



Supplementary

Sustainability

Report 2021

SDG 3:

Ensure healthy lives and promote well-being for all at all ages

3 GOOD HEALTH
AND WELL-BEING





IPB University
Bogor Indonesia



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GOALS

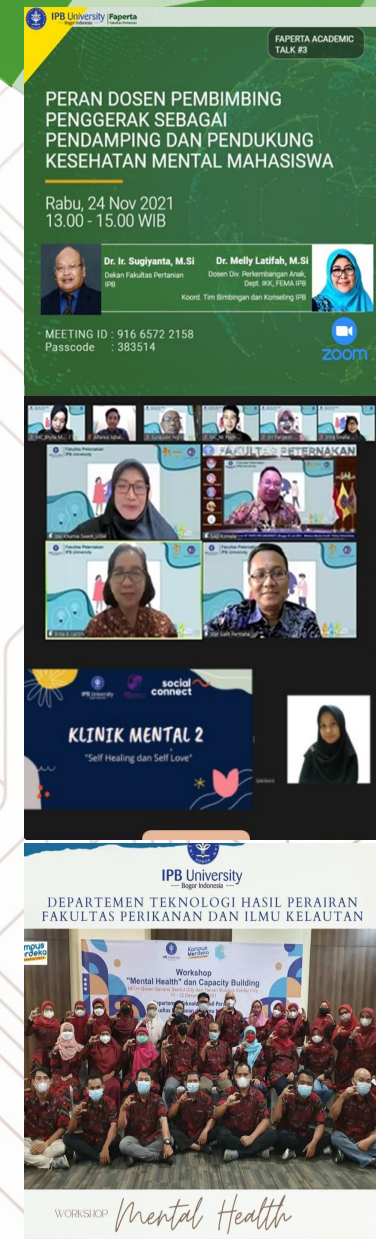


Learning Program

1 Mental Health Webinars for IPB University Civitas

IPB students also experience psychological disorders related to career and mental health. Based on the BEM KM IPB survey (2021), 45% of students experienced mental disorders in boredom during the quarantine period, tiredness and unwillingness to move, and lost interest. Anticipating this, several units at IPB University held mental health webinars. The webinar's target is not only students but also lecturers and educators as a companion and supporters of student health for quality academic activities even during the pandemic. The resource persons for this webinar came from various mental health experts, both external and internal, at IPB University.

The webinars foster a sense of love and enthusiasm for learning in students through the Adaptation Skills Improvement program during the Covid-19 Pandemic by inviting various sources and involving various relevant stakeholders, both preventively and curatively; knowing how to live a healthy lifestyle during a pandemic and stay productive; recognize various potentials and develop their potential so that they can produce productive works; able to cope with the pressure that comes from inside and outside him; able to play a role in building and to foster the mental health of other students; and know the place to report if find the mental health disorders. The implementation time varies from unit to unit and is carried out on an ongoing basis considering that mental health requires ongoing support.

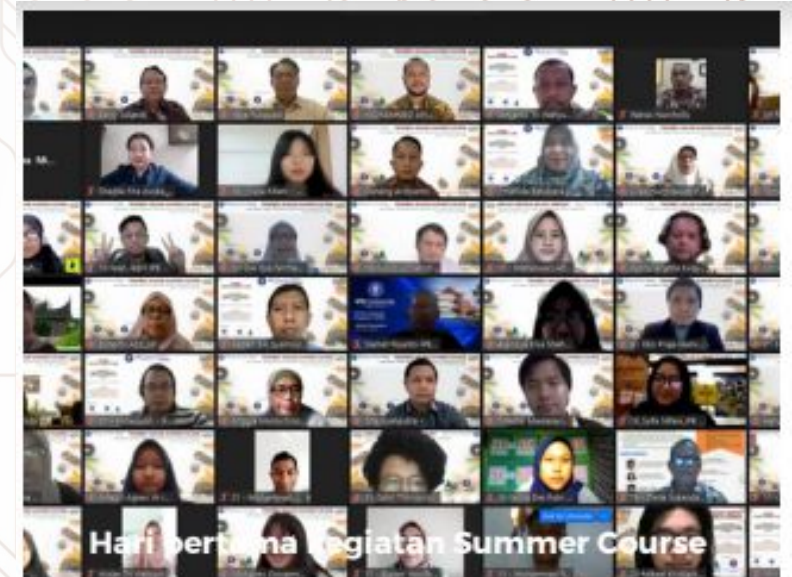


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<https://faperta.ipb.ac.id/blog/2021/12/22/Peran-Dosen-PembimbingPenggerak>
https://www.instagram.com/p/CUkV0T7PgKA/?utm_medium=copy_link
<https://fkh.ipb.ac.id/klinik-mental-2-oleh-bem-fkh-ipb-university>



2 Summer Course "Herbal Medicine: Utilization of Biodiversity Through Bioinformatics and Biodiversity Approach"

The Summer Course activity with the theme Herbal Medicine: Utilization of Biodiversity through Bioinformatics and Biodiversity Approach will be held online from 2-10 August 2021. This summer course aims to introduce a new paradigm for developing Indonesian herbal medicines based on multiple targets and multi-component. The study topics presented in this Summer Course are tropical biodiversity, modernization of herbal medicine development, modernization of evidence-based herbal medicine, network pharmacology, molecular docking, and metabolomics analysis. There are 103 summer course participants, 22 foreign/international students, and 81 students/lecturers from various local universities. International students who took this summer course, 12 students each from Gifu University, six students from UPM (Malaysian citizens four students, Jordan 1 student, and Saudi Arabia 1 student), and from Osaka University



<http://biofarmaka.ipb.ac.id/news/2920-info-tropbrconline-summer-course-2021>
<https://bogor-kita.com/pusat-studi-biofarmaka-tropikaipb-university-perkenalkan-metode-metabolomic-untuk-deteksi-obat-herbal/>
<https://www.youtube.com/watch?v=ARrP5xragWQ>



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3 Community Nutrition Course

FEMA as a faculty that oversees the Department of Community Nutrition has a focus on providing a healthy life to the community. Through public health courses, students are taught about the scope of public health and environmental health, including preventive and rehabilitative efforts to improve health; occupational health and sanitation hygiene.

