



Supplementary

Sustainability Report 2021

SDG 2:

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

2 ZERO
HUNGER





IPB University
Bogor Indonesia



SUSTAINABLE
DEVELOPMENT
GOALS

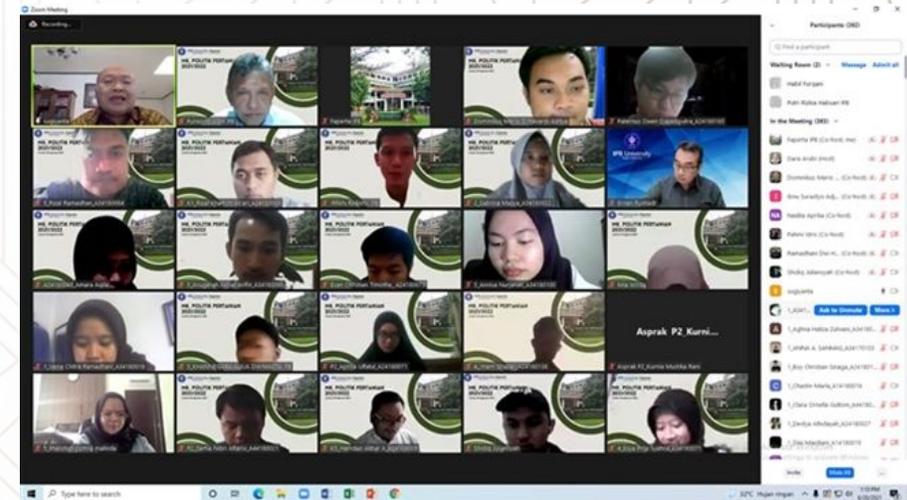


Learning Program

1

Agricultural Development: Starting Line for Agricultural Politics Course

The inaugural lecture for the Agricultural Politics course (FPA 401) for the 2021/2022 period has been held on Friday, August 20, 2021. Agricultural Politics is a mandatory course that must be taken by students of the Faculty of Agriculture, IPB University in semester 7. A total of 406 students (5 parallels) class), 15 teaching lecturer teams, and 12 assistant teams were present virtually in this meeting. The meeting lasted for approximately 2 hours, starting from 13.00 – 15.00 WIB. This inaugural lecture outlines the delivery of the syllabus and course rules as well as the first material on Agricultural Politics, namely Agricultural Development. The event was hosted by Irfan Rabani (Agronomy 54) who is one of the assistant teams this year. The event was opened with remarks from Dr. Ir. Sugiyanta, M.Si as the Dean of the Faculty of Agriculture, IPB University. After that, the next speech came from Mr. Dr. Ir. Ernan Rustiadi, M.Agr as Coordinator of Agricultural Politics Course.



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2

Webinar - Future of Food Needs Reliable Plant Breeders

Department of Agronomy and Horticulture, Faculty of Agriculture, IPB University held a webinar with the theme "Rice Plant Breeding to Support Food Security," 12/6. This webinar is held as a forum to convey knowledge, ideas, and inspiration from researchers who have struggled to make genetic improvements to rice plants so that they are highly competitive and adaptive to the current and future environment. "Food is a human right, the most basic human right. However, the challenge is also not easy so it will be more difficult in the future because the number of people is increasing," said Prof. Edi Santosa. He said that's the challenge that we have to solve with more speed, more precision, and more productivity. He also explained that farmers in general, plant breeders, agronomists and horticulturists are people who work in silence but must remain present.



A promotional poster for a webinar. The header includes the IPB University logo and the text "WEBINAR PS PEMULIAAN DAN BIOTEKNOLOGI TANAMAN (PBT) SEKOLAH PASCASARJANA IPB DEPARTEMEN AGRONOMI DAN HORTIKULTURA FAPERTA IPB". The date and time are "SABTU, 6 MARET 2021 | 08:30 - 12:00 WIB". The poster lists several speakers with their photos and titles: Prof. Anas Miftah Fauzi (Dean of Sekolah Pascasarjana IPB), Dr. Sugiyanta (Dean of Fakultas Pertanian IPB), Prof. Edi Santosa (Head of Department of Agronomy and Horticulture, Faperta IPB), Prof. Muhamad Syukur (Head of PERPI), Prof. Sudarsono (Head of Division of Plant Biotechnology, Department of AGH), Dr. Trikoesoemaningtyas (Moderator), Dr. Yudiwanti Wahyu E.K. (Head of Plant Biotechnology Program), Dr. Muhammad Fuad Anshori (Alumni of PMSU PS PBT Batch 2, 2015), Prof. Bambang S. Purwoke (Moderator), Dr. Dewi Sukma (Secretary of PS PBT), and Dr. Sintho W. Ardle (Lecturer of PS PBT). A "REGISTER NOW!" button is at the bottom right, with a Zoom link: "ipb.link/webinarpsbt1".

<https://ipb.ac.id/news/index/2021/06/prof-edi-santosa-the-future-of-food-needs-reliable-plant-breeders/895996259014b4d2aaf3cc0b9136b671>



sustainability.ipb.ac.id



[ipbofficial](https://www.instagram.com/ipbofficial)



3

Utilization of Genetic Resources for Improved Food Security in Indonesia

The Refresher Course entitled "Capacity building in management and utilization of genetic resources for improved food security in Indonesia" was opened on Monday, 6 September 2021 and ended on 1 October 2021. It was a collaboration between Wageningen University and Research (WUR)-Plant Breeding and IPB University-Department of Agronomy and Horticulture, funded by Orange Knowledge Programme (OKP) Nuffic, the Netherlands.

Welcoming speeches were delivered by Prof. Dr. Edi Santosa, Chair-Department of Agronomy and Horticulture, Prof. Dr. Satriyas Ilyas, IPB coordinator of the Refresher Course, and Dr. Daniel Danial from WUR-Plant Breeding. A representative from Nuffic Neso Indonesia (NNI), Dito Alif Pratama, shared about the NNI activities.



4

Cultivation of Tebon Corn (Young Harvest) as Cattle Forage

This Webinar activity raised the theme of Propaktani "Cultivation of Tebon Corn (Young Harvest) as Cattle Forage" which was held by the Indonesian Ministry of Agriculture on November 29, 2021. The speaker in this activity was Prof. Nahrowi who is Professor of Nutrition Science and Feed Technology, Faculty of Animal Husbandry IPB University. In his presentation, Prof. Nahrowi revealed that the problem of cattle feed in the future is in post-harvest technology. He said there must be a forage management strategy for ruminant feed security. Moreover, the need for animal feed is increasing day by day with the increase in population. However, due to access and price issues, the use of feed ingredients in the industry has also decreased due to lack of availability.



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5

Summer Course on Animal Production: Global Interconnectivity for Animal Production

The Department of Animal Production Science and Technology (IPTP), Faculty of Animal Science, IPB University successfully held the 2021 Summer Course. The summer course activity which took place from 12 July to 23 July 2021 was the 5th summer course that was successfully held. This year the theme is “New Normal Challenges and Opportunities: Global Interconnectivity for Animal Production”. The opening of the summer course activity was attended by the Dean of the Faculty of Animal Science at IPB University, Dr. Idat Galih Permana, Director of International Programs at IPB University, Prof. Iskandar Zulkarnaen Siregar, deputy deans, department heads, foreign guest lecturers, lecturers from the IPTP Department and summer course participants.



