* 1. PD016COO - Child Nutrition Prior and During Early Pandemic and its Relation to Socio-Economic Status of Household in Bogor City 2. PL120COO - Development of Low-Fat Pamphlets Based on the Transtheoretical Model for Ischemic Stroke Patients 3. PL123COO - Knowledge, Attitude and Practice of Early Childhood Feeding among Parents in Malaysia *Moderator: Prof. Dr. Dodik Briawan, IPB University*	https://ipb.link/room4-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 925 8798 8330 Passcode: **088650**
16.05 – 16.20	**Awards ceremony & Closing ceremony** **Best paper awards** *(Head of Scientific Committee of ICNF 2022: Prof. Dr. Ali Khomsan)* **Closing remarks** *(Dean of Faculty of Human Ecology, IPB University: Prof. Dr. Ujang Sumarwan)*	Link Zoom Meeting : https://ipb.link/room1-2nd-ipb-icnf-2022 Meeting ID: Meeting ID: 943 8653 7012 Passcode: **981171**
16.20 – 16.25	*Closing of the conference*	

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ABSTRACTS

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CLINICAL NUTRITION

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FOOD INNOVATION

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PLENARY SESSIONS

Precision Nutrition for Preventing Non-Communicable Diseases Using Nutrigenetic & Nutrigenomic Approaches

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Summary

Individuals differ from each other in their genetic makeup due to which individuals respond differently to various lifestyle factors such as diet and physical activity. These genetic differences are the key enabler of the emerging nutrigenetics and nutrigenomics areas of research. Obesity is a heritable trait that arises from the interactions between multiple genes and lifestyle factors such as unhealthy diet and physical inactivity. Dietary factors play an important role in the development of obesity because of the variation in the food that is being consumed in different parts of the world. Although several studies have examined the gene-nutrient interactions, the findings have been quite inconsistent and hence, unable to develop an optimum diet for each ancestral population. Nutrigenetics has highlighted the complexity of gene-diet interactions but it offers opportunities to re-evaluate criteria used to set dietary guidelines and the contribution of genetic variation to optimal nutrition for individuals from different ethnic groups. In line with this, a large-scale collaborative project called GeNuIne (Gene-Nutrient Interactions) Collaboration that aims to develop personalised nutrition strategies based on the evidence from nutrigenetics, nutrigenomics and dietary intervention studies using cohorts from various ethnic groups has been initiated. In this collaborative study, gene-nutrient interactions on obesity-related traits in diverse ethnic groups are being examined. If the interactions between genetic variations and nutritional requirements are better understood in various ethnic groups, dietary recommendations could be personalised according to genotype to ultimately promote health and reduce disease risk.

Food and Nutrition Security in Southeast Asia

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Summary

Individuals and families in Southeast Asia Countries face economic, physical, social, and cultural barriers to consuming healthy and nutritious diets. These barriers to obtain good nutrition has continued over time, while others are new and evolving modernization and urbanization such as shifting from purchasing food in markets to modern grocery stores. Currently, unhealthy foods are increasingly available, affordable, and preferred, climate change and humanitarian crises become critical threats to feed the populations and COVID-19 pandemic disturb the food systems. Thus, there phenomenon contribute to the poor quality of diets. The most recent estimates of malnutrition, diets and food choices in Southeast Asia Countries indicate the progress is too slow to meet the 2025 global nutrition targets. Too many children in Southeast Asia Countries are starting life at a disadvantage such as moderate to high levels of stunting, wasting and overweight in most of the countries. In middle childhood, adolescence and adulthood, undernutrition continues while overweight is on the rise. The prevalence of non-communicable disease (NCDs) such as high blood pressure and diabetes is increasing. Several countries still struggle with suboptimal breastfeeding and complementary feeding practices. Meanwhile the consumption of unhealthy foods among adolescents and adults continues to increase. Nevertheless, persistent malnutrition and fluctuating nutrition landscape, the Southeast Asia Countries have made vital steps in adopting policies and programmes to improve nutrition across the lifecycle. These policies and programmes react as an enabling environment for nutrition to maintain healthy diets and lifestyles in the region and national level.

Keywords: Food and Nutrition Security, Southeast Asia, ASEAN

The Roles of Registered Dietitians in The Prevention and Management of Non-Communicable Diseases

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Summary

The health burden of morbidity and mortality attributable to noncommunicable diseases (NCDs) accounted for 74% of deaths globally in 2019. Unhealthy lifestyles, especially unhealthy diets, are the greatest contributor to this burden. Primary prevention has been recognized as the most effective and affordable strategy for reducing chronic disease risk. However, investing better management of NCDs, including detecting, screening and treating these diseases is also critical. Therefore, multi-factorial, multi-sectorial, and multi-disciplinary approaches are needed to combat NCDs. Registered dietitians are highly educated and trained professionals who work with allied medical professionals to improve dietary patterns and nutrition to promote overall wellness and achieve health goals. Dietitians work with individuals, organizations, and communities to deliver reliable dietary advice and empower communities to engage in and benefit from health promotion and NCDs prevention efforts. Clinical dietitians work in hospitals with interdisciplinary treatment teams to provide nutrition therapy to patients, and ensure diets meet individual needs. Effective dietary counselling that provides practical strategies that are integrable with individuals' lifestyles is generally performed. Dietitians may also run health and nutrition education programs or seminars, and provide nutrition and health information to the media. Dietitians working in community health centres work to improve eating habits, health and wellbeing for preventing NCDs in populations. Dietitians may also work at state or national levels of government to influence food policy and reinforce health systems through research dietetics, health promotion, and to service provision for NCDs treatment and management. Furthermore, dietitians working in the food service or food industry help improve nutrition quality of foods and modify environmental factors in support of NCDs prevention programs. Finally, dietitians support surveillance and program monitoring, and evaluation of population nutrition status and behaviours. In conclusion, dietitians provide numerous essential roles as part of the health care community to improve health and combat NCDs.

Keywords: Roles of Dietitians, Non-communicable Diseases, NCDs

CLINICAL NUTRITION

Antihypertensive Activity of Moringa Oleifera Leaves: A Preliminary Meta-Analysis

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Summary

Moringa oleifera (MO) is a popular medicinal plant with a wide range of health benefits. This preliminary meta-analysis aimed to quantitatively summarize the effect of MO leaves on blood pressure (BP). A literature search using several major databases was conducted to find the study evaluating the effect of MO leaves on BP. Five included studies were obtained in humans and animals, respectively. The meta-analysis showed both in animals and humans MO leaves significantly reduced systolic BP (-1.39 mmHg; -0.81 mmHg, respectively) and diastolic BP (-0.09 mmHg; -1.10 mmHg, respectively). Hence, MO leaves might provide a beneficial effect to prevent hypertension.

Keywords: Blood pressure, hypertension, meta-analysis, *Moringa oleifera* leaves

Comparison of Nutritional Status Effect Between RUTF Standard and Modified RUTF in SAM Children: a Meta-Analysis

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Summary

Ready-to-Use Therapeutic Food (RUTF) is used as one of the therapies used in SAM children. RUTF, apart from being available in the WHO Standards, has also been modified according to a country's preferences and local food. This study compares the impact of standard RUTF and modified RUTF on the nutritional status of SAM. This study uses the systematic review method. Out of 3554 SAM studies, accessed from Science Direct, Google Scholar, PubMed, and Cochrane, 25 studies met the selection criteria. The result indicated that Modified RUTF significantly increases of rate weight, height, and MUAC per day, in children with SAM.

Keywords: Meta-analysis, nutritional status, ready-to-Use therapeutic food, severe acute malnutrition children

The Effect of Powdered Young Coconut Drink on Organ Weight and Lipid Profile of Experimental Diabetic Rats

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Summary

Powdered young coconut drink (PYCD) contains bioactive compounds that may improve diabetes mellitus (DM). This research assessed the effect of PYCD on organ weight and lipid profile in 50 mg/kg *streptozotocin*-induced diabetic rats. Thirty *Sprague-Dawley* male rats were separated into normal control; diabetic control; and diabetic treated with 0.6 mg/kg glibenclamide, 3.5 g/kg PYCD, and 7 g/kg PYCD. Administration of 3.5 and 7 g/kg PYCD for 45 days significantly increased liver and pancreas weight. Furthermore, it tended to decrease cholesterol and VLDL levels and increased HDL levels. Therefore, PYCD could improve organ weight and lipid profile in DM.

Keywords: Diabetes mellitus, lipid profile, organ weight, powdered young coconut drink, *Streptozotocin*

Lifestyle Factors Associated with Blood Glucose Level of Type 2 Diabetes Mellitus Patients in Pekanbaru City, Riau Province, Indonesia

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Summary

Identifying type 2 diabetes mellitus (T2DM) risk factors is essential for prevention. A cross-sectional study was conducted to analyse the correlation of lifestyle, nutritional status, and blood pressure with blood glucose of T2DM patients in Pekanbaru City. Forty T2DM patients with no complications were enrolled from two Community Health Centres. Energy and carbohydrate adequacy levels and blood pressure were positively correlated with blood glucose level. There was no significant correlation between other lifestyle factors and nutritional status with blood glucose level. Energy and carbohydrate intake should be monitored carefully in T2DM patients. Implementation of a healthy lifestyle should be emphasised.

Keywords: Blood glucose, consumption pattern, lifestyle, nutritional status, T2DM

Lipoprotein Lipase and Cholesteryl Ester Transfer Protein Gene Polymorphisms-Dietary Intake Interactions on Lipid Traits: A Review of Nutrigenetic Studies in Asian Indians

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Summary

Asian Indians have a dramatically high prevalence of multifactorial diseases that are influenced by the interplay of genetics and diet, which leads to abnormal lipoprotein metabolism. Lipoprotein lipase (*LPL*) and cholesteryl ester transfer protein (*CETP*) polymorphisms have been reportedly linked to lipid-related outcomes. In this review, the interaction of such genes-diet in lipid profiles among Asian Indians is examined. Searching for original researches utilized online databases (PubMed and Google Scholar). Three studies (2 cross-sectionals and 1 population-based) showed a significant interaction of *LPL* and *CETP* genes with lipid traits in different quantities of dietary fat among Asian Indians.

Keywords: Asian Indians, dietary fat, lipoprotein lipase, SNPs, Cholesteryl ester transfer protein

The Effect of Probiotic Intake on Metabolic Syndrome: A Meta-Analysis

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Summary

This meta-analysis aimed to assess the effect of probiotic intake on individuals with metabolic syndrome. The articles were searched by using the PubMed database. From 526 identified articles, as many as 11 studies were selected for further data analysis using Hedges effect size. The result revealed that probiotics intake is associated significantly with reduced body mass index (MD: -0.546, 95% CI -0.824 to -0.268, $p<0.001$), and blood pressure. Probiotic intake was found to have no effect on glucose, insulin sensitivity, HDL, LDL, and total cholesterol. This study indicates that probiotics may have a beneficial effect in lowering our BMI.