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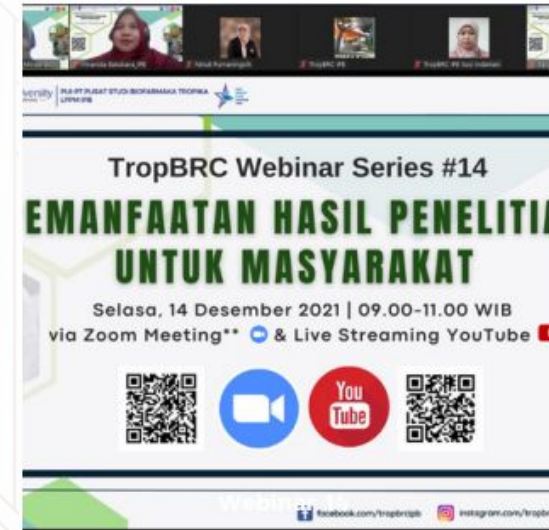


4

Workshop and Webinar on Tropical Biopharmaceutical Study

One of the programs of the Tropical Biopharmaceutical Study Center of LPPM IPB is to provide training and/or assistance to the community/consumers/stakeholders related to the biopharmaceutical field. This workshop and training is also a form of dissemination of research results at the Tropical Biopharmaceutical Study Center of LPPM IPB. There are 9 workshop activities that will be held during 2021. This workshop activity presents speakers from various disciplines, both from IPB and outside IPB. Besides that There are also workshop activities in collaboration with UII Faculty of Medicine.

The TropBRC webinar series activity is a form of dissemination of research results at the Center for Tropical Biopharmaceutical Studies LPPM IPB and sharing knowledge, especially in the field of biopharmaceuticals. There are 14 webinar activities held during 2021. This webinar activity presents speakers from various disciplines both from IPB and outside IPB and in collaboration with various institutions. Webinar topics from upstream to downstream.



TropBRC Webinar Series #14
**EMANFAATAN HASIL PENELITIAN
UNTUK MASYARAKAT**
Selasa, 14 Desember 2021 | 09.00-11.00 WIB
via Zoom Meeting** & Live Streaming YouTube

QR code, Zoom icon, YouTube icon, QR code

facebook.com/tropbrcipb | instagram.com/tropbrc



Materi Hari 1:

- Metode kontrol kualitas bahan baku obat herbal berbasis metabolomik
- Aplikasi TLC dan HPLC sebagai metode analisis kendali mutu bahan baku obat herbal

Materi Hari 2:

- Analisis kemometrik sebagai tools pendukung dalam pengembangan metode kendali mutu obat herbal
- Demo praktikum dan diskusi pengembangan metode analisis menggunakan TLC dan HPLC sebagai kontrol kualitas bahan baku obat herbal

Pembicara:

 Dr. Mohamad Rafi, SSt., MSI Pusat Studi Biofarmaka Tropika LPPM IPB, Departemen Kimia FMIPA IPB	 Dr. Wulan Tri Wahyuni, S.St., M.Si. Pusat Studi Biofarmaka Tropika LPPM IPB, Departemen Kimia FMIPA IPB
 Rudi Heryanto, SSt., MSI. Pusat Studi Biofarmaka Tropika LPPM IPB, Departemen Kimia FMIPA IPB	

Workshop 3

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Student Activities

5

Three International Innovation Awards for COVID-19 Anti-Coinfection Drugs

Two students from FVM IPB University won three awards in an online international student innovation competition, namely two awards at the “SPACE UP 30 International Scientific Paper and Poster Competition” at Telkom University (24/01/2021) and an award at “the 2nd International Conference on Animals Science and Veterinary Medicine” at Brawijaya University (23/09/2021). Both events brought creative ideas from multi-sectoral students from multi-nationalities about dealing with the Post Pandemic COVID-19 situation and providing solutions for the central sector affected by the Pandemic through the One Health concept.



Bintang Aditia Tri Wibowo and Imam Ali Alzaini Bychaqi introduced a biomedical invention for Covid 19 anti-coinfection drug using maggot extract (*Hermetia illucens*; Black Soldier Fly) as an alternative for treatment using antibiotics. Co-infection of Sars-CoV-2 can inhibit the host immune system, increase intolerance to antibacterial therapy, and worsen the prognosis. The main co-infection agents of Covid-19 are bacterial respiratory infections, especially *S. pneumoniae* and *H. influenzae*. Therapy using inappropriate antibiotics could trigger Antimicrobial Resistance (AMR). Therefore, the invention using maggot provides an alternative solution for treatment with antibiotics. It was proven in silico and in vitro that this invention could kill three respiratory bacteria with better activity than conventional antibiotics. The abundant availability, ease of production, and abundant peptide content of maggot as a future protein source commodity have great potential. Therefore, further research is needed for further development.