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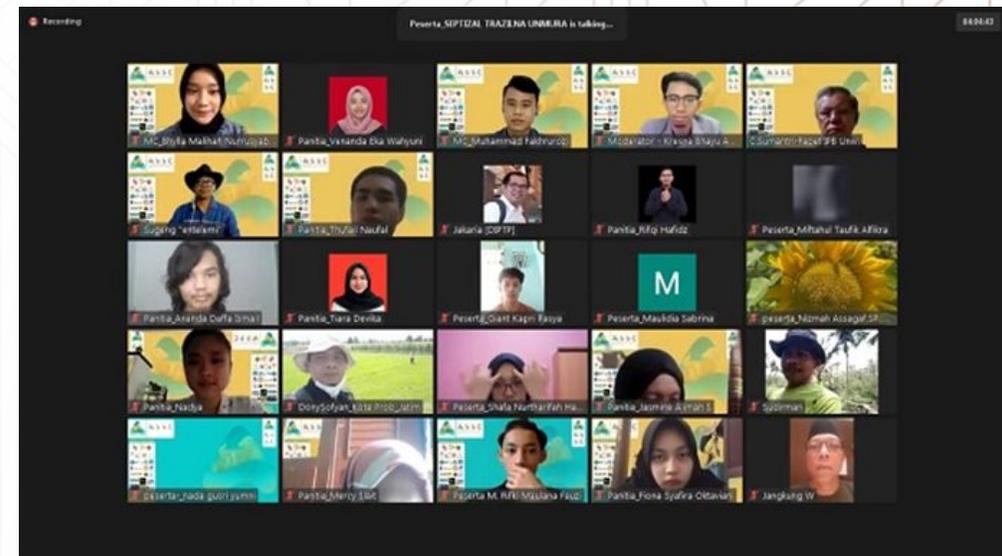


6

Webinar: Livestock Breeding Business Industry Development Strategy to Realize National Food Security

IPB University Animal Science and Technology Student Association (Himaproter) held the 2021 Animal Science Show Competition. ASSC 2021 has several series of events, such as student competitions and webinars related to animal husbandry. ASSC 2021 has the theme The Pride of Sundanese.

ASSC 2021 opened with a national webinar entitled Livestock Breeding Business Industry Development Strategy to Realize National Food Security on October 2, 2021. This event aims to educate livestock students and the general public, especially breeders, regarding knowledge related to the breeding business.



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7

Summer Course : Sustainable Agrifood Management in Indonesia 2021 (SAMI 2021)

SAMI Summer Course 2021 is the 5th Summer Course which has been held since 2017 by the Management Department of FEM IPB. SAMI2021 lasts for nine days from 14 September to 24 September 2021 which includes 20 series of webinars, 1 project assignment in the form of essays, presentation sessions, discussion sessions / and 9 question and answer sessions for quizzes (Kahoot). The SAMI 2021 curriculum is designed to be competency-based. Teaching materials, the form of learning is aimed at achieving the predetermined Learning Outcomes. Learning at SAMI 2021 is equivalent to 3 credits, with the course code IPB301 Summer Course. SAMI 2021 was attended by as many as 53 foreign students from 7 countries, namely Thailand, Malaysia, Philippines, India, China, Nigeria, Nepal and 38 Indonesian students.



8

Nutrition Science Course

FEMA, as a faculty in charge of the program of Department of Community Nutrition and Department of Family and Consumer Science, is committed to attaining food security and improved community nutrition. To fulfill the nutritional needs of the family, students are taught various types of knowledge such like nutrition fulfillment, family management, nutrition education, and human interaction with their socio-economic environment.

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9

International Conference on Agricultural Engineering for Sustainable Agriculture Production (AESAP) 2021.

The Role of Agricultural and Biosystem Engineering to Provide and Manage Food, Land, Water, and Bioenergy to Achieve Sustainable Development Goals (SDGs) Toward Industry 4.0

Description of the 4th International Conference on Agricultural Engineering for Sustainable Agricultural Production. The conference will cover topics of agricultural biosystems and process engineering, mechanical systems engineering, renewable energy engineering, agricultural information technology and electronics, and sustainable agriculture.

Time and Place of Implementation Monday, 11 October – Tuesday, 12 October 2021, Online via the Zoom Meeting application

Benefits This activity discusses and exchanges relevant information related to the application of agricultural techniques in overcoming extraordinary challenges related to sustainable development in land use and the environment, food chains, agriculture and convenience, energy, and bioproduction processes.

Outcomes The results of the 4th AESAP 2021 are papers that will be published in international proceedings indexed by SCOPUS: IOP Conference Series: Earth and Environmental Science

SGD Achievements Achieving conditions of sustainable agricultural production.



10

General Lecture : “Satellite Image Processing for Smart Agriculture and Forestry”

Satellite imagery is one of the images that can provide information in various fields. In agriculture, this satellite imagery helps a lot to provide a visual representation of the condition of agricultural land on Earth. To that end, the Department of Computer Science held a webinar with the theme "Satellite Image Processing for Smart Agriculture and Forestry". This event presents resource persons who are competent in their fields. Prof. Kohei Arai (SAGA University), Prof. Lilik B Prasetyo and Prof. Imas S Sitanggang, both from IPB University. This event was attended by the majority of IPB University postgraduate students.



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Prevention of Soil Transmitted Helminth (Sth)

The Lecturer Team Serving IPB University provides technical guidance regarding the Prevention of Soil Transmitted Helminth (STH) Worm Infections in Organic Fertilizer Applications. This technical guidance was given to coffee farmers in Cibulao Coffee Plantation, Telaga Saat, North Tugu Village, Cisarua District, Bogor Regency, (13/10). This counseling and technical guidance is an activity of Lecturer Serving which is a community service program from the Institute for Research and Community Service (LPPM) IPB University. This year's counseling and technical guidance explained the benefits of organic animal fertilizer from the aspect of plant cultivation and ecological sustainability in coffee plantations. "Animal organic fertilizer derived from animal waste is very good for coffee plants. However, the application of organic animal fertilizers by farmers often does not heed the Occupational Safety and Health (K3) standards for the safety of coffee farmers," said Drh Tetty Barunawati Siagian, MSi, Lecturer of IPB University. The impact, he continued, coffee farmers can be infected with worms that are transmitted through the soil (Soil Transmitted Heminth / STH). STH is a problem that often occurs in the world, especially in developing countries.



Introducing Chili Cultivation in Cibereum District, Sukabumi

Lecturers in the Vocational School of IPB University also introduced chili cultivation in the yard of the house for the people of Sindangpalay Village, Cibereum District, Sukabumi City. "We disseminate ornamental chili peppers to invite the community around the IPB Sukabumi campus to help improve family food security," said Law, MSi, IPB University lecturer from the Seed Industrial Technology Study Program, Vocational School. In addition, he said, this activity can also help realize precision village development which includes the goals of the 2nd Sustainable Development Goals (SDGs) pillar: Zero Hunger or no hunger and the increasing acceptance from the community has supported the 1st SDGs goal, namely No Poverty. or without poverty. Meanwhile, Uding Sastrawan, MSi explained, chili plants were chosen because they are suitable for urban farming which has a fairly high economic value with large and wide market opportunities. "Chili plants can grow in the lowlands to the highlands, chili cultivation is not limited to rice fields or fields, but to meet household needs, chili can be planted in the yard of the house in polybags, pots or other media," said Uding Sastrawan, MSi, IPB University lecturer from the Agribusiness Management Study Program, Vocational School.



13 Digitalization of Coffee Farmers

Lecturer Serving IPB University successfully held a training activity on Digitalization of Coffee Crops Agrometeorology for Participatory Farmers for millennial coffee farmers at Gunung Puntang coffee plantation, Banjaran District, Bandung Regency, (11-12/10). This training event was initiated by a joint team of lecturers from the Vocational School and the Faculty of Mathematics and Natural Sciences IPB University, namely Dr. Lili Dahliani and Dr. Bregas H. This event was held in the form of technical guidance on digital tools to measure weather conditions, which 26 local coffee farmers practiced, dominated by the millennial generation. Dr. Lili Dahliani as the team leader, brought material on agrometeorological data management to achieve coffee productivity. Her material conveyed several directions related to managing agrometeorological data that could be implemented on coffee plants. "This digital agrometeorology tool for coffee plants functions to measure weather conditions in real-time, analyze measured weather, as well as a decision support system or coffee harvest system," said Dr. Lili Dahliani



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14

SUMMER COURSE: Green Technology for Sustainable Agriculture

Online lecture with interactive presentations and discussions on the main topic of sustainable agricultural production technology in tropical agricultural production systems focused on 3 (three) leading Indonesian tropical commodities, namely oil palm, coffee and cocoa. The presentation of the material was delivered by lecturers or coordinators of overseas cooperation of various universities in Japan, ASEAN and Europe, the Research Institute for Industrial and Refreshing Plants and Lecturers of the TMB Department of IPB University. This activity provides an exchange of information, understanding and description of sustainable agricultural production technology for Indonesia's leading tropical commodities (palm oil, coffee and cocoa) between educational institutions from various countries in one learning forum. Dissemination of information on agricultural production technology for Indonesia's leading tropical commodities (palm oil, coffee and cocoa) to individuals outside Indonesia. Monday, August 16 – Thursday, August 26 2021, Online via Zoom Meeting and Hybrid