Keywords: Body mass index, meta-analysis, metabolic syndrome, probiotic.

Weight Loss in COVID-19 Patients and its Relationship with Appetite Level and Energy Intake during Hospitalization

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Summary

COVID-19 patients tend to be through significant weight loss, and a decrease in the patient's appetite can result in weight loss. This study evaluates the relationship between energy intake, macronutrients, and appetite with changes in the body weight of COVID-19 patients. The study design was the cross-sectional approach. Data were collected on nutrient intake using 24-hour recall, measuring appetite levels using the Simplified Nutritional Appetite Questionnaire (SNAQ). There was a significant relationship between weight loss and energy intake during hospitalization. Weight loss was caused by a decrease in the level of appetite, resulting in a deficit in energy intake.

Keywords: Appetite level, COVID-19, energy intake, weight loss

Malnutrition as an Associated Factor of the Sarcopenia Risk Using SARC-Calf and SARC-Calf 31 in Oncology Patients Undergoing Chemotherapy

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Summary

Cancer-related sarcopenia is a common condition for cancer patients during chemotherapy. However, studies regarding sarcopenia risk prevalence and associated factors in Indonesia are scarce. This study aims to analyze the prevalence and factors associated with sarcopenia risk. A cross-sectional study of 267 adult patients with cancer receiving IV chemotherapy at Kariadi General Hospital, Indonesia, was conducted. Malnutrition had a relationship with SARC-Calf (p=0.001) and SARC-Calf 31 (p=0.003). This study concludes that malnutrition strongly correlates with the sarcopenia risk, so screening for sarcopenia is vital in this population.

Keywords: Malnutrition, sarcopenia risk, cancer, chemotherapy

The Effect of Lowering Cholesterol Levels by Intervention with Mixture of Milk Yogurt and Temulawak

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Summary

Milk yogurt and temulawak have anti hypercholesterol potential. The purpose of this study was to determine the effect of milk yogurt and temulawak intervention on total cholesterol levels in hypercholesterolemic rats. This randomized control trial with preand post test design was carried out for 21 days involved four groups of treatment. K0 as control, K1 (50:50), K2 (50: 25), and K3 (25:50). The result shows a significant decrease in cholesterol levels inall groups. This study highlight the potential of mixedmilk yogurt and temulawak as formulas for lowering cholesterol levels.

Keywords: Lowering cholesterol level, milk yogurt, rats, temulawak

Selection of Extraction Methods for Determination of Total Faecal Bile Acids in Malaysian Adults on a Palm Oil Diet

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Summary

Bile acids are closely related to gut health. Variations in faecal total bile acid (TBA) extraction methods, and reporting units convoluted the comparison between studies. This study was conducted to evaluate the effect of different faecal TBA extraction methods, including mechanical, heating, and sequential refluxing using organic solvents, in healthy adults who consume a standard Malaysian diet. The TBA was quantified using an enzyme-spectrophotometric method, and the TBA yield was reported in different units. The sequential reflux method demonstrated the highest TBA yield. However, more attention is needed when comparing the TBA values reported in different units.

Keywords: Enzyme-spectrophotometric method, palm oil diet, solvent extraction, sonication, total bile acids

Multi-Level Texture Modified Diets for Elderly South-Asian Population with Oropharyngeal Dysphagia Based on Home Cooking

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Summary

In this study, six representative South-Asian dishes were modified to obtain three different levels of texture-modified diets (i.e., liquidized, pureed, and minced and moist) as described by International Dysphagia Diet Standardization Initiative (IDDSI). Six texture-modified dishes with the energy density of 1.12-1.78 kcal/gm were developed into three levels of IDDSI. The liquidized diets had comparatively lowest energy content (286.94-355.08 kcal/serving) followed by pureed diets (310.99-381.29 kcal/serving), and minced and moist had the highest energy (346.31-398.60 kcal/serving). All the texture-modified diets complied with IDDSI tests specific to each level.

Keywords: Energy density, international dysphagia diet standardization initiative (IDDSI), oropharyngeal dysphagia, texture-modified diets

A Service Evaluation of Dietary intake, Food Waste and Oral Nutritional Supplement Compliance in Older Hospitalised Trauma and Orthopaedic patients

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Summary

Malnutrition is a debilitating condition in hospitalised older people. Oral nutritional supplements (ONS) are used to treat malnutrition, as they improve energy and protein intake. This study estimates energy and protein intake, plate waste and ONS compliance in older trauma and orthopaedic (T&O) patients and food waste at ward level. Three-day dietary histories (food-only) and plate waste were visually estimated. Energy and protein intakes were compared with British Dietetic Association standards. Food and ONS waste was weighed. The results indicate that dietary intake and ONS compliance in older T&O patients is low and food waste on the ward high.

Keywords: Dietary intake, ONS, older people, T&O patients

Design and Development of DietCARE: An Online Nutritional Care Database Management System – An Initiative Model Proposal

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Summary

The delivery of dietetic services at Klinik Diet, Universiti Malaysia Terengganu (UMT) still uses the conventional method of keeping its clients' records in files since its opening in 2018. Therefore, we proposed to develop our own online nutritional database management system namely DietCARE to deliver high-quality dietetic services to the clients. This study aims to describe the flow process of designing DietCARE and its features. The process included observations, interviews, discussion, reviewing the past paper-based medical records, and conducting a literature review. The DietCARE features consist of two main modules: the Patient Management Module and the Dietitian Module.

Keywords: DietCARE, design and development, nutrition, nutrition care process model, online database

Development of Myanmar Protein and Calorie Counting Booklet for Chronic Kidney Disease Patients

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Summary

A validated food list for protein counting tool is a basic step in nutrition education for Chronic Kidney Disease (CKD) patients. In this study, common Myanmar food lists are enable to count in terms of energy(kcal) and protein(g) per portion with some highlights of important minerals such as potassium, and sodium. 12 food groups from the Myanmar food composition database (FCD) are selected and nutrient profiles are recalculated to the nearest values by referencing from Myanmar, ASEAN, and some on India FCD. More than half of common fruits contain a moderate amount of 100-200mg of potassium per serving.

Keywords :Chronic kidney disease, nutrient data on burmese foods, protein counting booklet, renal food lists

COMMUNITY NUTRITION

Parental Feeding Practice and Micronutrient Intake of Children in North Jakarta, Indonesia

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Summary

Indonesian toddlers consume less micronutrients than RDA, and parental involvement is crucial because they may control food and provide an example. This study studied children's iron and vitamin C intake in North Jakarta with total sample of 191 caregivers and children. Children's iron and vitamin C intake was assessed using 2x24h food recall interviews. The Child Feeding Questionnaire evaluated parental feeding patterns. The research studied correlation between child feeding behaviors with iron and vitamin C intakes, only monitoring were linked to iron and vitamin C consumption ($p<0.01$) with the median intake of iron was 6.7 mg and median intake of vitamin C was 20.3 mg.

Keywords: Feeding practice, Iron intake, Monitoring, Toddler, Vitamin C Intake**.**

Behaviors of Mothers and Preschool Teachers and Their Supporting and Inhibiting Factors: A Qualitative Research Using Focus Group Discussion

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Summary

The nutritional behavior of mothers and preschool teachers influences the nutritional status of children. This research aims to analyze the nutritional behavior and their supporting and inhibiting factors in focus group discussions method.This involved mothers and teachers groups consisting 8 people for each. The results showed that mothers still have low nutritional knowledge because they only understand the concept of 4 healthy 5 perfect nutrition, not balanced nutrition. The supporting factor is the provision of nutrition education in school. The cooperation of mothers and teachers in implementing good nutrition in children will increase their nutritional intake and health.

Keywords: Inhibiting factors, focus group discussion, nutrition behavior, preschool children, supporting factors

Acceptance of Risk Management Plan for Indonesian School Food Environment and Its Related Factor

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Summary

This study aims to develop a risk management plan for Indonesian school food environment and to explore the factors that might influence parents' acceptance to the plan. An online survey was conducted on children's parents from public and private schools in Indonesia through various online community group in 2018. The proposed plan assigned a certain safe zone area around school. Majority of subjects agreed that the plan should be implemented. The factors correlated to subjects' acceptance to the plan differs between public and private school parents, indicating that different approach might be needed when implementing the plan.

Keywords: Food safety, risk management plan, school food environment, street food

Factors Associated with Anaemia among Adolescents of Food Insecurity Households of Post-Disaster Suburban Areas

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Summary

Anaemia is an adolescent health problem in Indonesia. The purpose of this study was to determine the factors associated with anaemia, including nutrient intake, eating habits, anthropometry, nutritional knowledge and the influence of friends and parents for adolescents living in food-insecure households in post-disaster suburban areas in Palu, Indonesia. A total of 108 adolescents from households facing food insecurity were chosen by consecutive sampling. Frequent consumption of eating sweet food, the lower nutrient adequacy ratio (NAR) of iron and higher NAR of calcium were found to be significantly associated with anaemia ($p<0.05$). Proper eating behaviour is important to prevent anaemia.

Keywords: Adolescents, anaemia, food insecurity, nutritional status, post-disaster

Risk Factors of Sleep Duration among Shift Workers

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Summary

The previous studies showed that shift workers had a higher risk of Non-Communicable Diseases (NCDs), related to the low duration of sleep. This study investigates the association of income reduction, breakfast habits, and exercise with sleep duration. The present study used a case-control design with 148 subjects. The result shows the sleep duration of shift workers was associated with income reduction and exercise, but not with breakfast habits. This result indicates the disruption of economic factors during the Covid-19 pandemic affect the sleep quality of shift workers.

Keywords: Eating habits, exercise, occupation, shift worker, sleep

Factors Associated to Protein Concentration in Breastmilk of Women in Makassar, Indonesia

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Summary

Proteins in breastmilk are contributors to beneficial effects on an infant's health and development. This study aimed to evaluate correlation of protein concentration in breastmilk with maternal nutritional status and dietary intake. Respondents were measured their height and weight and interviewed their dietary intake. Breastmilk sample was collected to analyse total protein. Means of protein concentration of mature breastmilk was 1.08 g/dl. About 78.6% of the women are in normal range of BMI. Protein concentrations of breastmilk had no significant correlation with maternal current BMI and maternal diet, but it showed significant correlation with pre-pregnancy maternal BMI.