<https://youtu.be/DhJY-R4AiNw>
<https://www.google.com/url?sa=t&source=web&rct=j&url=https://prasetya.ub.ac.id/id/2nd-icavets-fkh-satuan-mahasiswa-dari-berbagai-negara-asia/&ved=2ahUKEwjKicX8z472AhU3SmwGHeeIBCKQFnoECCcQAQ&usq=AOvVaw2s44cawppkEx3aKHpjHb31>



6

Vetfus: Digital-Based Infusion For Animals



Vetfus is an innovation developed by FVM IPB students to overcome the problems practitioners face when giving infusion therapy to animals. The Vetfus device works using digital technology based on the Internet of Things embedded in animals using a special vest. This device's infusion fluid flow system does not depend on gravity like a conventional infusion system. Therefore, if the position of the infusion bag is lower than the infusion point, the system can still work. The IV bag no longer needs to be placed in a higher position and can be placed in a special vest attached to the animal's body. This innovation was developed to answer the existing problem, namely that the animal given the IV had very limited movement due to the infusion bag that had to be hung all the time. The fluid administration system developed on the Vetfus device is an automatic pump system and remote control using the concept of the Internet of Things. Vetfus is equipped with sensors to detect the presence of blood entering the infusion tube to provide real-time notifications for veterinary nurses.

Additionally, Vetfus can measure the amount of infusion fluid that has been given and is monitored in real-time via a smartphone. The PKM team of Vetfus explained the potential for IVF to be developed for other animal species so that giving infusions to animals will be easier, safer, and more precise. Through this creative idea, the FVM IPB students consisting of Afif, Hasnah, Nurmasari, and Masfufah under the supervision of Dr. drh. Ridi Arif, won the first place in the poster presentation which is equivalent to a gold medal at PIMNAS 34 in 2021.



7 Knock Knock Home : IoT Integrated Futuristic Residential Concept as an Effort to Handle the Epicenter of the Pandemic

According to the World Health Organization (WHO), the COVID-19 pandemic on September 6, 2021, in the world has infected 220,563,227 positive confirmed cases and 4,565,483 of them died. Along with the increasing number of cases, the availability of isolation places and treatment in hospitals has decreased due to the surge in victims affected by Covid-19. Seeing the conditions that were less than ideal and the number of people in the surrounding environment having difficulty getting access to isolation rooms, IPB students led by Muhamad Rafi Fazan (TIN 54) created an idea for the future called Knock-Knock Home. This idea is present as a solution in the form of a residential concept idea that is integrated with the Internet of Things (IoT) for the prevention of future pandemics with psychological fulfillment for people who are isolated.



International Webinar on Preventing Diseases through Increased Physical Activity and Improved Nutrition

The next international conference that was organized by the Department of Community Nutrition, Faculty of Human Ecology, IPB university was the SPIRIT International Conference 2021 with the theme "Long-term effects of the COVID-19 pandemics: Preventing non-communicable diseases through increased physical activity and improved nutrition". This conference was held virtually on 8 -9 October 2021. Moreover, this conference was held in collaboration with the University of North Sumatra and Syiah Kuala University. Apart from these three universities,



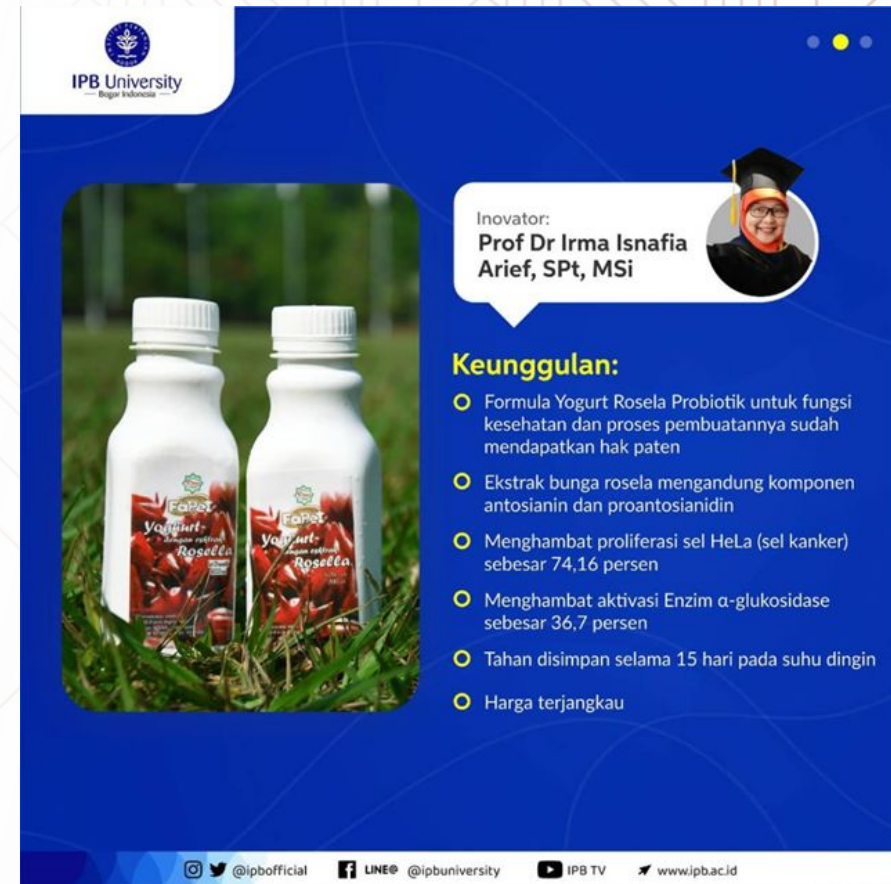
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Research, Innovation, and Bussiness