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Seed Dissemination And Technical Guidance Of *Callina Papaya* Cultivation

Papaya (*Callina papaya* L.) is one of the popular tropical fruit plants in Indonesia. National consumption of papaya ranks second after bananas. The contribution of this variety is expected to increase papaya economic value so that the competitiveness of quality papaya fruit will increase and farmers' incomes will also increase and will accelerate the pace of agricultural development, especially in the fruit sector. One of the papaya varieties that is quite popular with the public is the *Callina* variety. *Callina Papaya* variety is a papaya variety that can grow well in low to medium lands with an altitude of 100-500 meters above sea level. This papaya was developed by the Center for Tropical Fruits Studies IPB with the breeder Prof. Dr. Sriani Sujiprihati and Team. This variety was released by the Minister of Agriculture of the Republic of Indonesia on May 26, 2010. *Callina papaya* weighs about 1 kilogram per fruit, is cylindrical in shape, large in size with a length of about 23- 24 cm and a fruit diameter of about 9 cm. Other characteristics of *Callina papaya* fruit are orange flesh with a sweet taste and moss green skin. The productivity of this variety is 69 – 79 tons per hectare per 4 months. In this event, in addition to the explanation of *Callina papaya* cultivation, from seeding, care, to harvesting, as well as interactive discussions.





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Student Activities

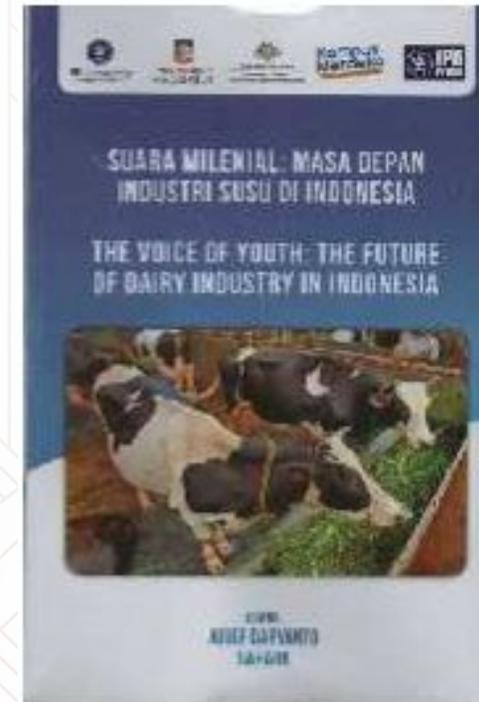
Agroecological Implementation for Sustainable Agriculture

The Plant Protection Student Association (HIMASITA) IPB held a Plant Protection Jamboree Webinar with the theme "Food System: Agroecological Implementation for Sustainable Agriculture". This activity is a work program of the HIMASITA Professional Division and is held once a year. The JPTI webinar was held on Saturday, November 6, 2021 which was attended by 101 participants consisting of IPB University students, Jember State Polytechnic, Sriwijaya University, Brawijaya University, Gadjah Mada University, Lampung University, Yogyakarta Institute of the Arts, Hasanuddin University, Airlangga University, Syiah Kuala University, Ambassadors of Farmers, Farmers, and the general public. The speakers who attended the JPTI Webinar activity "Food System: Agroecological Implementation for Sustainable Agriculture" were David Ardhan who is a CTSS IPB University food system analyst, Dr. Ir Suryo Wiyono who is a lecturer at the Plant Protection Department of IPB University and Susanto who is the Ambassador of Mainstay Farmers of the Indonesian Ministry of Agriculture Korwil East Java.



Scientific Writing Competition: The Future of The Milk Industry in Indonesia

The Department of Economics of IPB is supported by Adelaide University through a cooperation scheme funded by the Australian Center for International Agricultural Research (ACIAR). The cooperation scheme is contained in a research partnership program between Australia and Indonesia entitled "Improving milk supply, competitiveness and livelihoods of smallholder dairy chains in Indonesia (IndoDairy)". The program certainly requires cooperation from various parties, one of which involves the role of the younger generation (youth). From the results of the article writing competition, three winners were selected, namely Muhammad Reza Pratama (IPB University) as the first winner, Safitri (Brawijaya University) as the second winner, and Siti Patimah Zahro (IPB University) as the third winner. The holding of this scientific article writing competition was enthusiastically welcomed by the younger generation with the collection of 103 articles from various parts of Indonesia. Then from the 103 articles collected, the 35 best articles were selected by the IPB team to be published into a book containing the views of the younger generation regarding the development of the dairy sector in Indonesia.



Holistic Program for Rural Development and Empowerment

REESA is one of ten student organizations of IPB University that received funding from the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) in the Holistic Program for Village Development and Empowerment (PHP2D). As part of the program, in mid-September 2021, IPB University's REESA PHP2D Team held a workshop "Circular Economy: Food Security and Family Economy Through Environmentally Friendly Organic Farming in Cibanteng Village", in Kampung Kebon Kopi, Cibanteng Village, Bogor. The implementation of this program involved 12 students of the ESL Department, in collaboration with the REESA student organization under the guidance of Dr Meti Ekayani. The implementation of activities in the village adheres to a partner system, where students become a bridge for IPB University and residents of Cibanteng Village, so that in implementing the program, all parties must complement each other so that the program can run well and sustainably.



IPB Student won International E-conference on Sustainable Agriculture and Farming System

Fredha Muftika Setyawan, Haifa Az Zahra, Mu Anbiya Al Hakim, Wikan Cahya P managed to get 1st place in the ICoSAFS event. Fredha and the team succeeded in bringing the concept of Interaction of Rural Landscapes by using traditional Sundanese and Lawang Saketeng designs, as well as approaches to design principles: socio-cultural approaches, ecological approaches, and economics. Bilal Pangaribowo, Radha Adelia Harahap, Nada Fathia Rasyida managed to get 2nd place in the ICoSAFS event. Bilal, et al carry the concept of Leuwickulture which is an agro-tourism area based on sustainable agriculture that has various agricultural attractions widely from upstream to downstream.

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LEUWICKULTURE
Integrated farming system towards sustainable agriculture

Agro-tourism is a strategy to create sustainable agriculture from an economic, social and cultural perspective. The concept of the agro-tourism system at this site uses a permaculture approach or a permanent agricultural concept with a sustainable goal. Permaculture has a concept that has a mutually exclusive system related in the system itself to meet the effectiveness and efficiency of existing energy use.

Leuwickulture is an experimental garden owned by IPB University which is located in Dramaga with an area of 1 ha which has the potential to be used as a location for sustainable agricultural development such as agro-tourism. This place will be an educational recreation through several farming activities in there, such as cultivating, gardening, joint harvest activities, workshops for ornamental plants propagation, composting, etc.

Leuwickulture is an agrotourism area with the base of sustainable agriculture that has various global agricultural attractions from upstream to downstream. The development of this area is focusing on the integrated farming system, the energy efficiency, the connection between human and nature, and the permaculture approach.