Keywords*:* Breastfeeding, daily intake, breastmilk, maternal BMI, protein concentration

Child Nutrition Prior and During Early Pandemic and Its Relation to Socio-Economic Status of Household in Bogor City

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Summary

This study aimed to examine the socio-economic status (SES) of households and child nutrition prior to and during early pandemic. The SES measured the objective well-being of the household, and subjective well-being measured the family's perception of wealth satisfaction. The child nutrition data before the pandemic was collected using a growth card and measured during pandemic using anthropometrics assessment (weight per age). Before the pandemic (January-March) in 2020, the percentage of underweight children increased, then decreased consecutively in March and one month later. In addition, the study showed that mothers' education related to children's nutrition before and during early pandemic.

Keywords: Child nutrition, Covid-19, family well-being, socio-economic, U-5 children

Acceptance of Catfish Nuggets to Improve the Health of Children Under Five Years Old in Preventing Stunting in the Coastal Area at Semarang

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Summary

Consumption of catfish nuggets has a good influence on the health of children under five. Catfish is a high protein source, the price is cheap, and its availability is relatively abundant because it is easy to cultivate. This study aimed to nugget acceptability, identify the health of toddlers in coastal areas of Semarang, and assess the effect of giving the nuggets to the toddler nutritional status using Experimental design. Catfish nuggets are preferred to be consumed as a snack or side dish. The original catfish nugget got the highest score with a protein content of 28.5%. Giving catfish nuggets 100 grams per day for four months, may improve the toddler nutritional status. Regression analysis with R value of 0.88 This study aimed to explore the nugget acceptability, identify the health of toddlers in coastal areas of Semarang and assess the effect of giving the nuggets to the toddler nutritional status using experimental design. Catfish nuggets are preferred to be consumed as a snack. The original catfish nugget got the highest score with a protein content of 28.5%. Giving catfish nuggets 100 grams per day for how long? may improve the toddler nutritional status (with R value of 0.88).

Keywords: Catfish nuggets, high protein, toddler, nutritional status, Stunting prevention food.

Canalization, the Synthesized Model on Improving Determinant Factors of Sunting in 1000 Days of Early Life in West Bandung Region, Indonesia

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Summary

There are some socio-economic and infrastructure disparities between villages that contributed to poor program performance and variation in stunting rate. The purpose of this study is to identify the determinant factors of stunting at the micro-level and develop a synthesizing model for improving program performance. This survey was conducted at 20 priority villages and covered 640 households. The poor specific and sensitive program performance contributed to the high stunting level. The synthesized model is proposed as a strategy for developing the integrated program and synergizing target groups in a specific and sensitive nutrition intervention program.

Keywords: Determinant factors, stunting, synthesized model**,** toddler, West Bandung

Food Pattern, Dietary Diversity Score, and Money Expenditure Priorities among Mothers Living in the Stunting Locus of Muara Enim Regency

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Summary

Stunting remains a public health concern in Indonesia. This study aimed to analyse food pattern, individual dietary diversity score (IDDS), and money expenditure priorities among mothers living in the stunting locus of Muara Enim Regency. This cross-sectional study was conducted to 35 mothers who lived in stunting locus villages. The study found that low-frequency consumption of fruits (0.6 times/day) and vegetables (0.3 times/day) among the mothers. Only 11.4% of mothers were categorized to have good IDDS. Foods and education were the most prior need for the money expenditure. Moreover, instalment payment priority was significantly correlated with IDDS ($p<0.05$).

Keywords: Food pattern, IDDS, Locus, Money expenditure, stunting

Relationships of Demographic, Healthy Living Behaviour, and Maternal Nutrition Knowledge with Stunting among School-Aged Children in Cihampelas District, West Bandung Regency

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Summary

Stunting is a condition of height-for-age z score (HAZ) <–2 SD and is still a major nutritional problem in Indonesia. This cross-sectional study aimed to determine the relationships of demographic, healthy living behaviour, and maternal nutrition knowledge with stunting among school-aged children in Cihampelas, West Bandung. There were 241 school-aged children and their mothers in Pataruman and Tanjungwangi villages participated in this study. The results showed a significant relationship between the father's education level and maternal nutrition knowledge; parental education level and healthy living behaviour. Meanwhile, no significant relationship between parental education; mother's nutrition knowledge; healthy living behaviour and HAZ category.

Keywords: Healthy living behaviour, Maternal nutrition knowledge, Parental education, School-aged children, Stunting

Nutritional Fulfillment of Children Under Three in Stunting Area of Kepung Public Health Center, Besowo, Kediri

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Summary

Besowo Village is one of the focus locations to resolve stunting in Indonesia. To understand the nutrition fulfillment of under three children in the location, a case control study design was applied. The socio-economic characteristic of Besowo village society tends to be homogeneous. The incidence of stunting in there is influenced by birth length and history of early initiation of breastfeeding (EIB). Stunted children with EIB didn't continue exclusive breastfeeding. Parents' characteristic, history of micronutrient adequacy from supplements during pregnancy, nutrients adequacy of children, nutrition knowledge of mothers between two groups didn't show significant differences.

Keywords: Birth length, EIB, nutrients fulfillment, stunting

The Correlation between Body Fatness and Short-term Memory of Primary School Children in Bogor, Indonesia

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Summary

The study aimed to examine the correlation between Body Mass Index for age (BAZ), skinfold thicknesses (triceps and subscapular), and body fat percentage (%BF) to short-term memory (STM) in primary school children in in Bogor, Indonesia. A cross-sectional study design was applied for 893 students in Cijeruk, Bogor. Correlation between total of skinfold thickness and BAZ to STM were analysed by two models of logistic regression test (unadjusted model and adjusted by the covariates: subject's age, sex, parental education, and family income).The results showed that the body fatness of primary school children was not correlated with short-term memory after controlling for the age, sex, parental education, family income.

Keywords: Adiposity, cognition, elementary children, nutritional status, socioeconomic status

Diet Quality, Nutritional Intake and Double Burden of Malnutrition of School-Going Adolescent Girls in Bogor, West Java, Indonesia

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Summary

Double burden of malnutrition (DBM), the coexistence of under- and overnutrition, is a problem for adolescent girls. A total of 239 school-going adolescent girls from Bogor participated in this cross-sectional study that aimed to examine nutritional intake and diet quality in relation to different types of malnutrition. Anaemia, overweight, stunting, and DBM prevalence were 21.3%, 7.5%, 13.4%, and 10.5%, respectively. Subjects' dietary consumption was inadequate, particularly in micronutrients and among DBM subjects. Stunted adolescents ate more fat, while overweight and DBM subjects had poorer calcium intake. Overweight subjects favour vitamin A-rich plant foods over eggs and dairy products.

Keywords: Adolescent girls, anaemia, dietary diversity, double burden of malnutrition, stunting

Balance Nutrition Training for Raudhatul Athfal Teachers in Semarang City

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Summary

This study was aim to increase teacher knowledge in stunting prevention of students of Raudhatul Athfal (RA) in Semarang City using quasy-experimental design. The teachers selected from nine RA. The module consist of balance nutrition to prevent stunting, iron deficiency anaemia, obesity, and dengue haemorrhagic fever. Teachers' knowledge was collected through a questionnaire before and after the module implement for four session, each session 50 minutes presentation and discussion. The average of teacher knowledge is 83.39 (pre-test) and 98.46 (post-test) ($t = 4.099$, $p<0.01$**). Balance nutrition training can increase the knowledge of RA teachers.

Keywords: Balance nutrition training, Raudhatul athfal, Semarang city, stunting, teachers

The Association of Birth Weight History and Other Factors with Children's Health Status in Padang City

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Summary

Low birth weight is still a big concern in developing countries, including Indonesia. This study aimed to determine the association between mother and child's factors with the health status of children under two using a cross-sectional study in Padang City. A total of 189 children under two participated. Data was collected by a standardized questionnaires. The study found that low birth weight, visits to the health facility and maternal age at risk were the factors which associated with children's health status. We suggest increasing health education routinely among mothers to increase children's health status.

Keywords: Birth weight, health facility, maternal age, health status, children under two

Comparison of the Effectiveness of E-Booklets and Animation Videos on Knowledge and Attitude of Anemia in Adolescent Girls in Senior High School in Bogor, Indonesia

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Summary

Nutrition education should be delivered using the media. E-booklets and animation videos can increase knowledge and attitude, but comparing these two media has not been much compared. This study analyzed the effectiveness of e-booklets and animation videos on knowledge and attitude associated to anemia in adolescent girls. This research is quasi-experimental with a non-equivalent control group design with e-booklets, animation videos, and a control group. The 11 days intervention was delivered online via Whatsapp messenger. There is no difference in effectiveness between e-booklets (knowledge 82, attitude 91) and animation videos (knowledge 84, attitude 91) because each media has its advantages.

Keywords: Adolescent girls, anemia, animation videos, e-booklets, nutrition education

Urinary Pyridinium Crosslinks as a Sensitive Biomarker of Linear Growth in Adolescents

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Summary

The research aimed to assess urine Pyd as indicators that can be used to detect stunting incidents. The research design was a cross-sectional study. The subjects consisted of 64 selected teenagers (12-15 yo) at SMPN 1 Kampar in Riau Province. Subjects were measured on January 2022. The indicators of nutrition status were urine Pyd and HAZ as gold standards. Curve of receiver operating characteristic was used to assess the ability of diagnostic test. The ability of urine Pyd in diagnosing stunting was good (AUC area of 70.0%). The urine Pyd qualified as a predictor instrument for the incidence of stunting.

Keywords: Sensitivity, Stunting adolescents, Linear growth indicators, Pyridinium crosslinks, Height

Impact of a Community-Led Health and Nutrition Training for Women of Oil Palm Smallholder Farmers in Riau, Sumatra, Indonesia

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Summary

Health and nutrition training (HNT) potentially increase livelihoods of oil palm smallholder families. 3,949 women from three districts (Pelalawan, Rokan Hulu, and Rokan Hilir) in Riau Province, Indonesia was given HNT by trained women-leaders in three monthly sessions. A post-test control group design was applied to evaluate the HNT among 335 women and 100 control subjects. Results showed that women in the intervention group practiced more home gardening, fish farming, had better food security scores, food consumption scores and were more empowered compared to the control group. HNT showed promising results and potential to benefit a wider community.