Rosella's New Probiotic Yogurt

IPB University lecturers discovered a new innovation "Rosella Probiotic Yogurt", namely Prof. Dr. Irma Isnafia Areif, SPT, MSi. Rosella probiotic yogurt has properties as an anticancer and antidiabetic drink. The content of Lactic Acid bacteria (LAB) used in making yogurt is *Lactobacillus acidophilus* IIA-2B4. These bacteria have the best potential in inhibiting the proliferation of HeLa cells (cancer cells) by 74.16 percent. *Lactobacillus acidophilus* IIA-2B4 can affect the metabolism of cancer cells and result in imperfect cell morphology function.



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Inovator:
Prof Dr Irma Isnafia Arief, SPT, MSi

Keunggulan:

- Formula Yogurt Rosela Probiotik untuk fungsi kesehatan dan proses pembuatannya sudah mendapatkan hak paten
- Ekstrak bunga rosela mengandung komponen antosianin dan proantosianidin
- Menghambat proliferasi sel HeLa (sel kanker) sebesar 74,16 persen
- Menghambat aktivasi Enzim α -glukosidase sebesar 36,7 persen
- Tahan disimpan selama 15 hari pada suhu dingin
- Harga terjangkau

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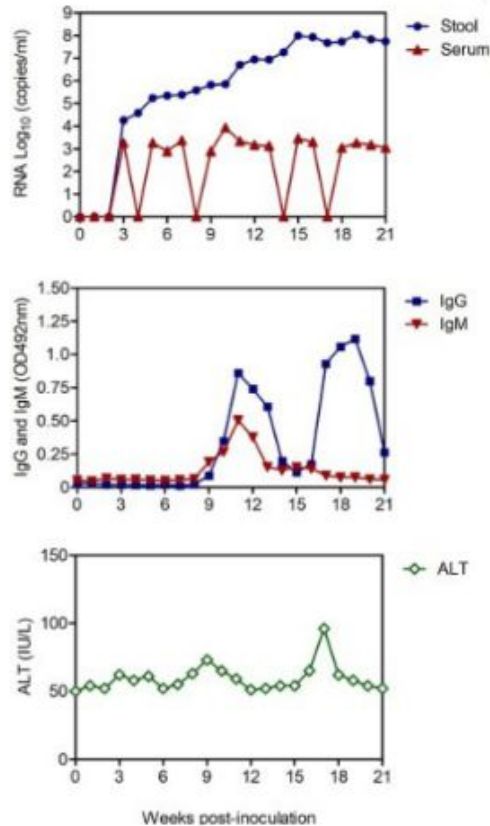
10

Innovation in Cardiac Infarct Therapy Using Stem Cells in Animal Models

Coronary heart disease is the main cause of death in Indonesia. Around 90% of patients with cardiac infarction in humans died because of waiting for a heart donor. The study of myocardial infarction requires animal models that can demonstrate the symptoms and forms of myocardial infarction. Faculty of Veterinary Medicine IPB University in collaboration with Faculty of Medicine Universitas of Indonesia, and IMERI UI (Indonesia Medical Education and Research Institute) conducted research that was carried out from 2020 to 2021 at the FVM IPB University Hospital. The research title was "Making replicas and healing of infarct heart walls in pigs as a therapeutic model for humans". This research is an innovative and visionary breakthrough. The research team consisted of Prof. Drh Deni Noviana PhD, Prof Drh Arief Boediono, Ph.D, DAiCVIM, Dr Drh Gunanti MS, dr. Normalina Sandora, M.Sc., PhD, and dr. M Arza Putra, Sp.BTKV(K). This study resulted in novel cardiac infarct animal models that demonstrated the progression of the infarct and the response to therapy. Animal models of cardiac infarction have been successfully made with consistently satisfactory results. Furthermore, this study successfully implemented innovation in infarct therapy with stem cells. Isolation of placenta from animal models with high viability was used as a modality for infarct therapy. The main benefit of this study was an advancement in the biomedical field in alternative therapies for cardiac infarction through animal model studies. Biomedicine can be realized by harmonious cooperation between medicine and veterinary medicine. The outcomes achieved from this research activity were creating an animal model of cardiac infarction through minimal surgical intervention, placental stem cell therapy for cardiac infarction, and published scientific articles. This study was presented at an international seminar (AJIVE) and was submitted for publication in journals.



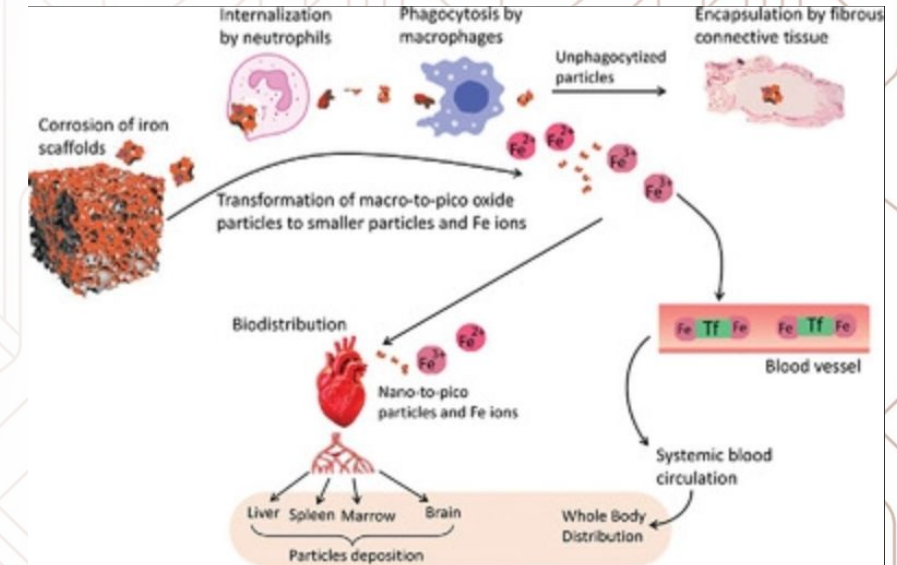
IPB Lecture Invent HEV (Hepatitis E Virus) in wild rabbits through a multinational research collaboration