Concept

Site Orientation

Problem

Solution

Permaculture Approach

Concept

Site Analysis

Zoning

Landscape Plan

Design Explanation

Illustration

INTERNATIONAL E-CONFERENCE ON SUSTAINABLE AGRICULTURE AND FARMING SYSTEM

ICoSAFS 24 - 25 September 2020

ICoSAFS 24 - 25 September 2020

LANDSCAPE DESIGN OF SAWAH BARU
AS AGRICULTURAL TOURISM DESTINATION

INTRODUCTION

ANALYSIS

SEQUENCE CONCEPT

SITE PLAN

LANDSCAPE PLAN

PRIMARY CONCEPT

CONCEPT DESIGN

METHOD

INTERNATIONAL E-CONFERENCE ON SUSTAINABLE AGRICULTURE AND FARMING SYSTEM

ICoSAFS 24 - 25 September 2020

ICoSAFS 24 - 25 September 2020



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Research, Innovation, and Bussiness

IPB 3S Paddy Variety Planting Trial in Blanakan Subang

Rice fields in the Blanakan sub-district, Subang Regency, are characteristic of coastal rice fields. These rice fields on the coast of the North Coast of West Java are often inundated, frequently exposed to pests, and in some places also subject to saltwater runoff/rob. To overcome this and future developments, multi-stakeholder cooperation is needed, including technology from universities. Thursday, August 5, 2021. Dean of the Faculty of Agriculture, IPB university, Dr. Sugiyanta, accompanied by the deputy dean, Dr Suryo Wiyono, visited and discussed with farmers, PPL and UPTD of the Blanakan District Agriculture Service, H Mad Anwar, SP, and the Head of Rawameneng Village, Blanakan District. Various problems in rice cultivation in the area were discussed in the event, namely borer, salinity and lack of water in certain conditions. In the Blanakan Sub-district, farmers are being tested for the IPB 3S variety of rice. The Blanakan farmers seemed enthusiastic, because the performance of IPB 3S rice was better than other varieties.



Hybrid Maize Varieties JHG 02 Adaptive to Flood Environment

Dr. Willy Bayuardi (Department of Agronomy and Horticulture) as a team of corn breeders collaborated with the Cereal Research Center to create a hybrid corn variety JHG 02 which is adaptive to inundation environments. This hybrid is the result of a cross between IPB L15 line as the female parent with the Balitcereal Mr14 line as the male parent. Based on the results of the adaptation test, the yield potential of this variety is 12.41 tons/ha; the average yield under normal conditions is 11.19 tons/ha; and average yield in inundation conditions 7.22 tons/ha at 15% moisture content. The JHG 02 variety is somewhat resistant to downy mildew and leaf rust.



22 Advantages of IPB 3S Rice Varieties, Fluffy and Disease Resistant

IPB 3S rice varieties are new types of irrigated rice varieties with study architecture and dense panicles. So that it can increase the productivity of paddy fields, especially in suitable areas. IPB 3S rice is Cere rice with less plant age over 112 days. This variety has the number of grain per night as much as 218-223 grains with an average yield of 7 tons per hectare and the potential yield can reach 11.2 tons per hectare.

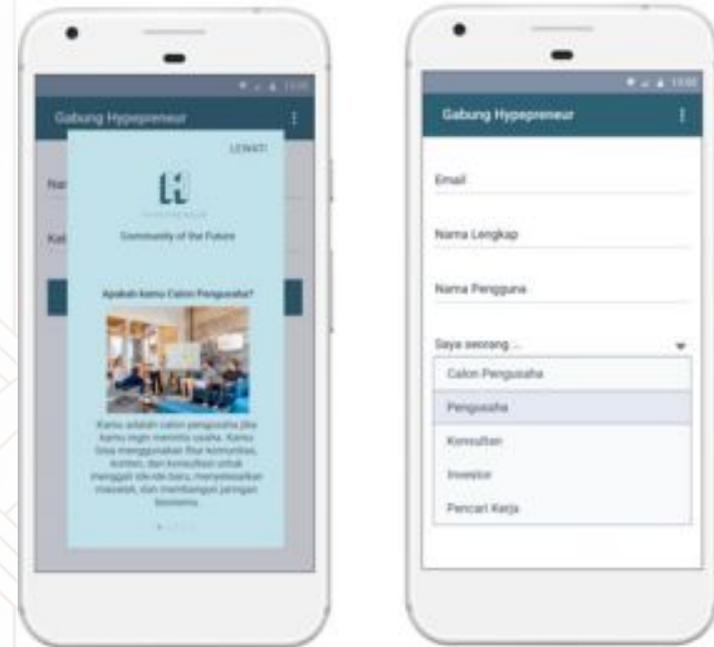


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23 Development Program for Stunting Prevention

The planning program for developing a mobile application for maternal and infant eating patterns for stunting prevention is a collaborative program between Muara Enim Regency and the IPB Business School (SB IPB). This collaboration program aims to be able to help monitor eating patterns and as a food reminder so that mothers and babies can find out what food needs are in accordance with their nutritional needs. Through this application designed by Business School experts, the data obtained can be in real time and on target as a form of intervention from the Food Security Service of Muara Enim Regency, in villages that have a tendency towards stunting. The planning program for developing a mobile application for maternal and infant eating patterns for stunting prevention applies a multi-year system and has been running from 2019 to 2022.



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24 Performance evaluation of sprayers for food and agriculture production

Sprayer tools and machines are important tools to support food and agricultural production, especially in controlling plant pests and diseases. The need for machine tools sprayer is increasing so that it triggers the development of machine tools sprayer industry. Testing the quality of machine tools sprayer is needed to guarantee and provide protection to users, especially farmers. The test results on several sprayer machineries produced in the country and imported with procedures referring to SNI in 2021 indicate that the machine tools tested have met the specified criteria. This activity supports the achievement of the SDGs 2 in terms of against hunger through increasing food production.

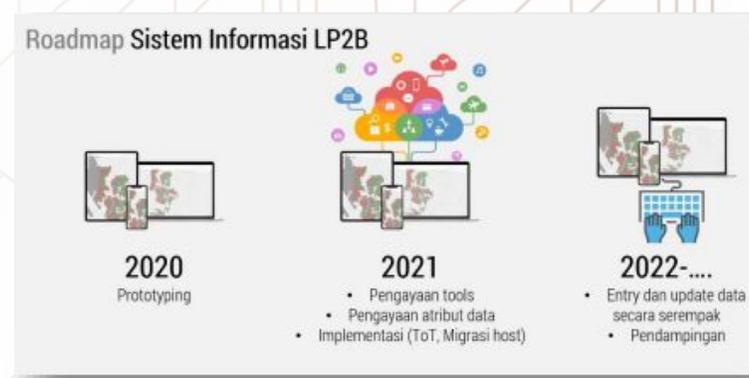
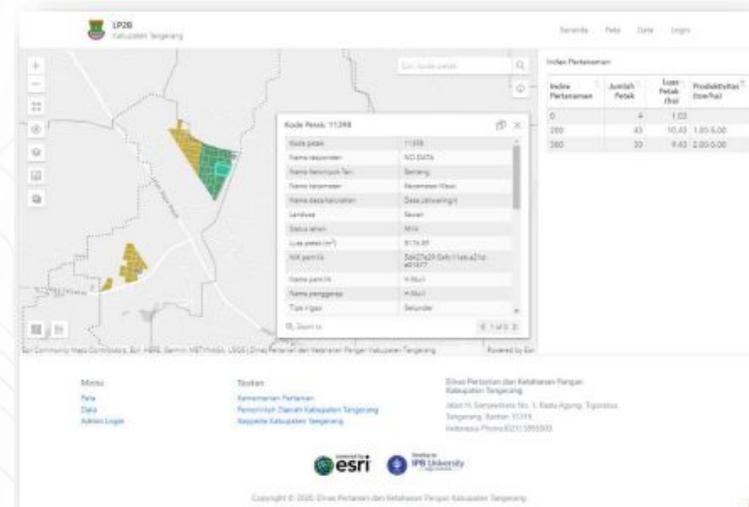


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25 Sustainable Food Agricultural Land Information System (LP2B) Tangerang Regency

The next stage of mapping and determining Sustainable Food Agriculture Areas (KP2B) which is equipped with data by name by address of land ownership to the plot level is the organization of data and information that is integrated in a database and LP2B Information System that is accurate, informative, updatable, multiplatform, easy to access and easy to operate. The LP2B Database and Information System can support the successful implementation, monitoring and evaluation of sustainable food agriculture land protection programs in an effort to achieve food security, independence and sovereignty.