Keywords: Nutrition training, women, home gardening, food security, food consumption

Nutritional Knowledge, Food Consumption, and Nutritional Status of Primary School Children at Teluk Batang Village, North Kayong District, West Kalimantan Province

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Summary

The aim of this cross-sectional study was to examine the correlation between nutritional knowledge and the quality of food consumption with the nutritional status of elementary school students in Teluk Batang Village, North Kayong District. The level of nutritional knowledge of the subject is classified as moderate. The results of the correlation test showed that the subject's nutritional knowledge, the subject's mother's nutritional knowledge, and the quality of food consumption were not significantly corelated with nutritional status (P>0.05). However, the level of protein adequacy had a significant negative relationship with the nutritional status of the subjects (P<0.05).

Keywords: Food consumption, nutritional knowledge, nutritional status, primary school children

Changes in Knowledge, Attitudes and Fruit Consumption Practices of Participants in "Let's Drink Fruit" Program

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Summary

Low fruit consumption in Indonesia has an impact on increasing the non-communicable disease risk. The objective of this study was to analyze the impact of the "Let's Drink Fruit" program in increasing mothers' knowledge, attitudes, and practices (KAP) in consuming and preparing fruits for their families. A pre-post intervention design using an online questionnaire was conducted in May-July 2022 and involved 100 mothers who were members of the online community. Overall this program significantly contributed ($p < 0.05$) to improving the participant's knowledge and practices in consuming and preparing fruits for their family.

Keywords: Attitude, fruit consumption, knowledge, online, practice.

Eating Habits and Sleep Quality of University Students during the COVID-19 Pandemic in West Java

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Summary

Activity restrictions during the COVID-19 pandemic have caused changes in way of live. The purpose of this cross-sectional study was to examine the eating habits and sleep quality of university students in West Java during the pandemic. A total of 152 subjects aged 17-25 years old completed an online survey. The results showed that changes were found in eating habit of the vegetables, fruits, and fast-food groups. As many as 93.4% subjects had poor sleep quality. Students' eating habits and sleep quality are changing during pandemic, and may affect their long-term health if continuously applied.

Keywords : COVID-19, eating habits, sleep quality, west java university students

Contribution of Economic and Food Consumption Factors toward Stunting Prevalence among children age 0-59 months in Indonesia

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Summary

Stunting prevalence in Indonesia is high and has negative consequences. This study aimed to analyze the contribution of economic variables and food consumption to stunting prevalence among children aged 0-59 months. The research used an ecological study with 34 provinces as the analysis unit. Multivariate linear regression backward elimination was used to analyze total and partial contribution of variables. Gini ratio, Gross Regional Domestic Product (GRDP), unemployment, food and non-food expenditures, Desirable Dietary Pattern (DDP) score, energy and protein adequacy rate were found to contribute towards stunting among children age 0-59 months in Indonesia (R^2=75.81%). Protein adequacy rate contributed 13.16% to increasing stunting. Meanwhile, DDP score contributed 20.03% to reducing stunting. Therefore, policies and programmes must focus on modifying animal-sourced foods consumption for diversity.

Keywords: Economic variables, food consumption, Indonesia, multivariate linear regression, stunting

Exclusive Breastfeeding among Infants Age 6-24 Months in Jayapura City (A Study in Abepura Community Health Center)

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Summary

Exclusive breastfeeding is the provision of breast milk to infants aged 0-6 months without the addition of any other food companion. Various factors, both external and internal, have been identified to influence towards exclusive breastfeeding. The purpose of this study was to determine the factors associated with exclusive breastfeeding among infants aged 6-12 months in Abepura Community Health Center's working area. This study used analytic observational, with a cross-sectional approach, that was conducted from July up to August 2021. One hundred respondents were involved in this study who were selected using random sampling technique. All the data in this study were collected using a questionnaire that was compiled to find the required information. The data that has been collected is then processed and analyzed using a computer program. A Ch-square test is used to analyze the correlation between the independent variable and the dependent variable. The results showed that 65% of respondents performed exclusive breastfeeding. Based on the Chi-Square test, it was known that the variables related to exclusive breastfeeding were knowledge (p value = 0.008); attitude (p value = 0.036); promotion of formula milk (p value = 0.003); family support (p value = 0.020), and support from health workers (p value = 0.013).

Keywords*:* Exclusive breastfeeding, infants

Nutrition Attitude and Covid-19 Vaccine Intention of Indonesian

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Summary

Consumption of a balanced nutritious diet can prevent infection. This study examines differences in nutrition attitude to prevent of covid-19 between the group intending to vaccinate and those who did not intend to vaccinate. This online study used a cross-sectional design, using online form. There were 1220 eligible subjects, who has differences in nutritional attitude between the groups who had plans to be vaccinated and those who did not, except on points related to eating a variety of foods.

Keywords: Covid-19 vaccine, diet, nutrition attitude, online research

Snack Consumption and Physical Activity Associated with Overweight in Adolescents at Nururrahman Islamic Senior High School in Depok City, Indonesia

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Summary

The prevalence of overweight in adolescents in Indonesia has increased, from 9.5% to 11.7% (1). Unhealthy eating behaviour can be factors that cause overweight in adolescents. In addition, low physical activity also significantly influences the incidence of overweight. This study determines the relationship between meal skipping, snack consumption, and physical activity with overweight in adolescents at Nururrahman Islamic Senior High School in Depok City, Indonesia. Data were collected using questionnaires and measuring instruments like digital scales and microtoise. The results indicate a relationship between snack consumption and physical activity with overweight in adolescents, with respectively p-value of (0,010) and (0,044).

Keywords: Adolescent, meal skipping, overweight, physical activity, snack

Children's Eating Habits in Agricultural and Coastal Areas of Sampang District, Indonesia

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Summary

Children in agricultural and coastal areas are more vulnerable to malnutrition. This study analyses children's eating habits in agricultural and coastal areas. This cross-sectional study involved 384 children under five and their parents in Sampang District, East Java, Indonesia. Milk and fruit consumption was low in both areas, especially in the agricultural area. Children's eating habits differed between coastal and agricultural areas due to disparities in food availability. Increasing consumption of milk and fruits (both areas), and vegetables (coastal area) that are preferred by children and widely available will benefit children's health in both areas.

Keywords: Children, dietary habit, food frequency, food habit, rural

Hypertension in Pregnant Women: Relationship with Nutrients Intake, Physical Activity and Pregnancy Characteristics

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Summary

Hypertension, i.e. the increased blood pressure is one of the causes of maternal death during pregnancy. Nutrients intake, physical activity, and pregnancy characteristics have a relationship with blood pressure. About 110 pregnant women in the 3rd trimester in Bogor City in 2018 was conducted by cross-sectional study. The Spearman analysis showed that eicosapentaenoic acid/EPA intake had a correlation with diastolic blood pressure. No correlation was found between physical activity and blood pressure. The characteristics of pregnancy that closely related to blood pressure were history of abortus, pre-pregnancy BMI, gravidity, mid upper arm circumference/MUAC, parity, and maternal age. This study highlights the importance of characteristics of pregnancy to control hypertension.

Keywords: Hypertension, nutrients intake, physical activity, pregnancy characteristics

Relationship of Percent Body Fat With Hydration Status in Adolescents

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Summary

Adolescents are more often dehydrated due to the large amount of physical activity that requires energy and body fluids, and relative lack of fluid consumption. Dehydration is influenced by several factors, one of which is percent body fat. Total body fluids ± 55-60% of body weight, this proportion is also related to the amount of body fat, gender, and age. The water content in muscle cells is higher than in fat cells. So that the total body fluid in obese people (obese) is lower than in people who are not obese.

Keywords: Adolescent, hydration, percent body fat

Associations between College Students Nutrition Knowledge, Eating Habits, and Physical Activity during Covid-19 Pandemic

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Summary

Obesity is one of the risk factors that aggravates when exposed to viruses, in this case coronavirus disease 2019 (Covid-19). The Covid-19 virus pandemic has affected various changes, both in the socioeconomics of the country to individual habits. This study aims to examine the association between nutritional knowledge, physical activity, and college student eating habits during Covid-19 pandemic. Data collected were nutritional knowledge, eating habits, and physical activity which was done by online survey using google form. The analysis showed that there was no significant association between nutritional knowledge and nutritional adequacy levels along with eating habits and physical activity.

Keywords: College student, Covid-19 pandemic, Eating habits, Nutrition knowledge, Physical activity.

Effect of Islamic Alternate-Day Fasting (Daud Fasting) on Body Weight, Body Fat, and Skeletal Muscle in Male and Female Obese Young Adults in Dramaga, Bogor, Indonesia

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Summary

This study aimed to evaluate the effect of Daud Fasting (Islamic alternate-day fasting for 13-15 hours) on body weight, body fat, and skeletal muscle percentage.Twenty-nine obese young adults (19-29 years old) in Dramaga, Bogor, Indonesia, were randomized to fasting and control groups. Fasting group were asked to fast from dawn to sunset for four weeks. Anthropometric measurements (body weight, body fat, and skeletal muscle percentage) were performed. Body weight, BMI, and trunk fat percentage levels decreased significantly in fasting group without reduction of skeletal muscle, within four weeks. In conclusion, Daud fasting can be an option solution to obesity.

Keywords: Body fat composition, body weight, daud fasting, obesity, young adults

High Prevalence of Metabolic Syndrome Among Middle-Aged People in Rural Area (Study in Cianjur, Indonesia)

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Summary

This cross-sectional study provides MetS prevalence on middle-aged rural Indonesian, which was performed on 224 subjects aged 45–59 years old in Cianjur, Indonesia from 2014–2015. Measurements include anthropometric, blood pressure and biochemical assessments. MetS prevalence as defined by the International Diabetes Federation and National Cholesterol Education Program Adult Treatment Panel III criteria was 30.8% (17.9 % in men and 42.0% in women) and 23.7% (9.8% in men and 37.5% in women), respectively. High blood pressure is the most prevalent MetS component (67.4%) in rural areas. Prevention and treatment of MetS, particularly among middle-aged women should be implemented.

Keywords: Hypertension, metabolic syndrome, middle-aged, rural area

Effects of Two-Year Covid-19 Pandemic on The Consumption of Beverages Among Indonesian Women

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Summary

The COVID-19 pandemic is suspected to change the consumption of beverages. This study aimed at analyzing the effects of the two-year COVID-19 pandemic on the consumption of beverages among Indonesian women. For this purpose, an online survey was designed and performed via social media in Java. As many as 1773 women participated in this study. The results showed that the two-year COVID-19 pandemic had an effect on increasing the consumption of bottled water, drinking water, isotonic drink, energy drink, milk, juice, coconut water, and herbal drink. While at the same time the consumption of tea, coffee, and soft drink decreased.

Keywords: Beverage consumption, COVID-19 pandemic, Indonesian women, online survey.