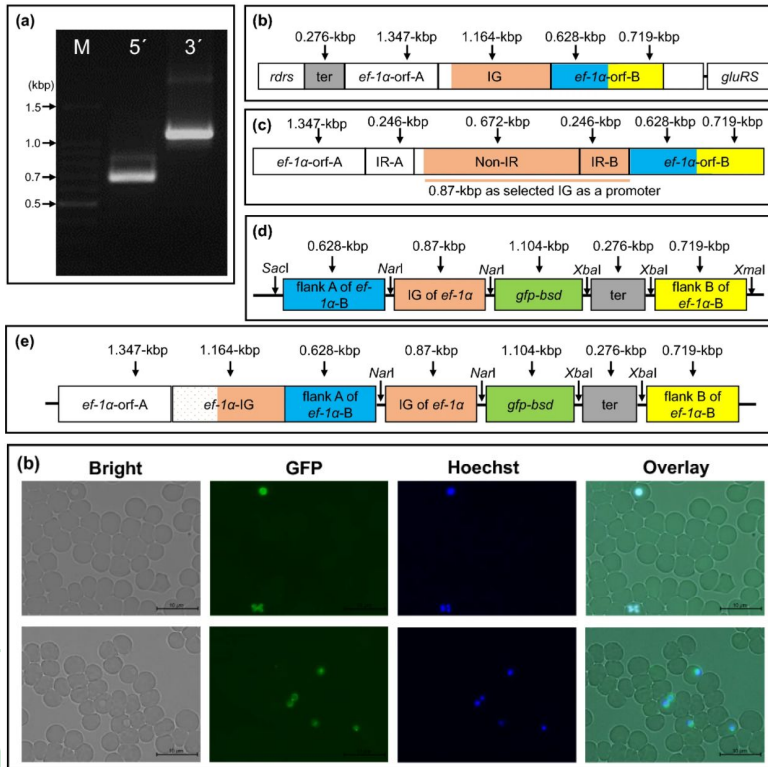
Hepatitis is inflammation of the liver caused by a viral infection, it can also be caused by other conditions or diseases. If not treated properly, hepatitis can cause complications, such as liver failure, cirrhosis, or liver cancer (hepatocellular carcinoma). Hepatitis that is transmitted from rabbits or known as hepatitis E virus (HEV) has been detected in human patients. HEV in wild rabbits has been detected and isolated through a multinational research collaboration. The results of this study have been published in *Veterinary Microbiology*, Q1 with an impact factor of 3,293, published by Elsevier with the author Drh Supriyono, MSi, PhD from the Department of Animal Diseases and Veterinary Health FKH IPB University.

IPB Lecture Invent Metal-based Biomedical Implants for Fracture Management

Metal-based biomedical implants for fracture management have been developed to be absorbable by the body. Utilization of metal absorbed by the body has many benefits which are not limited to not needing re-surgery to take implants, but also to reduce the risk of death due to re-surgery. The mechanism of absorption of metal degradation products by the body is described in detail through a review paper written together with researchers from international cooperation. The results of this study have been published in the *Biotechnology Journal*, Q1 with an impact factor of 4,677 published by John Wiley & Sons, Inc. with the author Drh Mokhamad Fakhurul Ulum, MSi, PhD from the Department of Clinic, Reproduction and Pathology, FKH IPB University.



13 IPB Lecture Invent The Development of a Pyroplasmosis Rapid Test in Horses



Genetic manipulation of the animal disease *Theileria equi* for the development of a rapid test of pyroplasmosis in horses is the result of a multinational collaboration with collaborators from Japan and Mongolia. *Theileria equi* causes serious blood loss in horses causing stunted growth, decreased body weight, decreased performance, and reduced reproductive capacity. Infected animals may remain as carriers of the parasite (career) for a long time and act as a source of infection. Through this innovation, diagnosis becomes faster so that treatment becomes more precise. The results of this study have been published in Scientific Report, Q1 with an impact factor of 4,379 published by Nature with the author Drh Arifin Budiman Nugraha, MSi, PhD from the Department of Animal Diseases and Veterinary Health FKH IPB University

14 Sargatea: Natural Mix Marine-Herbal Drink

The Center for the Study of Coastal and Ocean Resources and the Department of Aquatic Products Technology of IPB University, with Science Techno Park IPB University in the 2021 Prospective Innovation Program and Development of Functional Beverage Products, researched Sargassum: a natural mix of marine herbal drink made from Sargassum.