26 Innovation Based on Super Food Spirulina

Spirulina is well known as a superfood. PKSPL LPPM IPB in collaboration with the Regional Institute of Science and Technology IPB developed microalgae-based products into food and beverage products that have nutrients and are high in protein. Spirulina with the Latin name *Arthrospira platensis* is a natural algae that grows in the form of blue green algae in water. "No wonder because the nutritional content of spirulina is used as a 'Super Food'," Research on Commercialization of "Seacera Spirulina Cereal Bar (Jipang Spirulina) was chaired by Dr. rer net Kustiariyah Tarman with a team of Prof. Dr. Ir. Iriani Setyaningsih, MS; Dr. Eng. Wahyu Ramadhan, S.Pi, M.Si; Vepryany Oktaviarty, S.TP; Meydia, S.Pi. and Jesica Audia Rehatta. It is a processed product that uses spirulina mixed with various nuts. Another research that uses spirulina is an instant drink product called Spirulina Latte Instant. This research was conducted by Dr. rer net Kustiariyah Tarman, Vepryani Oktaviarty, Meydia, Himadatul Ramdani, Prof. Dr. Joko Santoso, Dr. Eng Wahyu Ramdani. Sea Latte spirulina is a beverage innovation based on spirulina. The expected achievement of this research is the existence of alternative choices of healthy snacks and healthy drinks where the nutritional content of spirulina is no longer in doubt.



FORMULIR PERMOHONAN PENDAFTARAN PATEN INDONESIA
APPLICATION FORM OF PATENT REGISTRATION OF INDONESIA

Data Pemohonan (Applicant)	
Nome Peromohonan / Number of Application: 10020122845	Tanggal Peromohonan / Date of Submission: 15 Dec 2021
Jenis Peromohonan / Type of Application: PATEN SUBSTANSI	Jumlah Klaim / Patent Claims: 1
	Jumlah Gambar / Patent Drawing: 4
Judul / Title: PROSES PERBUATAN SPIRULINA SNACK DAN BEVERAGE ALGA LAUT MUDA (Optimal Algae)	
Abstrak / Abstract: Inovasi yang dihasilkan adalah spirulina snack bar yang terdapat dengan alga laut Spirulina... (text continues)	
Permohonan PCT (PCT Application)	
Nomor PCT / PCT Number: -	Nome Publikasi / Publication Number: -
Tanggal PCT / PCT Date: -	Tanggal Publikasi / Publication Date: -
Pemohon (Applicant)	
Nama / Name: Almaty (Alamat)	Surel/Telp (Email/Phone): 0212822845
Instansi/Perusahaan/Reper (PIR) / Institution/Company/Reper (PIR): Gedung Kerd Train Station, Lantai 2, Kampus IPB Dramaga, Bogor	48@ipb.ac.id

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Jenis Peromohonan / Type of Application: PATEN SUBSTANSI	Jumlah Klaim / Patent Claims: 1
	Jumlah Gambar / Patent Drawing: 5
Judul / Title: FORMULA MINERAL LARUT BUBUK BERBASIS ALGA LAUT (Optimal seaweed DRG KAKALAN)	
Abstrak / Abstract: Formula minuman berbasis alga laut berprotein tinggi... (text continues)	
Permohonan PCT (PCT Application)	
Nomor PCT / PCT Number: -	Nome Publikasi / Publication Number: -
Tanggal PCT / PCT Date: -	Tanggal Publikasi / Publication Date: -
Pemohon (Applicant)	
Nama / Name: Almaty (Alamat)	Surel/Telp (Email/Phone): 0212822845
Instansi/Perusahaan/Reper (PIR) / Institution/Company/Reper (PIR): Gedung Kerd Train Station, Lantai 2, Kampus IPB Dramaga, Bogor	48@ipb.ac.id

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Tempe: Indonesian Cultural Heritage for the World

“Department of Food Science and Technology Promotes and Shares About Tempe through Summer Course Program 2021” Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology (FATETA), IPB University in collaboration with South-East Asia Food and Agricultural Science and Technology (SEAFAST) Center, Institute for Research and Community Service (LPPM), IPB University held the 4th edition of summer course program on “Tempe: Indonesian Cultural Heritage for the World”. The summer course activities were held fully online on July 26 - August 6, 2021 and in accordance with the policy of IPB University due to the ongoing COVID-19 pandemic.



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Organic Food Market Based on Consumer and Customer Behavior in Supporting Food Security and Safety

Trends in food safety are a sensitive issue in the sustainability of the food industry today. Organic farming can be an alternative solution because it has a balance of environment, health, and benefits for local farmers. The 2019 FiBL and IFOAM Survey Report, Statistics Alliance of Indonesian Organics (SPOI, 2019) notes that Indonesia has a very potential land area for organic agriculture development and a sufficient number of producers. Therefore, the potential for organic agricultural production in Indonesia is very good. However, high product prices, low production scale and certification barriers are factors limiting the growth of the domestic organic food market.



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Scale up Production of Flour and Collagen Rejected Chicken and its Application to Chicken Broth Seasoning

Description The activity was conducted visiting Hejo Farm located in Cicurug, Sukabumi Regency. Hejo Farm is a laying hens farm. The laying hens farming system at Hejo Farm has an open farm and a closed farm model. The laying hens found at Hejo Farm are around 1 million heads. Of the 1 million laying hens, about 20% of chickens are not productive. These unproductive chickens are grouped into rejected chickens. The average age of the chickens is two years, with an average weight of 2 kg/head. This rejected chicken is sold at Rp. 12,000/kg. Much cheaper than broilers which cost up to Rp. 28.000/kg. The public does not like this rejected chicken because of its tough meat texture. However, it has the potential to be used as raw material for chicken flour and chicken collagen.

Benefits. Increasing added value of discarded laying hens, increasing collaboration between universities and industry, application of science and knowledge to the community.

Outcomes Hejo Farm will be a supplier of discarded laying hens for the Kedaireka program to PT. Sukaraja Pangan Utama with Scale-up Production of Flour and Collagen Rejected Chicken and its Application to Chicken Broth Seasoning.



30

Slow-Release Fertilizer Using Alginate/Biochar Sugarcane Bagasse Composite

Description Bagasse is a solid waste produced from the sugarcane (*Saccharum officinarum* L) milling process in the sugar industry. However, the utilization of the remaining sugarcane bagasse waste has not been carried out optimally so that it can cause problems and environmental pollution. Therefore, appropriate processing and product creation methods are needed to optimize the potential of the resulting bagasse waste. One alternative product that can be produced from bagasse is Biochar, which can be used as a slow-release fertilizer as an effort to develop precision fertilizers for sustainable agriculture. In this study, a slow-release fertilizer was developed from the composite of Alginate and Sugarcane Bagasse Biochar.

Benefits As a place to learn to apply research results in hydroponic farmers

Constraints Partners who have hydroponic cultivation in Lampung are very limited, finally looking for partners in Bogor to test the results of the research

Outcomes Research Proposal entitled Slow-Release Fertilizer Using Alginate/Biochar Sugarcane Bagasse Composite submitted to the ITERA Grant



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Study on Bioprecision Agriculture, Production Efficiency, and Ecological Saving

The productivity of farmers' rice yields of 5 tons of dry milled grain (GKG), has stagnated since the last 10 years. This is partly due to the non-optimal use of synthetic fertilizers and the increasing use of pesticides from year to year. In turn, soil conditions are poor in organic matter, fertility is decreasing due to loss of nutrients. The problem is that the use of synthetic fertilizers that are not in accordance with the needs in addition to making productivity not optimal, plants are also susceptible to pests and diseases. On a macro level, the fiscal burden due to bearing fertilizer subsidies is IDR 25.3 trillion in the 2021 APBN.





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Campus Operation

32 Feed Sorghum Production Cooperation with PT. Santana Manggala Karya

The Faculty of Animal Husbandry IPB University cooperates with a company engaged in the agro-industry sector, namely PT. Santana Manggala Karya. The scope of the cooperation agreement includes the provision of 10 hectares of land in the UP3J Fapet IPB area which has not been used by the first party, land clearing and land clearing of 10 hectares and the implementation of Samurai 2 sorghum cultivation activities starting from planting, fertilizing, maintaining, harvesting and sales by a 2nd party and then supervision, monitoring and evaluation will be carried out by Fapet IPB.