Effect of Audio Visual Educational Media on Adolescent Knowledge of Anaemia in SMP 7 Jambi City, Indonesia

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Summary

Anaemia is one of the nutritional problems that often occur in adolescent girl. Nutrition education as a method interventions proven to improve their knowledge to prevent anaemia. The study aimed to know the effect of audio-visual educational media on knowledge of anaemia in teenage girl at SMP 7 Jambi City in 2020. The research summarized that there is an effect of audio-visual educational media on Adolescent knowledge of anaemia in SMPN 7 Jambi City. So that sustainable nutrition education is needed to improve student knowledge and as one of the efforts to prevent anaemia

Keywords: Anaemia, education, media, adolescent girls, nutrition

Consumption of Iron-rich Food in Children Under Two Years in Urban and Rural area in Indonesia: an Analysis of Indonesian Demographic and Health Survey 2017

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Summary

Iron-rich foods consumption is an important determinant of anaemia status, and demographic characteristic may contribute to the fulfilment of iron intake. This study aimed to determine consumption level of iron-rich and iron-fortified foods in children under two years in urban and rural. An analysis was done on the Indonesian Demographic and Health Survey 2017. Children in urban areas consume more iron-rich foods and iron-fortified food than those in rural. Socio-demographic and economic status are significant factors that determine iron-rich/fortified food consumption with relatively weak correlation strength, and therefore we suggest that efforts in improving these factors should be encouraged.

Keywords: Children under two years, iron-rich food consumption, urban, rural

The Risk Factors of Hypertension among Female Batik Workers in Yogyakarta Indonesia

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Summary

Hypertension is more common in poor countries than it is in developed countries. The purpose of this study was to analyze determinant of hypertension among Female Batik Wokers (FBW). From July to November 2019, a cross-sectional study was conducted in Kulonprogo, Yogyakarta. Structured questionnaires were used to collect sociodemographic information, while anthropometric variables and blood pressure were evaluated. Logistic regression models were used to examine the hypertension risk factor. FBW who had a secondary education level were 0.236 times more likely to be hypertensive than who had no or primary level of education (p=0.005). FBW who had waist circumference (WC) > 80 cm were 3.799 times more likely to be hypertensive than participants who had WC ≤ 80 cm (p=0.004).

Keywords: Female Batik Workers, Hypertension, Risk Factors, Sociodemographic

Development of Malaysian Students' Healthy Meal Plan for Public University Students in Peninsular Malaysia

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Summary

A meal plan demonstrates how a nutritious diet can be achieved with limited resources. It improves diet quality and prevents obesity. However, meal planning has not been well-studied in Malaysia. Thus, this study aims to develop a Malaysian' Student Healthy Meal Plan (MySHMP) for public university students in Peninsular Malaysia. The development of this MySHMP involved three phases. Phase I assessed the prevalence of food insecurity. Followed by the development of MySHMP that was done in Phase II. In Phase III, MySHMP's serving size was compared against the Malaysian Dietary Guidelines (MDG) and evaluated based on the actual price survey.

Keywords: Healthy meal, malaysia, meal cost, meal planning, university students

Socio-economic Status, Food Security Status and Its Coping Strategies among 'The Lost Food Project' (TLFP) Recipients in Klang Valley during COVID-19 Pandemic

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Summary

There are many organizations in Malaysia, endeavoring in providing food assistance to the needy community and one of them is 'The Lost Food Project' (TLFP). This study was conducted to evaluate the food security status among TLFP recipients in Klang Valley during the COVID-19 pandemic. The questionnaire consists of five sections including socioeconomicbackground, food assistance, nutrition knowledge level, food security status and coping strategies. The results showed that the prevalence of food-insecure households was high among the respondents which forced them to adopt more coping strategies. Food assistanceprogram by TLFP have shown to be helpful and significant for the households.

Keywords: Food security status, coping strategies, low income households, food assistance

Development of local food-based dietary recommendations using linear programming approach for Malaysian undernourished children aged 24 to 48 months old

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Summary

Dietary inadequacy has been associated with childhood undernutrition, particularly among children from low-income households during the COVID-19 pandemic. Therefore, local healthy food-based dietary recommendations (FBR) that are affordable are crucial to improve their dietary intakes. This cross-sectional study aimed to develop affordable and realistic FBR to improve dietary adequacy of undernourished children aged 24 to 48 months from low-income households in Seremban district, Malaysia. Weekly food consumption of 85 undernourished children were obtained using a non-consecutive 3-day 24-hour dietary recall. FBR were developed by linear programming (LP) analysis using WHO Optifood software. LP can be applied to determine the optimum allocation of a limited supply of food materials, subject to certain constraints, in order to optimize a specific objective function. Comparing to the Recommended Nutrients Intakes (RNI) of Malaysia, vitamins B1 (93%), B6 (99%), B12 (87%), calcium (44%), and zinc (50%) were not achieved by the children. Folate requirements could not be achieved using local food sources (highest level achievable, 75.1% of recommendations) and adequacy levels of vitamins C, B6, B12, iron, and zinc were difficult to be achieved even when the diet was optimised. Full cream milk, chocolate malted milk, cornflakes, chicken egg, mustard green, water spinach, cabbage, orange, and papaya were locally available nutrient-dense foods that would fill these nutrient gaps. The selected FBR were: 1 serving/day of legumes, nuts and seeds; 2 servings/day of dark green leafy vegetables (of which mustard green and cabbage daily and 2 servings/week of water spinach); 1 serving/day of egg; and 3 servings/week of vitamin C-rich fruits (of which 4 servings/week of orange and 4 servings/week of papaya). A healthy, balanced and affordable FBR for the undernourished children from low-income households could help to improve their nutrient adequacy at a minimum cost.

Keywords: linear programming, local food-based dietary recommendations, Optifood, key problem nutrient, undernourished children

Evaluation of Nutritive Value of Commercially Packaged Snacks Available in Thai Supermarkets

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Summary

Nutrition labels play an important role in giving information about key nutrients of packaged snacks. This study assessed the nutrient contents from nutrition labels and categorized commercially packaged snacks by health star rating (HSR) system. Results show that nuts and seeds group has the highest total energy (kcal) and meat based group has the lowest total energy. Moreover, the median of all nutritive values are statistically significant across all groups. In HSR system, among all 7 groups of snacks, 21.1% of nuts and seeds products are having 5 stars but 78.7% of meat based snacks have only 0.5 stars.

Keywords: Commercial snacks, health star rating (HSR), non-communicable disease (NCD), nutrition labels, nutrient profile

Complementary Feeding Practices of Mothers in Three Geographical Areas in Virac, Catanduanes, Philippines

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Summary

This study determined the complementary feeding practices of mothers in three geographical areas in Virac, Catanduanes. Descriptive survey method was used. Result showed that complementary foods were given after the first six months of life and commercial cereal was the first complementary food given. These two practices were mostly observed in the lowland, followed by those in the coastal and the upland areas. This indicates that the timing of giving complementary foods is compliant with recommendations and commercial cereal is preferred most in the lowland probably due to its proximity to the market.

Keywords: Complementary feeding practices, complementary food, geographical areas, mothers, timing of giving complementary foods

Effectiveness of Info-Nutriteen® Education Program on Knowledge, Attitudes and Practices of Nutrition Label Use and Nutritional Status of Adolescents

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Summary

Adolescents are vulnerable to the obesity problem. Therefore, understanding the nutrition label on food items can help them make healthier food choices. The Info-Nutriteen® intervention program was conducted for 8-weeks through Instagram using a quasi-experimental design. The program aimed to determine its impact on knowledge, attitudes and practices (KAP) of the nutrition label and nutritional status among adolescents. The results indicate that the program significantly increased nutrition knowledge and decreased waist circumference measurement of adolescents in the intervention group. However, such programs must ensure positive practices in understanding nutrition labels to prevent obesity among adolescents.

Keywords: Adolescent, nutrition label, food choice, effectiveness

Development of Low-Fat Pamphlets Based on the Transtheoretical Model for Ischemic Stroke Patients

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Summary

Ischemic stroke is the leading cause of death and disability in many countries. This study aimed to develop and use the focus group interview and content validity test to evaluate the appropriateness of the content of five educational brochures. The five pamphlets are designed for Asian especially Chinese ischemic stroke patients, the content is based on the transtheoretical model (TTM) to meet the information needs of the stroke population and achieve health improvement. The result indicates that these pamphlets had good content validity to educate stroke patients about reducing fat consumption.

Keywords: Content validity, ischemic stroke, low-fat, transtheoretical model

Knowledge, Attitude and Practice of Early Childhood Feeding among Parents in Malaysia

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Summary

Numerous published studies suggest that the percentage of mothers who breastfeed and use complementary feeding is low. This cross-sectional study aims to assess the level of knowledge, attitude, and practice about early childhood feeding among 143 Malaysian mothers (i.e., involving those living in Kelantan, Terengganu, Kedah, Pulau Pinang, Selangor, Perak, Negeri Sembilan, and Johor Bharu) using the Infant and Young Child Feeding (IYCF) questionnaire conducted through an online survey. The result indicated that the majority of mothers in this study had good knowledge (76.2%), a positive attitude (93.7%), and good practices (88.1%) about early childhood feeding.

Keywords: Knowledge, attitude, practice, early childhood feeding, malaysia,

FOOD INNOVATION

Banana Peel and Catfish-Based Brownies as an Alternative Snack for Preventing Stunting

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Summary

Banana peel and catfish head flour can be used as additional ingredients to improve the nutritional value. This study developed three brownies formulas with the ratio of catfish head flour and banana peel. Based on nutrients analysis, formula 3 (banana peel: catfish flour = 25 :75 w/w) had the highest amount of calcium (391.29 mg/100g), iron (7.28 mg/100g) and protein (8,59 %). The results of hedonic test all of three formulas were acceptable and did not differ markedly from the average hedonic value which is F1: 4.7 (like), F2: 4.6 (like), F3: 4.9 (like).

Keywords: Stunting, banana peel, catfish flour, alternative snack, iron

High Fiber Snack Bar Made From Purple Sweet Potato (*Ipomea Batatas*) and Black Soy-Bean (*Glycine Soja Sieb*)

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Summary

A high-fiber snack could be an alternative solution to enhance the fiber intake of the community. This study aimed to formulate and evaluate the nutrient profile of a high-fiber snack-bar made from purple sweet potato and black-soybean locally from Indonesia. Four prototypes (tuber-extrusion:black-soybean; 80:20, 70:30, 60:40, and 50:50) had been developed and evaluated with regard to the sensory profile, fiber content, proximate composition and antioxidant profile. Results revealed that the selected formula with 70% of extruded tuber enabled to contribute up to 27% of daily need of fiber. In conclusion, the selected formula could be claimed as a high-fiber bar.