The natural mixture formulation of Sargatea containing Sargassum leaf extract, secang, and telang is expected to produce herbal drinks beneficial for maintaining health. This high-antioxidant drink mix is efficacious in lowering blood cholesterol, hypertension, diabetes mellitus, cataracts, rheumatoid arthritis, cardiovascular, respiratory diseases, cleansing the blood, antidiabetic, and treating diarrhea. There are three flavors of Sargatea, namely ginger, lemon, and lemongrass.



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<https://ipb.ac.id/news/index/2021/08/hilirisasi-34-inovasi-ipb-university-berhasil-mendapatkan-bantuan-dana-sebesar-60-milyar-rupiah/0998c7c9ec64e282180a7b839d44d3e8>



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Campus Operation

15 SIMPATIK: Integrated COVID-19 Case Monitoring System

The COVID-19 pandemic has hit Indonesia since March 2020 until now. For this reason, a monitoring system (surveillance) of COVID-19 cases is needed so that all cases that occur at the FVM IPB University can be identified and the necessary control actions can be taken. The Integrated Monitoring System for COVID-19 Cases of the Faculty of Veterinary Medicine, IPB (SIMPATIK COVID-19) is a COVID-19 case surveillance system that involves reporters called "data collectors" in every class of students, departments and units at FVM IPB University. Each data collector reports daily cases of their respective groups no later than 6 p.m every day to SIMPATIK, which is connected to the website of FVM IPB University so that the number and graph of cases can be seen on the website. FKH IPB has also prepared various Standard Operating Procedures (SOP) for controlling COVID-19, such as SOP for lectures, practicum, and others. Health protocol facilities and infrastructure and markers and directions are provided to minimize the transmission of COVID-19 at FVM. The SIMPATIK system has been implemented since August 2020. The benefit of this program is to identify COVID-19 cases of all civitas academia of FVM IPB University so that the necessary control can be carried out immediately. The output of this program is the COVID-19 case report which is displayed on the FVM IPB University website.



16

Provision of Health Protocols and Hybrid Class

The pandemic condition requires the entire academic community of the IPB University Business School to carry out the Health Protocol following the Covid-19 Task Force policy while in the Campus area. The management of SB-IPB provides facilities and infrastructure to support activities following Health protocol policies, including procurement of QR PeduliLindung scan banners, markers in queues, automatic hand sanitizer, and other Health Protocol tools. In addition, the management also provides facilities and infrastructure to support limited face-to-face meetings (PTM) using the Hybrid method, where learning is carried out using online and offline methods. Providing process is carried out every day at the Business School of IPB University.



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17 Facilities from Faculty of Veterinary Medicine to Improve Good Mental Health

The Green Veterinary Program is one of the efforts of FVM IPB University to utilize land that has not been utilized for a long time by improving the aesthetics and beauty of the environment, employee welfare, and refreshing of the visitors. FVM IPB University built Garden of “Bunda Cantik” (Buntik) Agrianita that was initiated by "Bunda Cantik" of the FVM IPB University. Buntik garden is planted with various vegetations such as tubers, crystal guava, chili, peanuts, herbal-medicine plants (ginger, turmeric, kencur, black turmeric etc.), vegetables (spinach, kale, chayote, and eggplant) and various kinds of decorative plants (miana).

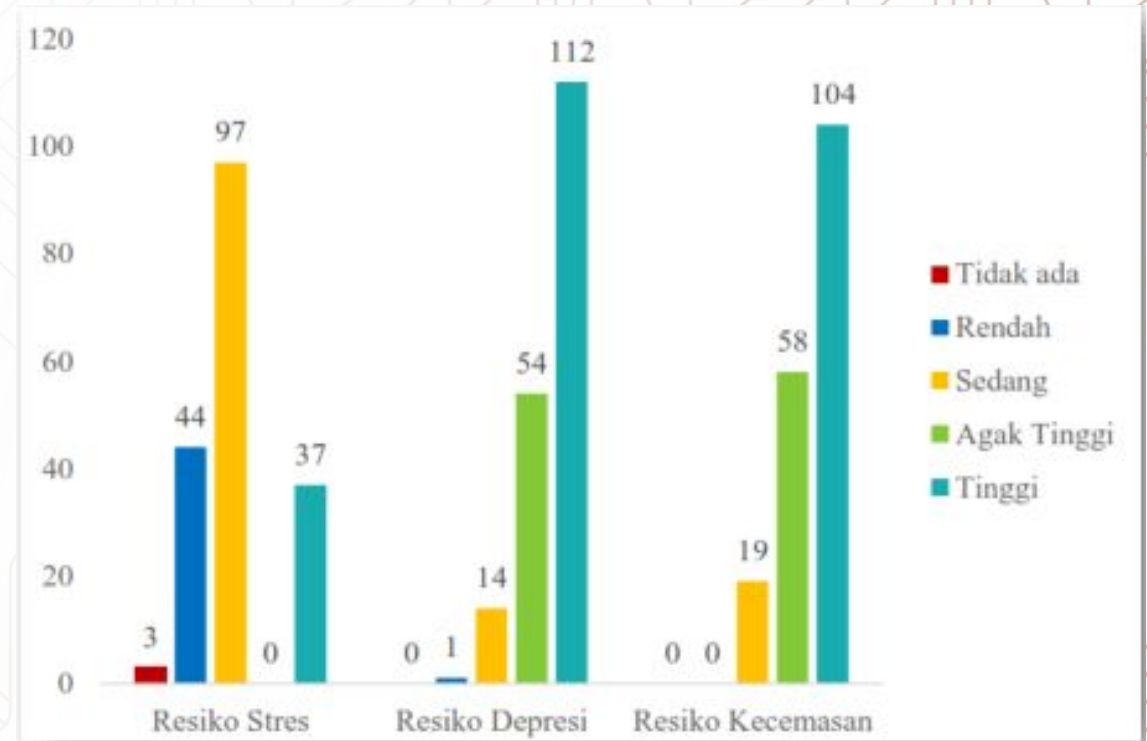
FVM IPB University also built the SKHB Triangle Park, which was prepared as a refreshing place for the FVM academic community. Learning activities can be carried out in the park with internet wifi facilities. FVM carried out efforts to provide clean water facilities and also sports facilities by re-functioning the FVM IPB Univeristy lake.