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33 Inaugurating Modern Green House

Rector of IPB University, Prof. Arif Satria inaugurated a modern greenhouse at Sadifa Farm, Dramaga Campus, 31/7. The establishment of this greenhouse is the result of a collaboration between the Faculty of Agriculture, IPB University and the Food Security Agency of the Ministry of Agriculture (BKP Kementan) RI. The Dean of the Faculty of Agriculture (Faperta) IPB University, Dr. Sugiyanta said greenhouse with a capacity of 8,000 holes for hydroponics would be used for research activities, student practicum and internship. He believes that the presence of this greenhouse can encourage the birth of related agricultural innovations. For example, how to efficiently use the right nutrients, so precision for best practice can take advantage of that,” said Dr Sugiyanta. He continued, Sadifa Farm will be used as a home garden learning center. So that all yard activities, including research, apprenticeship training and so on, will be carried out in this garden. All these activities, said Dr. Sugiyanta, are also directed to accelerate the implementation of the Merdeka Learning Campus Merdeka (MBKM) program.



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Community Engagement

34

Faculty of Agriculture Team Harvest Sweet Potatoes with Farmers in Cibuntu Village, Kuningan

Cibuntu Village is a buffer village for Mount Ciremai National Park (TNGC) which is located in Pasawahan District, Kuningan Regency, West Java. As a buffer village, Cibuntu Village has the potential for nature conservation and fertile agricultural land. The residents of Cibuntu village are known to be compact in carrying out nature conservation activities and agricultural activities. One of them is sweet potato farming activities. Sweet potato planting in Cibuntu Village applies PGPR (Plant Growth Promoting Rhizobacteria) originating from the Mount Ciremai National Plant (TNGC). This started from the scarcity of subsidized fertilizers in Cibuntu Village. TNGC sees this scarcity as an opportunity to make efforts to manage ecosystems in Cibuntu Village which is a buffer village for the National Park by utilizing microbes as a substitute for chemical fertilizers. PGPR are bacteria that live around plant roots. These bacteria live in colonies covering plant roots. For plants, the presence of these microorganisms is very good, because these bacteria provide benefits in plant physiology and growth processes. Cibuntu residents apply a combination of PGPR with manure to support the growth of sweet potatoes. The land used for planting sweet potatoes is 70 ha.



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35 Introduction of Multi-Canopy Rice Technology in Central Kalimantan

Prospective rice cultivation technology for increasing land productivity is urgently needed to meet the needs of increasing national rice consumption. One of the new technological breakthroughs developed by IPB University in collaboration with the Center for Rice Plants (BB Padi) is the Multi-canopy Cultivation Technology. Multi-canopy technology was tested by the IPB Research Team with research partners BB Padi and BPTP Central Kalimantan in Dramaga, Bogor Regency, Sukamandi, Subang Regency, and the food estate Belanti Siam, Pulang Pisau Regency, Central Kalimantan. This research is supported by the National Research Priority (PRN) scheme from the Directorate of Resources, Ministry of Education, Culture, Research and Technology. The introduction of new multi-canopy rice technology was carried out by researchers led by Dr. Ahmad Junaedi from the Department of Agronomy and Horticulture, Faperta IPB to researchers and farmers located at BB Padi Sukamandi, Tuesday, December 21, 2021.



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36 Faculty of Agriculture IPB Survey of Innovation Village and Rice Field Development Activities 4.0 In Subang, West Java

Rice is one of the strategic commodities both economically, socially and politically. In general, rice farming is still the backbone of the family economy and the rural economy. West Java is one of the centers of rice production that bears the national food needs. According to Saptana (2012), West Java's food capacity is constrained by land use competition, extreme climate change, lack of agricultural infrastructure, and degradation of agricultural resources. This situation greatly affects the level of efficiency of farming. According to data from the Ministry of Agriculture (2020), Subang Regency occupies the third highest production position in West Java Province. This district is located between the districts of Karawang and Indramayu. The rice harvested area of Subang Regency is 156,298.50 hectares, the rice production is 942,932 tons GKG and the rice production is 540,960 tons.



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37 Development of Precision and Smart Rice Farming at the Kiarasari, Comprenng, Subang



The area of precision and smart agriculture development in farmer corporations is 500 ha with phase 1 covering an area of 115 ha. This activity involved 11 lecturers and researchers, 30 MBKM students, and 70 farmers. With this model, rice production becomes more efficient (reducing production costs, improving crop quality, and farmers' income). Precision and smart farming is the future farming model for the millennial generation of farmers.

38 IPB and Prima Agro Tech Promote Bioprecision Agriculture Together with Subang Farmers

Environmentally friendly rice cultivation (bioprecision basis) was socialized by the Faculty of Agriculture, IPB University in collaboration with PT Prima Agro Tech to farmers in Blanakan District, Subang, West Java, Wednesday (6/10). "We are here to deliver a technology that can help farmers increase rice production in a sustainable manner. The technology is simple, from the results of a long research, namely using beneficial microbes," said the Dean of the Faculty of Agriculture, IPB University, Dr. Sugiyanta. With the theme "Sustainable Bio-Precision Rice Farming, the socialization took the form of a discussion this afternoon, attended by around 50 local farmers. to share information and experiences on the concept of precision and environmentally friendly sustainable agriculture in order to increase national rice productivity.



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<https://tabloidsinartani.com/detail/indeks/teknolingkungan/18409-Bersama-Petani-Subang-IPB-dan-Prima-Agro-Tech-Giatkan-Pertanian-Biopresisi>



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Sorinfer Feed Aid for Disaster Victims

The Faculty of Animal Husbandry, IPB University, in collaboration with the Directorate General of Animal Husbandry and Animal Health, provided 20 tons of sorinfer feed assistance. Sorinfer feed assistance was distributed in two sub-districts, namely Candipuro sub-district and Pronojiwo sub-district. Sorinfer or fermented Sorghum indigofera is a complete fermented feed which is the result of an innovation from Prof. Dr. Ir. Luki Abdullah, MSc Agr produced by PT Prima Agrostis Nusantara. Sorinfer is a ready-to-eat feed that can be directly given to livestock in an emergency.



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40 Rice Production Assistance with the Organic SRI Method

This Organic Rice Development Activity in collaboration with IPB Community Groups of Organic Farmers in Tanggamus Regency is one of the follow-up actions to the Agreement Jointly between the Tanggamus Regency Government and the Bogor Agricultural Institute Number B.31.a/35/08/2019 and 094A/IT3/HK.01/2019, dated 16 September 2019 regarding Cooperation in Human Resource Development, Research and Development and Community Service. This activity is in the form of Organic Rice Cultivation Assistance for farmers in Tanggamus Regency. The implementation location is in Talang Padang District, Tanggamus Regency. The plan for mentoring activities for organic rice cultivation includes: Preparation of demonstration plots for organic rice cultivation using the System of Rice Intensification (SRI) method; This activity will start from the planting season in July 2021 until the harvest in Indonesia November 2021 with a demonstration plot location on BPP Land, Talang Padang District.



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<https://ipb.ac.id/news/index/2021/11/bupati-tanggamus-dan-ketua-dep-artemen-ekonomisumberdaya-dan-lingkungan-ipb-university-panen-padiorganik/44efbc8cf2bff3227a08112dd2adfc94>



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Making Soy Milk as a functional drink and its benefits

One of the functional drink products that is well known to the public is "soy milk". Currently, not a few people have a wrong understanding of the efficacy of "soy milk" which can replace lactose in cow's milk and goat's milk. One of the efforts to educate the public about this, Dr. Mega Safithri, S.Si., M.Si, IPB University lecturer from the Department of Biochemistry, Faculty of Mathematics and Natural Sciences (FMIPA) explained the efficacy and how to make nutritious, safe, practical and inexpensive soy milk as a functional drink. Soy milk can be an alternative source of protein and prebiotics for adults and children who cannot digest milk lactose or children who are allergic to cow's milk and goat's milk protein. However, for children who are allergic to cow's milk protein but can digest lactose, it is recommended to give goat's milk to children or breast milk to toddlers under two years old. Soymilk is a healthy drink as a source of protein, bioactive antioxidants, and prebiotics. The implementation of this webinar has socialized the benefits and nutritional content of soy milk and how to make soy milk that is nutritious, safe, practical, and inexpensive.