Keywords: Black-soybean, Extrusion, Fiber, Local crops, Purple sweet potato.

Bread Made from Local Ingredients (Red-Bean, Soybean, and Corn) Flour: An Acceptance and Potential Nutritive Supplementary Product for Pregnant Women

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Summary

Maternal mortality could be controlled by supplementary bread made from local food. This study aimed to analyze the effect of substitution of wheat flour with a mixture of red-bean, soybean, and corn flour on the organoleptic and nutrients content of bread. The local flour was made by red-bean, soybean, and corn flour mixed with 1:1:1 ratio. The 10% substitution of mixed flour resulted as the best supplementary product in terms of taste and colour. In term of nutrient content, it contained 153kcal of energy and 5g of protein. In conclusion, this bread had potential as supplementary feeding for pregnant woman.

Keywords: Corn, Red-Bean, Soybean, Supplementary Product, Pregnant Women

Fatty Acid Profiles of Virgin Coconut Oils Originated from Bangka

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Summary

High-temperature extraction is a commonly used method to extract virgin coconut oil. This study observed the fatty acid profiles of VCO extracted through heating. The samples are commercial VCO as control and VCO extracted from local yellow and green coconuts obtained from Bangka Island. GCMS was used to determine the fatty acid profiles. The results indicate that VCO extracted from yellow coconut has the best fatty acid profiles with the highest percentage of lauric acid compared to the commercial VCO and green coconut VCO.

Keywords: Fatty acid profiles, virgin coconut oil, lauric Acid.

Effect of Ultrasound Treatment on Quality of Pineapple (*Ananas comosus*)

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Summary

Pineapple contains a lot of sugars therefore it is not recommended for people with limited sugar consumption. The reduction in total sugar content (TSS) was carried out using ultrasound wave. The observed parameters were TSS, pH, vitamin C and total color difference (ΔE^*). Ultrasound was able to reduce TSS and acidity of pineapple without significantly affecting the color of pineapple. The largest decrease of TSS was approximately 29%. The best treatment was at ultrasound wave at frequency of 20 kHz for 30 minutes with TSS of 10.87%, pH at 3.63, vitamin C of 12.67 mg/100g and ΔE^* of 3.76.

Keywords: Acidity, colour, pineapple, soluble sugar, ultrasound

Potentials of Fiber, Antioxidant Activity and Prebiotic Property of Three Species of Seaweed from Waters of Indonesia: a Narrative Review

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Summary

Seaweed is an abundant commodity in Indonesia and has potential for health. The study purpose is to provide the nutritional potential of *Ulva lactuca*, *Sargassum polycystum* and *Eucheuma cottonii*, as a reference in the functional foods development. This research is a narrative review using 5 steps. The selection includes database and keyword filtering, article collection, inclusion criteria determination, and a review process until selected 8 publications. *Eucheuma cottonii* contains dietary fiber, PUFA, carrageenan, vitamin C, higher Na, and stronger antioxidant activity. In conclusion, it has more potential to be a more acceptable developed product that can improve nutrition community.

Keywords: Antioxidant, Eucheuma cottonii, Seaweed, Sargassum polycystum, Ulva lactuca

A Preliminary Study on Protein and Mineral (Ca, P, Fe, and Zn) Content of Chicken Feet Porridge as Food Ingredient for Pregnant Women

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Summary

The pregnancy period can determine the nutritional status of newborn babies. Providing additional food becomes one of the strategies to support nutritional adequacy for pregnant women. Chicken feet porridge was made by washing and cutting, boiling, and crushing the chicken feet' stewed bones. Analysis using Kjeltech and Inductively Coupled Plasma–Optical Emission Spectrometry (ICP OES) showed that chicken feet porridge containing 10.4% of protein, 611.2 mg of calcium, 0.85 mg of iron, 1.08 of zinc, and 284.5 mg of phosphor in 100 g sample. This product's calcium content is expected to support the fulfillment of calcium requirements for pregnant women.

Keywords: Chicken feet, minerals, nutritional status, pregnancy, protein

Edible Insects as An Alternative Protein: A Mini Meta-analysis

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Summary

Global population will increase food consumption. Edible insects might solve these difficulties as a potential alternative protein. This study aimed to evaluate and analyze edible insects as protein source using quantitative review/meta-analysis methodology. The steps of this research include selecting, screening, extracting, analyzing data quality, processing, and interpreting data. Twenty studies were selected from a thorough review of the 512 selected papers. Hedges'd cumulative effect size showed edible insects contain significantly higher protein (38.046), fat (65.581) and ash (11.403) than beef with p-value <0.001. This study highlighted the potential of edible insects to be a protein source.

Keywords: alternative protein, edible insects, future food, hedges'd, quantitative review

Supercritical Carbon-Dioxide Papaya Seed Extract (Carica Papaya L.) As Alternative Oil Raw Materials in Supporting Sustainability Development Goals (SDGs)

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Summary

The cooking oil crisis as one of the pillars of nine basic needs is a crucial phenomenon that can endanger national food security and hinder the achievement of the Sustainable Development Goals (SDGs). Extraction of papaya seeds into cooking oil as an alternative raw material to replace palm oil is able to reduce the rate of scarcity while reducing the risk of chronic and non-communicable diseases through free radical-scavenging antioxidant compounds such as flavonoids and benzyl isothiocyanate (BITC) as antihelmintic and antibacterial functional compounds. This study aims to determine the process of making alternative cooking oil by utilizing papaya fruit seeds and identifying the effectiveness of papaya seed waste as an alternative raw material for cooking oil. The oil is made by extracting papaya seeds which have been simplicialy dried, ground and sifted. The particle size of the powder was analyzed by PSA. Samples were extracted with a sample to solvent ratio of 15:1. Furthermore, the extraction is carried out by exposing the temperature and pressure beyond the critical limit of the substance with CO2. The extraction results were distilled and finalized with anhydrous sodium sulfate to optimize water absorption. The final filtrate formed was analyzed using GC-MS, phytochemical, antibacterial activity, determination of peroxide number, acid number, and free fatty acid content.

Keywords: Supercritical carbon-dioxide, papaya seeds, oil

Essential Fatty acid, Phospholipids, and Morphological Characteristics of Bone Marrow Microcapsules

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Summary

The nervous system grows and develops at fastest rate during the first thousand days of life. Bone marrow microcapsules consist of nutrients such as fatty acids, amino acids, and micronutrients that promote physical growth and brain development. This study aimed to assess the essential fatty acids, phospholipids, and morphological properties of encapsulated Balinese cow bone marrow. This study used spray drying technique and three encapsulants including milk powder, maltodextrin, and Arabic gum. Most phospholipids were found in bone marrow encapsulated with milk powder. In addition, all formulas had a round shape and smooth surface.

Keywords: Balinese cow, bone marrow microcapsules, essential fatty acids, phospholipids, spray drying

Total Flavonoids and Total Phenolic in Nipah (*Nypa fruticans* Wrumb) Fruit Extract as a Candidate for Hyperglycemic Control

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Summary

Nipah fruit is functional foods that containing polyphenols, tannins, saponins, and alkaloids. Those bioactive components can improve glucose transport and enzymes in glucose metabolism. This study aimed to analyze the total flavonoids and phenolics in the Nipah fruit extract. It was analyzed quantitatively using spectrophotometric methods. The results shown flavonoid contents in unripe and ripe was 56.85 mg QE/g and 42.8385 mg QE/g, respectively. The total phenolic contents in unripe and ripe nipa fruit extract were 29.27 mg GAE/g and 28.25 mg GAE/g. Therefore, unripe Nipah fruit extract contains higher total phenolic and flavonoids than ripe Nipah fruit extract.

Keywords: Total flavonoid content, total phenolic content, Nipah fruit extract, functional food

Administration of Milk-based Drinks (MDs) containing Lactic Acid Bacteria (LAB) improves Calcium Femur Level of the Rat's Offspring

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Summary

This study evaluates the effect of administration of two popular MDs in Indonesia containing *Lactobacillus casei Shirota strain* (M-LcS) and four strain bacteria (M-FS) (*Lactobacillus rhamnosus, Lactobacilus paracasei, Lactobacillus delbrueckii subsp, Bulcarigus, and Streptococcus thermophilus).* Twenty four Sprague Dawley rats were randomized into one negative control group (A1) and three undernourished group : positive control (A2), M-LcS (A3) and M-FS (A4). Calcium femur level of M-LcS and M-FS group were significantly higher than control group (A1). This study concluded that the MDs had the potential effect to improve calcium femur level of the rat's offspring in undernourished pregnant rats.

Keywords: Calcium, femur, stunting, rats, undernourished

Characteristics of Bread from Purple Sweet Potato Flour with The Addition of Hemicellulase Enzyme

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Summary

The use of hemicellulase enzymes can improve the quality of bread products made from PSPF (purple sweet potato flour). Evaluation of the effect of wheat flour substitution with PSPF (0, 25%, 50%, and 100%), and hemicellulase enzyme addition (0%, 0.025%, 0.05%) have been conducted on the texture, chemical, and sensory characteristics of breads. The results of this study showed that the substitution of 25% PSPF by 25% and the addition of 0.05% hemicellulase produced bread with acceptable texture and sensory characteristics and had anthocyanin and crude fiber content of 26,44% and 3,44% respectively.

Keywords: Purple sweet potato, hemicellulase, breads, texture characteristics

Sensory Acceptance, Antioxidant Activity, and Dietary Fiber Content of Tekwan Supplemented with Cassava Leaf Powder

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Summary

Cassava leaf powder (CLP) has the potential as a food supplement in Tekwan product. This study aims to determine the effect of addition of CLP processed by different methods (without soaking-without steam blanching, soaking-without steam blanching, soaking-steam blanching) on acceptability, dietary fiber content and antioxidant activity of Tekwan. This research is an experimental, a completely randomized design with 1 factor, Tekwan formulation, in order to 3 Tekwan samples; T1=Tekwan+CLP1; T2=Tekwan+CLP2; T3=Tekwan+CLP3. The results showed that Tekwan T2 had the highest acceptability score, while Tekwan T1 contained the highest total dietary fiber and antioxidant activity among the other Tekwan.