Physical and mental health can be maintained by exercise, therefore FVM built the Equestrian Park of FVM IPB University. The Equestrian Park is located in the Ruminant Rehabilitation Unit and was inaugurated on October 10, 2021. Other sports facilities are the FVM IPB University outdoor hall which can be used as a place to exercise badminton as well as student and faculty activities



18 Mental Health Care: Facilitating Students to be Agile Learners

The COVID-19 pandemic has had implications for various sectors of life, one of which is education. The policy to stay at home forces students to do online learning and teaching activities. There is a limitation of movement space and increased mental pressure, resulting in a significant increase in saturation. The BEM KM IPB survey results showed that 45% of IPB students experienced disturbances in the form of boredom, tiredness, did not want to do any activities, and lost interest. The same thing was conveyed in the momentum of the dialogue between the FEMA leadership and the ormawa at FEMA. Students stated that the majority began to feel bored in online teaching and learning activities.



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Community Development

19 Safe Sacrificial Animal On Eid Al Adha During The Second Wave Of The Covid Pandemic Area

Implementation of Qurban ritual in the Covid-19 Pandemic era activity was carried out in collaboration between the Indonesian Women's Congress, the Indonesian Veterinary Wives Association (PIDHI), Indonesian Veterinary Partners, and the Faculty of Veterinary Medicine (FVM) IPB University. The webinar was held on Thursday, July 8, 2021, via zoom with a total of 329 participants from Kowani, Kowani Member Organizations, PP/PD/PC, PIDHI, BKOW, and GOW. The speakers were KH Miftahul Huda Lc from the Indonesian Ulama Council, Drh. Supratikno, M.Si and Dr Med Vet Drh. Denny Widaya Lukman MSi from FVM IPB University.

The objective of this seminar was to provide information about Qurban's implementation during the Covid19 Pandemic. Slaughtering of sacrificial animals should ideally be carried out in Slaughterhouses. Still, the limited number of slaughterhouses is carried out in areas that the local government has determined, or carried out by the DKM Management, involving many community members. Therefore, people need to get information about the implementation of the Qurban. People need to know how to handle sacrificial animals in terms of animal welfare properly. Furthermore, the stakeholder must understand the conditions for sacrificial animals, assessment of healthy animals, and selection of sacrificial animals that are not disabled and of sufficient age. Other information needed are the criteria of a good location for slaughtering qurban, the procedure to discard cows, goats and sheeps, the procedure to slaughter animals, and the importance of Personal Protective Equipment (PPE) that must be used during the Covid19 Pandemic. Dr Supratikno delivered this material from FKH IPB. Dr Med Vet Drh Denny Widaya Lukman MSi explained the importance of handling qurban meat, related to food hygiene, and the procedure of distributing qurban meat during the Covid19 pandemic.

Eid al-Adha on July 20, 2021 triggered questions about the proper management of sacrificial animals (Qurban) during the COVID-19 pandemic. Agrianita IPB University in collaboration with the Faculty of Veterinary Medicine (FVM) IPB University held a seminar entitled "Study on the Implementation of Safe Sacrifice from Farm to Table in the Era of the COVID-19 Pandemic" (17/07). In his speech, Prof. Arif Satrija, the President of IPB University, mentioned, "We appreciate Agrianita IPB University and the FVM for continuing to inspire the public and provide education. During the pandemic, the most important thing is inspiring and educating each other. So that the public is filled with constructive information and education, which provides added value for all of us. Therefore, this seminar is critical to educate people about carrying out the Qurban properly, healthily, and safely in different situations.



<https://fkh.ipb.ac.id/agrianita-ipb-university-hadirkan-pakar-penyembelih-an-hewan-kurban/>



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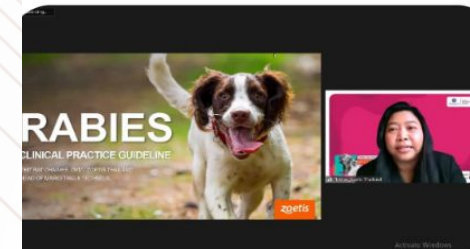


FVM IPB UNIVERSITY IMPROVES UNDERSTANDING OF RABIES CONTROL

The World Rabies Day commemoration event organized by the Faculty of Veterinary Medicine IPB University aims to provide socialization about Rabies, including its prevention, treatment, and control strategies. This activity aims to strengthen the collaboration between universities, government and private sector, and to increase the understanding and support of the community, so that the target for Indonesia to be free of Rabies by 2030 can be achieved. The theme of World Rabies Day was "Rabies: Fact, Not Fear". The World Rabies Day is campaigned globally every 28 September.