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42 In House Training: Thermal Process of Aseptic and Retort System SYSTEM

Community Engagement is one of the activities carried out by the Department of Food Science and Technology (DFST). This activity is realized in an integrated manner in a shade, namely the Laboratory of the ITP Department (LDTP) which has been accredited since 2006. The main activities are analysis, training and consulting service activities. All LDITP activities are oriented towards industrial facilitation to produce good quality and safe food products according to regulatory requirements in Indonesia. One of the highlights is the Thermal Process Training activity which allows partners to understand the evaluation of the adequacy of the thermal process in accordance with the requirements to meet the National Agency of Drug and Food Control Republic of Indonesia regulation "Peraturan Badan Pengawas Obat dan Makanan (BPOM) RI Nomor 27 tahun 2021". In 2021, two in-house trainings were held (PT. Garuda Food and PT. Titra Fresindo Jaya Mayora Group) as well as one regular training for participants from various food industries. This service activity organized by the ITP Department can certainly contribute to the achievement of SDGS 2 (zero hunger), 3 (good health and well-being), 4 (quality education), and 17 (partnerships for the goals) because it facilitates partners to produce good quality and safe food products. The partnership between academia and industry partners will certainly accelerate the achievement of the SDGs through programs that are implemented in real terms such as this analysis, training and consulting service activity.



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Closed-Loop Model Development on Horticultural Commodities

The closed loop pilot project was initiated by the Indonesian Chamber of Commerce (KADIN) and one of the lecturers from the Department of Economics, IPB, namely Prof. Muhammad Firdaus. The development of this closed-loop model is carried out in Garut Regency as one of the largest horticultural production centers in Indonesia, especially for vegetable commodities such as chilies, tomatoes, potatoes, oranges, avocados, etc. As the initial business model for closed-loop, chili was chosen because of its size. the challenges of increasing productivity and price fluctuations that occur both at the market and at the farmer level. The purpose of the closed-loop is to form a supply chain and value chain of horticultural products from upstream to downstream so that farmers' agricultural products will have their own market.



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Agrianita Faperta IPB Shares Blessings in the Holy Month of Ramadan 1442 H

The distribution of 90 packages of basic food materials has been carried out to be distributed to honorary education staff and freelance daily employees within the Faculty of Agriculture and the Department of Agriculture On Friday 7 May 2021.



SCHOOL LUNCH PROGRAMME (SLP) 2021 “SLP GOES TO PESANTREN”

Anemia, stunting, undernutrition and more FEMA, IPB University nutrition in school children and adolescents in Indonesia is still quite high. One of the efforts to improve the nutritional status of school children and adolescents is School Lunch Program (SLP), which is a cooperation program initiated by the Department of Public Nutrition, FEMA, IPB University in collaboration with PT Ajinomoto Indonesia, since 2018 started with pilot project at two pesantren (Islamic Boarding School) in Bogor. The evaluation results showed that SLP contributed positively to increased nutrient intake, improved eating habits, and decreased PT Ajinomoto Indonesia, since 2018 prevalence of anemia and obesity in school-aged children and adolescents. This shows that SLP is a viable and sustainable program to improve good eating habits and nutritional status of adolescents. Through SLP, IPB and PT Ajinomoto. The development of the SLP module is the initial stage of sustainability of the program. This module is disseminated to various boarding schools so that the scope and benefits are wider and greater. Socialization of SLP programs requires a good strategy so that other pesantren/Islamic boarding schools are willing and able to implement SLP independently. Therefore, in 2021 comprehensive socialization and assistance is carried out to prepare Islamic boarding schools/Islamic boarding schools in the implementation of SLP. SLP assistance activities in pesantren/Islamic boarding schools are conducted in several stages consisting of:



Sahabat Masyarakat dan Kesatria Pangan (KAPANGAN)

Sahabat Masyarakat and Ksatria Pangan (KAPANGAN)" are community service activities in the food sector which organized by Department of Food Science and Technology student association (HIMITEPA). KAPANGAN's activities consist of 3 types of activity, namely "Sahabat Pedagang", "Sahabat Sekolah", and "Sahabat Desa". "Sahabat Pedagang" is an outreach and coaching program for merchants. This program was carried out gradually on February 27, 2021, March 20, 2021, and May 29, 2021. Annually, its activities always cooperatively conducted with Traders at the SAPTA Canteen, FATETA IPB in the form of inspections and counseling about their products. However, due to the pandemic conditions in 2021, "Sahabat Pedagang" was adapted into an online outreach activity that discussed the offline selling system going online, optimizing online-based sales applications, and selecting appropriate packaging for their products. Through this activity, traders could adapt to changes in the offline system to online, sales of traders can be optimized through online-based applications such as grabfood or gofood, and traders have insight into the appropriate packaging for their products.



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Food Processing Consultation

The Indonesian Food Care Division (DPPI), Food Science and Technology Student Association (Himitepa), IPB University held an online socialization of good food processing at home. Under the auspices of the Food Science and Technology Student Association, DPPI is one of the divisions engaged in community service, especially in the food sector. The work programs that were brought were Sahabat Pedagang, Sahabat Sekolah, Sahabat Desa, Commemoration of World Food Day, and food studies in collaboration with the Indonesian Food Care Student Association (HMPPPI) IPB University. Sahabat Desa is a field trip activity in order to provide knowledge in the form of training and counseling. "The counseling program is given to villagers, especially regarding food which is expected to be useful in the future. In its implementation, the concept of Sahabat Desa activities was prepared by the person in charge of Sahabat Desa and a team formed from "Kapangan" (Ksatria Peduli Pangan). Kapangan who is outside the DPPI membership is responsible for being a facilitator and in charge of compiling reports on each series of activities. This extension activity was carried out in six villages at different times. The activity was carried out by the Sahabat Desa team with a team of IPB University students who carried out the Thematic Real Work Lecture (KKN-T). Some of the villages visited were Margaluyu Village, Kiarapedes District, Purwakarta Regency; Tanipah Village, Mandastana District, Barito Kuala Regency, South Kalimantan; Cijunjung Village, Bogor Regency, West Java; Pejagatan Village, Kebumen Regency, Central Java; Ciburayut Village, Bogor Regency, West Java and the Kinayungan Plot, Pondok Kacang Barat Village, South Tangerang City, Banten.



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The Board of Professors of IPB University Formulate Strategy and Governance of Rice

The problem of rice starting from its production and management has not been properly decomposed. Therefore, the Board of Professors of the Bogor Agricultural Institute (DGB IPB University) held a consultation and discussion to produce critical solutions. "More than 90 percent of the staple food of the Indonesian people is rice. More than 13 million farmer households also work in the Food Crops sub-sector that produces rice. So if there is a turmoil in grain, rice and rice can trigger a national upheaval," said the Dean of the Faculty of Agriculture, IPB. University, Prof. Sugiyanta in the DGB IPB University Webinar, Tuesday (8/6). Until now, rice has also become a political commodity that has a strategic role in Indonesia and even the world. The rice problem will not be finished yet, especially the strategy and management.

Therefore, DGB IPB University as a child of the nation participates in solving the nation's problems, especially in the field of Food, one of which is by deliberation and discussion to determine the appropriate National Rice strategy and management carried out by stakeholders and the Government.



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Commercialization Of New Shallot Variety For National Shallot Supply Stabilization

Shallot (*Allium ascalonicum*) is one of strategic horticultural commodities in Indonesia. As one of the staples, the price of shallots is often unstable, and it affects inflation, due to the constant price fluctuations of shallot. One attempt to increase shallot productivity is by developing superior varieties of shallots and providing their seeds. From previous studies, PKHT IPB has produced several superior varieties of shallots with high productivity, including Tajuk and SS Sakato which are able to achieve productivity of 16 and 28 tons per ha, far above the national average of 9.3 tons per ha. Currently the seed bulbs of these new varieties are not yet available in large quantities. Therefore, commercialization is necessary because the new released varieties has proven to be superior in the field. With the availability of superior quality seed bulbs, it will help to increase productivity and in the end it will support the stability of production and prices of shallots in Indonesia. (04/08/2021-23/12/2021).