Keywords: Cassava leaf powder, tekwan, sensory acceptance, antioxidant activitiy, dietary fiber

Effect of Soymilk Substitution on Nutrient Profile, Oxidative Stability and Sensory Preference of Malay Chicken Curry

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Summary

Frequent consumption of food cooked with large amount of coconut milk might bring detrimental effects to health. This study aimed to determine effect of substitution of coconut milk with soymilk in Malay chicken curry. Five ratios of coconut milk:soymilk were used: 100:0, 75:25, 50:50, 25:75 and 0:100. Nutrient profile, oxidative stability and sensory preference were analysed. Increased substitution could lower total fat, saturated fat and calorie contents, prolong oxidative stability and caused insignificant differences in sensory preference. This study showed soymilk is useful to substitute coconut milk in local cuisines; beneficial for consumers aiming to lower fat and energy intakes.

Keywords: Coconut milk, curry, saturated fats, soymilk, total fat content

Antibacterial Activity of Dairy Kefir for Escherichia coli, Staphylococcus aureus, and Bacillus subtilis

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Summary

Dairy kefir is a homemade functional beverage from fermented milk using kefir grains. This study aims to determine the activity of goat's milk and cow's milk kefir in inhibiting the growth of *Escherichia coli*, *Staphylococcus aureus*, and *Bacillus subtillis*. The dairy kefir used was made from cow's and goat's milk which was varied at 25%, 50%, and 75% concentrations. This research uses the well diffusion method with 3 replications. The results were analyzed using two-way MANOVA and showed that all the treatments had a significant effect p-value < α (0.00<0.05). Based on discriminant analysis it is known that *B. subtilis* has the highest correlation with a correlation value of 0.554 for the type of kefir and 0.994 correlation value for the concentration. Cow's and goat's milk kefir were able to inhibit the growth of test bacteria.

Keywords: Cow's milk kefir, goat's milk kefir, functional beverage, microorganisms' consortium, antibacterial activity

Development of Inpari IR Nutrizinc Instant Rice: Physical Properties, Sensory Characteristics, and Nutrients Content

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Summary

The release of Inpari IR Nutrizinc biofortified rice variety is an effort to enhance zinc intake among the population in Indonesia. This variety can also be processed into instant product. Consequently, this study aimed to examine the effect of the processing of biofortified rice-based instant rice on its physical properties, sensory characteristics, and nutritional content in comparison to those of regular rice. The results revealed that Inpari IR Nutrizinc instant rice had significantly higher volume expansion, non-significantly different level of acceptance, and significantly higher zinc content than Ciherang one. It showed that this product could be a source of zinc.

Keywords: Inpari IR nutrizinc, instant rice, physical properties, sensory characteristics, zinc

Zinc and Iron Content of Biofortified Rice variety Inpari IR Nutri Zinc

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Summary

Inpari IR Nutri Zinc (NZ) is a zinc biofortified variety that developed to overcome stunting in Indonesia by diet. This study aimed to analyze the differences of zinc and iron content in NZ and Ciherang varieties by wet ashing method and Atomic Absorption Spectrophotometry with two replications. The results showed that zinc content of NZ rice and cooked rice were significantly higher than Ciherang. NZ rice also contains significantly higher iron than Ciherang, while in cooked rice it was not significantly different. For pregnant women, NZ cooked rice has lower contribution of zinc and iron daily intake than Ciherang.

Keywords: Biofortified, Ciherang, Inpari IR nutri zinc, iron, zinc

High Fibre Instant Noodles Made from *Beneng* Taro Flour (*Xanthosoma undipes*)

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Summary

Beneng taro is an Indonesian indigenous tuber that might be used as an alternative source of carbohydrates. This study aimed to formulate high-fibre instant noodles made from *Beneng* taro flour by using extrusion technology. The best formula was selected based on the sensory and physical evaluation. To increase elongation degree, the developed formula was combined with *Porang* flour (0, 2, and 4%) which was made from *Porang* tuber (*Amorphophallus muelleri*). The best prototype was a formula with 2% *Porang* flour added. The proximate and fibre analyses confirmed that the selected formula meets the requirements of high-fibre products.

Keywords: *Beneng* taro, dietary fibre, extrusion, Noodles, *Porang* flour

Development of Nutrition Shake Made from Substitution of Cow Milk with Mung Bean and Corn as a Beverage for Underweight Toddlers

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Summary

Nutrition shake is a nutrient dense beverage made from local ingredients as milk alternative for underweight toddlers. The beverage was made from 10% milk, 25% mung bean, 19% corn, 9% canistel (*Pouteria campechiana*), and 10% *ambon* banana (*Musa paradisiaca S forma sapientum*). The preference test was evaluated by 30 semi-trained panellists and Quantitative Descriptive Analysis (QDA) also assessed by 8 trained panellists. The proximate analysis revealed that product contained protein 6,4%(wb), fat 2,1%(wb), carbohydrates 31,5%(wb), energy 170 kkal, and dietary fiber 4,97 (g/100g). Product also has completed amino acid with 81% of *in vitro* protein digestibility. Product meet the toddlers' protein need about 25,6%.

Keywords: Local food, nutrient contents, nutrition shake, sensory characteristics, underweight toddlers

Changes in Anti-nutritional Compounds of Germinated Legumes: A Meta-Analysis

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Summary

This research quantitatively reviewed studies related to the effect of germination on legumes antinutrients using meta-analysis approach based on Hedges'd effect size. Out of 1308 studies, 64 studies were included. The result showed decrease of antinutrients -4,94 (CI = -6,77 – -3,11) for total Tannin, -1,32 (CI = -2,25 – -0,39) for Condesed Tannin, -15,76(CI = -18,03 – -13,49) for Phytate, -4,21 (CI =-5,70 – -2,75) for Saponin, -2,68 (CI = -4,11 – -1,24) for Polyphenol, -30,01 (CI = 41,61 – -18,41) for Hemagglutinin, -5,43 (CI = -7,20 – -3,30), -4,35 (CI = -6,16 – -2,53) for Trypsin Inhibitor, while phenolic content increase 21,27 (CI = 15,93 – 27,26).

Keywords: Antinutrients, effect size, germination, legumes, meta analysis,

Cookies from Velvet Beans Tempeh *(Mucuna pruriens)* as Potential Snack from Indigenous Legumes: Preference, Nutritional and Amino Acids Assessments

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Summary

Velvet beans tempeh *(Mucuna pruriens)* has potential as indigenous protein source. The aim of this research was to develop cookies from velvet beans tempeh and analyze its preference, nutritional content, and amino acids profile. Cookies was determined by randomized completely design consist of F1 (50%), F2 (75%) and F3 (100%). The selected cookies (F2) contained 13.74±0.83 (% db) of protein with amino acid score 88.73±10.05. Besides that, the mineral content was 5.50±0.67 (mg/100 g) for iron and 2.52±0.06 (mg/100 g) for zinc. The selected cookies (F2) can be claimed as potential food sources of protein, iron and zinc.

Keywords: Amino acids score, cookies, nutritional content, preference, velvet beans tempeh

Anti-ageing and Anti-diabetic Potential of Watermelon Rind Kombucha: An In Vitro Exploration

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Summary

Kombucha is a probiotic drink with a handful of health benefits that could be made from various plant-based ingredients. This study evaluated the antioxidant, total phenolic, anti-ageing, and anti-diabetic potential of kombucha from watermelon rind which contains citrulline and phenolic compounds. The results suggested that watermelon rind kombucha was rich in antioxidant activity and total phenolic content while also showing anti-ageing and anti-diabetic potential based on antiglycation and α-amylase inhibition activity.

Keywords: Watermelon rind, kombucha, anti-ageing, anti-diabetic, antioxidant

Development of Ready-to-Use Therapeutic Food (RUTF) Using Locally - Available Protein Sources from Milk, Legumes, or Fish

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Summary

Alternative Ready-to-use therapeutic food (RUTF) could be developed using locally available protein sources. This study aimed to formulate RUTF that comparable with standard specifications and suitable for Indonesia. Milk, legumes, or fish were added to provide the formulas with minimum protein content of 10% from total energy. Samples were analysed for sensory acceptance and nutritional compositions. Milk-based RUTF was the most preferred, and the Fish-based RUTF was the least-preferred formula. All RUTFs had slightly higher energy contents with lysine as a limiting amino acid. The addition of vitamin and mineral premix is recommended due to the tendency of lower vitamin and mineral contents below the specifications.

Keywords: Alternative RUTF, local protein source, severe acute malnutrition

Tiwai Coffee: Brightness and Sensory Characteristics and Their Effect on Human Immunity

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Summary

Tiwai onions (*Eleutherine americana* Merr.) can be used to treat several types of diseases, such as hypertension and lowering cholesterol. Therefore, this study aimed to determine the brightness, sensory, and response of the human immune system after consuming tiwai coffee. The method used was a pre and post-test design in which tiwai coffee was consumed twice daily. The results showed that tiwai coffee had a brightness level with an L* value of 46.96, with its sensory being favored by the panelists. The decrease in inflammation occurred as evidenced by reduced lymphocytes, monocytes and erythrocyte sedimentation rate.

Keywords: Brightness level, human immune, sensory characteristics, tiwai coffee

Effect of Pumpkin Puree (*Cucurbita moschata*) Substitution and Fermentation Time in the Production of Maros Bread (*Roti Maros*)

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Summary

Substituting flour with pumpkin puree in Maros Bread will increase its nutritional content. However, the amount of substitution and fermentation time may affect the bread's properties. This study examines the effect of fermentation time (45 and 60 minutes) and pumpkin puree substitution (0, 20, 35 and 50%) on the sensory and physicochemical properties of Maros Bread. The results showed that 80% wheat flour: 20% pumpkin puree and fermentation for 60 minutes are the best results, with higher moisture, ash, fibre and beta carotene, while it has lower fat, protein, carbohydrate and bread volume rise than control.

Keywords: Fermentation time, Maros bread, physicochemical properties, pumpkin puree, substitution

Cocoyam (*Xanthosoma sagittifolium*) Noodles for Dyslipidemia: Physicochemical and Sensory Characteristics

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Summary

Cocoyam is a local food high in fiber which has the potential ingredient to control blood lipid levels. The prevalence of dyslipidemia in Indonesia in 2018 was 28.8%. The purpose of this study was to examine the differences in the physicochemical characteristics and sensory properties of dried noodles. This Complete Randomized Design (CRD) research used 4 treatments (ratio wheat flour:cocoyam flour) and 3 replications. The higher proportion of cocoyam flour the better physicochemical and the worse sensory characteristics of noodle. The best physicochemical noodle was found at F2 (ratio wheat flour 70%: cocoyam flour 30%), but it was necessary to improve its sensory properties.