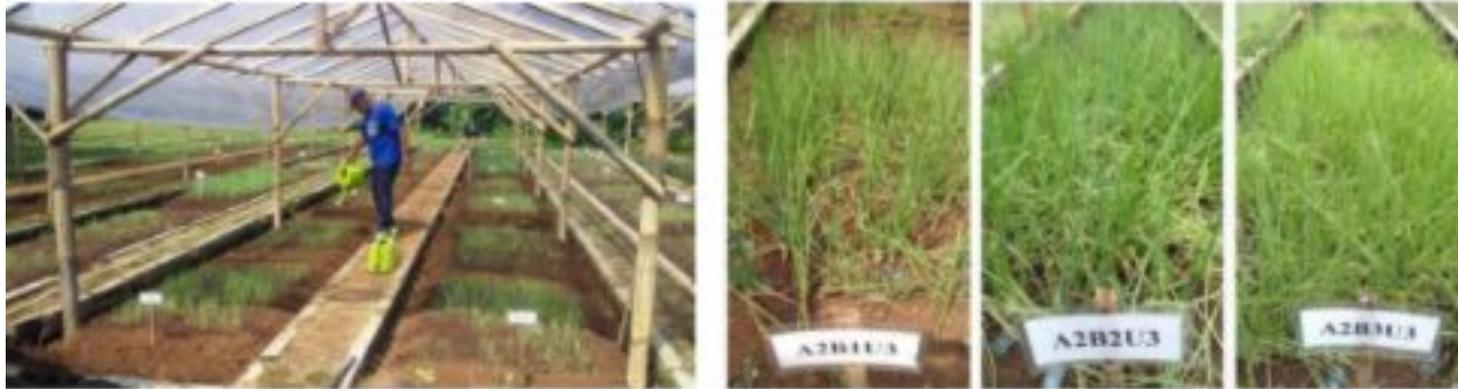


Availability Improvement For High Quality Seed And Variety Of Cayenne Pepper To Increase The Welfare Of Chilli Pepper Farmers In Indonesia

This study is a follow-up study, lasting until December 2021. In this study, further development of cayenne pepper cultivation technique was done through demonstration farming (demfarm) with an area of 10 ha in three provinces of cayenne pepper production centers, namely East Java, Yogyakarta, and West Java. Demfarm activities in East Java Province are located in Blitar Regency with an area of 2 ha and Kediri Regency with an area of 1 ha. Cayenne pepper demfarm in Sleman Regency, Yogyakarta, was carried out an area of 4 ha. Meanwhile, cayenne pepper demfarm in West Java Province was carried out in Cianjur Regency with a land area of 2 ha and a demfarm in Bogor Regency of 1 ha. Currently, the production of 50 kg of cayenne pepper seeds of the Bonita variety has begun in Yogyakarta in collaboration with CV. Jogja Horti Lestari (JHL) and seeds of Loblita 1 variety at the Pasir Kuda PKHT IPB Experimental Farm. This study is a follow-up study, lasting until December 2021. In this study, further development of cayenne pepper cultivation technique was done through demonstration farming (demfarm) with an area of 10 ha in three provinces of cayenne pepper production centers, namely East Java, Yogyakarta, and West Java. Demfarm activities in East Java Province are located in Blitar Regency with an area of 2 ha and Kediri Regency with an area of 1 ha. Cayenne pepper demfarm in Sleman Regency, Yogyakarta, was carried out an area of 4 ha. Meanwhile, cayenne pepper demfarm in West Java Province was carried out in Cianjur Regency with a land area of 2 ha and a demfarm in Bogor Regency of 1 ha. Currently, the production of 50 kg of cayenne pepper seeds of the Bonita variety has begun in Yogyakarta in collaboration with CV. Jogja Horti Lestari (JHL) and seeds of Loblita 1 variety at the Pasir Kuda PKHT IPB Experimental Farm. (04/08/2021-23/12/2021).



Shallot Mini Bulb Production In An Effort To Increase The Supply Of High Quality Shallot Seed Bulbs



The general objectives of this study is to increase the availability of quality shallot seeds through the production of healthy and high quality shallot mini bulbs from TSS. The specific aim of this study are: (1) Obtain optimal spacing and plant density for shallot mini bulbs production from TSS; (2) Study the transmtion scheme of seed borne pathogen and the potential of generation 0 to 3 mini bulbs as extension seed bulbs. (3) Obtain the optimum size and number of generation of mini bulb that increase shallot productivity. This study was done in PKHT-IPB Tajut Experimental Farm, Bogor, West Java Province. Output that have been achieve until the end of 2021 are (1) Various sizes G0 mini bulb from TSS; (2) Fusarium oxisporom and virus analysis on TSS dan G0 bulb to ensure mini bulb produced are free from seed-borne pathogens; (3) One draft of scientific publication in national journal. (10/02/2021-30/12/2021)

Identification Of Chili Pepper Resistance And Resistance Gene Analog (Rga) To Yellow Leaf Curl Disease And Its Vectors

In the first year of this study, identification of resistance responses was carried out with the aim of obtaining candidate plant resistance from 28 genotypes of Indonesian chili. The test was carried out using the virus inoculation method through the whitefly vector insect (*Bemisia tabaci*) in a greenhouse with a completely randomized design, one factor, and three replications. Observation parameters include incubation period, disease incidence, and disease severity. This study activities included propagation of vector insects, propagation of virus inoculum, transmission to test plants with vector insects, resistance response testing of several chili genotypes, symptom observation, and confirmation of Begomovirus to confirm yellow leaf curl disease infection. The chili genotypes observed had various resistance responses to leaf curl disease based on disease severity parameters. The chili genotypes observed were divided into four resistance categories, namely very susceptible, susceptible, moderately resistant, and resistant. From this research, 2 chili genotypes were identified as a resistant to yellow leaf curl disease genotype and 13 chili genotypes were slightly resistant to the disease. (22/03/2021-22/11/2021)





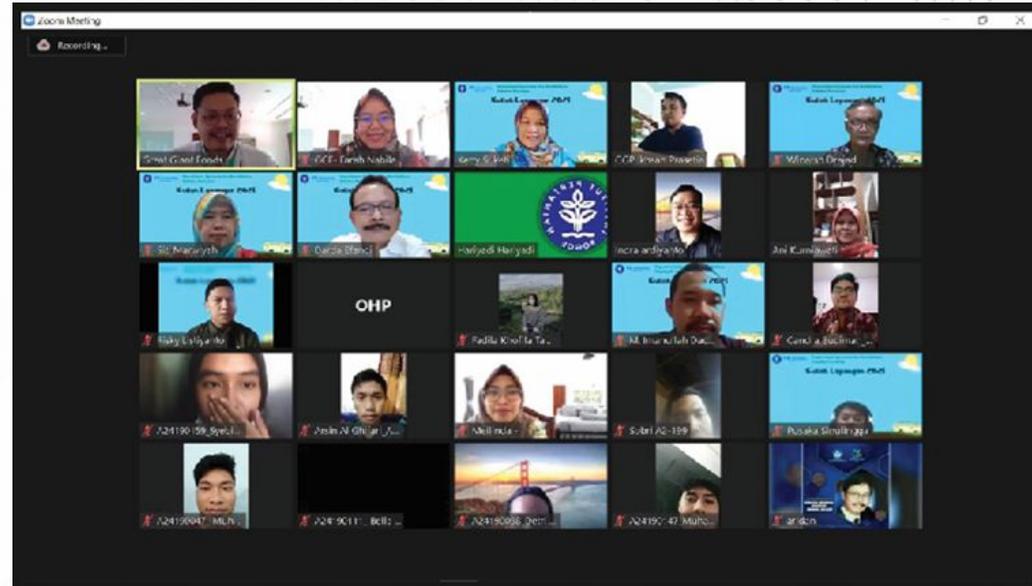
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4

GGF and AGH IPB Held Field Lectures for Students

Great Giant Foods (GGF) in collaboration with the Dept. Agronomy and Horticulture (AGH) Faculty of Agriculture Bogor Agricultural University (IPB) held an online field lecture through the Zoom Meeting application on May 29, 2021. This field lecture was opened with remarks from Indra Ardiyanto as Head of Corporate Communications GGF and Ketty Suketi as Representative of the Management AGH PB Field Lecture 2021. Ketty Suketi expressed her gratitude for the openness of GGF to conduct field lectures. "Thank you to GGF for accepting us to carry out the 2021 AGH IPB field lecture. This event is expected to provide information to students about field activities at GGF," said Ketty.



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