Keywords: Cocoyam, dyslipidemia, noodles, physicochemical, sensory,

Proximate Analysis and Antioxidant Activity Assay of Four Selected Indonesian Fruits: *Clausena excavata*, *Kadsura scandens*, *Pyrenaria serrata,* and *Phaleria macrocarpa*

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Summary

Indonesia has a variety of fruits but some of them are underutilized, such as *Clausena excavata*, *Kadsura scandens*, *Pyrenaria serrata,* and *Phaleria macrocarpa*. We measured their nutritive values through proximate analysis and antioxidant activities through 2,2-diphenyl-1-picrylhydrazyl radical scavenging activity. According to our findings, *C. excavata*, *K. scandens*, and *P. serrata* were edible but *P. macrocarpa* was poisonous. *P. macrocarpa* had the highest antioxidant (86.63%) and the most abundant total protein (7.76%). The highest content of carbohydrates and fat were harbored at *P. serrata* (85.94%) and *C. excavata* (6.79%), respectively. All fruits have good nutritive values and potential as antioxidant sources.

Keywords: Biodiversity, Edible fruit, Nutritive value, Radical scavenging activity, Underutilized fruit

In vitro Iron and Zinc Bioaccessibility of RUTFs from Locally-available protein sources

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Summary

Alternative Ready-to-use therapeutic food (RUTF) formulas were developed in Indonesia using locally-available protein sources resulted in Milk-based, Legumes-based, Fish-based, and Soy and Fish-based RUTFs. Due to the standard and the incorporation of plant-based ingredients, iron and zinc contents were assessed in this study along with their *in vitro* bioaccessibility. Most of the RUTFs comparable iron contents, but slightly lower zinc contents with the standard. More than 50% of ready-to-absorb minerals were provided by all RUTFs. Locally-available ingredients have the potentials to be used in the formulation of RUTFs with sufficient mineral content while highlighting the need to increase the mineral bioaccessibility of the product through ingredient modification or fortification.

Keywords: Alternative RUTF, locally protein sources, *in vitro* bioaccessibility, iron, zinc

Potentials of Modified *Beneng* Taro (*Xanthosoma undipes k.koch*) Flour as an Alternative Functional Food Ingredient

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Summary

Beneng taro is an Indonesian tuber with a higher protein and fiber has the potential to be turned into modified flour. This study's objective was to analyze modified *beneng* taro flour's physical characteristics and yield processing. Tuber 1.5 years old was used, and it went through the soaking and fermentation stage to produce modified flour. The fermentation process helped to produce more refined and whiter flour, but the yield was no significant difference between modified *beneng* taro flour fermentation with and without a starter. So, *beneng* taro can be a potential material for alternative functional food ingredients.

Keywords: Beneng taro, fermentation, local tuber, modified flour, functional food ingredients

Antioxidant Activity and Mineral Content of Pohpohan (*Pilea trinervia*) Nori with Yam (*Dioscorea alata*) Starch and Carrageenan

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Summary

Pohpohan leaf has the potential to be used as raw material for nori. However, it has not been fully characterized, so adding yam starch and carrageenan improves the physicochemical and functional characteristics, including antioxidant activity and mineral content. The effect of pohpohan nori with yam starch and carrageenan for antioxidant activity was measured by DPPH, and mineral content was analyzed using SEM-EDX. The results showed that the pohpohan nori has an antioxidant activity between 101,66-146,19 ppm with moderate intensity, and the minerals consist of Na, Mg, S, Cl, K, Ca, and Cu as an active substances for health.

Keywords: Antioxidant, Carrageenan, Minerals, Pohpohan nori, Yam starch

Proximate Composition and Calcium Content of Adlai (*Coix lacryma-jobi* L.)- Pili (*Canarium ovatum* L.) Drink

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Summary

The development of indigenous plant-based drink is one of the fastest emerging trends in functional food product development. The study aims to develop a drink from Adlai (*Coix lacryma-jobi* L.) and Pili (*Canarium ovatum* L.). The adlai grain and pili nut were processed into a blend. Their proximate composition as well as calcium content were analyzed following the AOAC (2000) and the dry ash extraction method, and inductively coupled plasma optical emission spectrometry, respectively. The adlai-pili blend showed lower proximate composition and calcium content than commercial plant-based drinks. Its potential to be a substitute sustainable drink warrants further investigation.

Keywords: Plant-based drink alternatives, adlai, pili, processing

Nutrient Content, Carbohydrate Profile and *In Vitro* Glycemic Index of Giant Swamp Taro *[Cyrtosperma merkusii (Hassk.) Schott]*

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Summary

Giant swamp taro is an underutilized root crop in the Philippines. The nutrient content, carbohydrate profile and *in vitro* digestibility of starch of cultivated and wild varieties of giant swamp taro were determined in this study. Boiled giant swamp taro of cultivated and wild varieties has energy contents of 377.29 and 385.67 kcal, respectively. The cultivated taro flour showed a significantly higher amounts of amylose, dietary fiber and resistant starch compared from the wild variety. The glycemic index of the flour from the two varieties were classified as intermediate.

Keywords : Carbohydrate profile, giant swamp taro, glycemic index, underutilized root crop

Stingless Bee Honey as Super Food: An industry gimmick or real science?

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Summary

This study analysed the chemical constituents and biological activities of selected Malaysian stingless bee honey (SBH). The chemical composition analysis depicted various classes of chemical compounds, including hydrocarbons, terpenoids, furans, phenol, fatty acids and their derivatives. Active inhibition against *Escherichia coli* and *Staphylococcus aureus* was were observed. Pre-treatment with SBH protected WIL2-NS cells from H_2O_2-induced cell death and DNA damage ($p < 0.001$). Our current findings suggest that SBH might be useful in preventing and treating many diseases caused by oxidative stress and inflammation, proving that SBH is a superfood and not a hype by the industry.

Keywords: stingless bee honey, Malaysia, chemical composition, biological effect

Effect of fermentation on antioxidant contents, antioxidant activity, and mineral contents of *Cleome gynandra* leaves

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Summary

C. gynandra provides medicinal benefits due to nutritional properties. This study was aimed to determine the effect of fermentation on antioxidant properties and mineral contents of *C. gynandra.* The findings showed fresh *C. gynandra* had the highest total phenolic content (60.44 ± 3.14 mg GAE/g extract), followed by commercial fermented (49.48 ± 1.88 mg GAE/g) and self-fermented (7.89 ± 0.83 mg GAE/g). Fresh *C. gynandra* also showed the highest scavenging activity (66.01 ± 1.14%) compared to both fermented samples. The fresh sample had the highest minerals content except sodium. Fermentation might reduce the antioxidants and minerals in *C. gynandra.*

Keywords: *Cleome gynandra*, antioxidant, nutritional value, fermentation, mineral contents

Effect of Enzymatic Hydrolysis Time on Antioxidant Activity of Protein Hydrolysates from Sea Cucumber (*Holothuria scabra*)

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Summary

In the present study, enzymatic hydrolysis was conducted to produce protein hydrolysate from sea cucumber (*Holothuria scabra*). Protein hydrolysates were successfully produced from sea cucumber body wall using alcalase at different hydrolysis time (30 to 300 min). The molecular weight distribution of sea cucumber protein hydrolysates (SCPHs) ranges from 1 to 14.2 kDa, as determined by the tricine SDS-PAGE profile. The highest value of radical-scavenging activity of 62.15% was obtained after 30 minutes of hydrolysis. The findings would provide useful information concerning sea cucumber protein hydrolysates for wide range of applications, including food and pharmaceutical products.

Keywords: Sea cucumber, sea cucumber protein hydrolysate, enzymatic hydrolysis, alcalase, antioxidant activity

SPORT NUTRITION

Cold-sterilized Coconut Water Improves the Rehydration and Recovery of Female Adolescent Futsal Athletes in Bogor, Indonesia

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Summary

Cold sterilization using ultrafiltration and ultraviolet extends coconut water's shelf life while preserving nutritional and organoleptic properties. This research aims to discover the effects of cold-sterilized coconut water drinks on the rehydration of female adolescent futsal athletes (n= 21, 14.7±2.1 years old). The experiment uses a cross-over design with four rehydration fluids, i.e., cold-sterilized coconut water, commercial isotonic drink, commercial coconut water, and bottled water (1-week washout period). The results show that cold-sterilized coconut water induces the best percent rehydration and rehydration index (p=0.024 and p=0.010, respectively) and better sensation. Cold-sterilized coconut water is recommendable as a rehydration fluid.

Keywords: Coconut water; female adolescent futsal athlete; isotonic drink; recovery; rehydration

Nutrient Intake and Body Image Perception in Bodybuilding Athletes: A Narrative Review

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Summary

Bodybuilders optimize body conditions to achieve low body fat. The aim of this study was to review the scientific literature on nutritional intake, perception of body image, and dietary supplements for bodybuilders during bulking and cutting phases. There is a decrease in nutrient consumption and the use of a hypercalorie diet as well as differences in supplements in the bulking and cutting phases. Bodybuilding athletes target to gain muscle mass and reduce body fat, and this may lead to muscle dysmorphia and eating disorders.

Keywords: Nutrient intake, body dissatisfaction, bodybuilders, athlete

The Correlation of Adiposity, Energy and Macronutrients Intake with Cardiorespiratory Fitness in Obese Male Adolescents

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Summary

Adolescence is a critical period for obesity. The purpose of this study was to analyze the relationship between body mass index (BMI), percent body fat (PBF), waist-to-hip ratio (WHR), energy and macronutrients intake and cardiorespiratory fitness (VO_2max) in obese male adolescents. This study used a cross sectional design. The subjects were 30 obese male adolescents. The results showed that there was a significant correlation between BMI, PBF, WHR with VO_2max ($p<0.05$). Obese male adolescents must pay attention from an early age to reduce BMI, PBF and WHR by doing physical activity and maintaining a balanced diet to improve cardiorespiratory fitness.

Keywords : Adolescent, BMI, Macronutrients Intake, VO_2max, Waist-to-Hip Ratio.

Body Composition and Body Satisfaction of the Bodybuilding and Physique Sports from Bangkok Sports

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Summary

Nowadays, there are few studies about bodybuilding and physique sports in Thailand. Then, we were inspired to explore athletes' exposures associated with eating behaviors and body satisfaction. This observational study recruited twenty-three male bodybuilders and evaluated anthropometry, muscle mass, bone mass, resting metabolic rate (RMR), and eating attitudes using standard methods. The study shows that bodybuilding's beginning age and period of training and dieting affected eating problem behaviors. The high-body image dissatisfaction group had a high-fat percentage and a lower RMR. The study may explain mind and body status to improve awareness of health issues in Thai bodybuilders.

Keywords : Body build, body image dissatisfaction, calorimetry, dxa scan, eating behavior