The event was held in two parts. The first part was held offline on September 28, 2021, at the Agrianita Gardens of FVM IPB and the Teaching Animal Hospital of FVM IPB, Darmaga Campus of IPB Bogor. The activities included: Rabies Education, Pet Animal Feed Education, Free Rabies Vaccination, Dog and Cat Feed Distribution, and Photo Contest with pets that have been vaccinated against Rabies, located at the Agrianita Gardens, FVM IPB

The second part of the event was an International Webinar on October 2, 2021 and was the event's highlight. The International Webinar about Rabies, which presents three extraordinary presenters, was responded with high enthusiasm of the participants. Around 400 participants from across Indonesia attended this webinar. The first speaker was Mr. Luuk Schoonman, PhD (FAO ECTAD Team Leader AI), presenting "Integrated Bite Management" material. The second speaker was Dr. drh. Nuryani Zainuddin, M.Si (Directorate of Animal Health) with the material entitled "Rabies Control Strategy in Indonesia", and the third speaker was Thitirat Chaimee, DVM (Zoetis) with the material entitled "Rabies Vaccine".



https://www.youtube.com/watch?v=xXJI_eAwMtQ&t=1835s

<https://www.youtube.com/watch?v=IVs-pmwevpU>

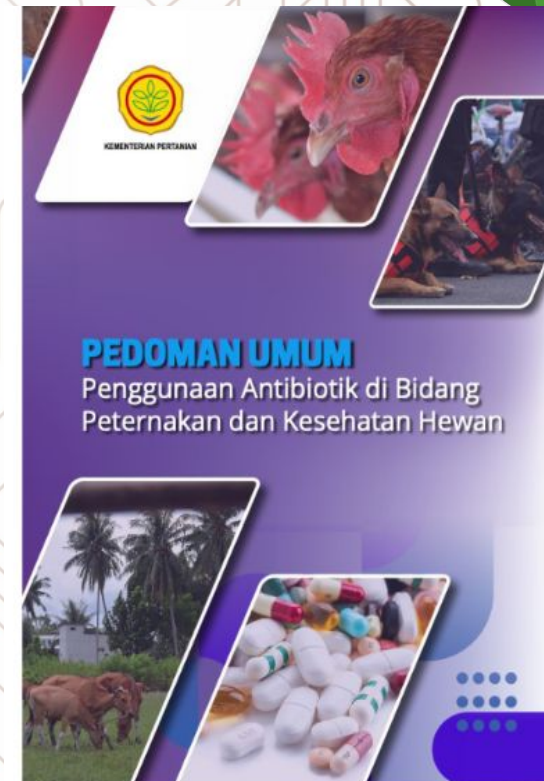
<https://ipb.ac.id/news/index/2021/09/peringati-world-rabies-day-fkh-ipb-university-gelar-vaksinasi-rabies-gratis/2001b9f0664c69810030ad90ab901967>



FVM IPB UNIVERSITY DEVELOPING GUIDELINES FOR THE USE OF ANTIBIOTICS IN LIVESTOCK AND ANIMAL HEALTH

As a tropical country, the climate in Indonesia supports the growth of microbes, especially pathogenic microbes. Efforts to overcome pathogenic microbes include the administration of antibiotics. The use of antibiotics in animal husbandry and animal health is growing rapidly. Inappropriate use of antibiotics, including inappropriate antibiotic combinations, can trigger cross-resistance in bacteria. Serious efforts are highly necessary to manage antibiotics stewardship according to the needs and aspects of their intended use.

The Directorate General of Livestock and Health in collaboration with FAO ECTAD Indonesia, developed general guidelines for the use of antibiotics in animal husbandry and animal health. The guidelines, which were compiled in 2020, can finally be finalized and published in 2021. The experts involved in preparing the guidelines were academicians (Universities), the Indonesian Veterinary Association (PDHI), Non-Governmental Organizations, and other government agencies. The experts from FVM IPB involved were Dr. Dr. Andriyanto, MSi, Dr. Dr. Aulia Andi Mustika, MSi, and Drh. Min Rahminiwati, MS, PhD, all three are teaching staff of the Division of Pharmacology & Toxicology, Department of Anatomy, Physiology, and Pharmacology FVM – IPB University. The developed guidelines were for all stakeholders in using antibiotics stewardship, using antibiotics wisely and responsibly, controlling the rate of antibiotic resistance, and guidelines for law enforcement in the use of antibiotics in animal husbandry and animal health. It is hoped that the guideline can help the role of veterinarians and other agencies in determining the use of appropriate antibiotics to minimize the occurrence of antimicrobial resistance and residues in food products of animal origin.



Stunting Counseling for Pregnant Women and Toddlers at Risk in Ramukaa : Lingkar Desa, Dramaga Campus of IPB

Situgede Village, West Bogor District, is located in the western part of the IPB Dramaga campus. It has 8,557 people, and the primary income is labor. Kampung Ramukaa RW 03 is part of the Situgede Village and the object of this activity program. Counseling for pregnant women in parenting infants and toddlers is a routine activity carried out by the village every month. The involvement of LPPM IPB, students, and lecturers is a community service highly expected by the villagers.

The case of stunting in children under five is still a health problem that needs to be watched out for in Indonesia. Data on the prevalence of stunted children under five submitted by WHO, 2018 states that Indonesia is included in the third country (36.4%) with the highest prevalence in the South-East Asian Region after Timor Leste (50.5%) and India (38.4%). Stunting needs to be seen as an important problem to be overcome because it is related to the nation's generation and the welfare of mothers and children. Stunting is a condition that describes undernutrition status during the growth and development of children from the beginning of life, which is presented with a z-score based on the parameters of height, weight, and age. Poverty, sanitation, environmental health, education, and low maternal knowledge have consequences for stunting.

The process of implementing community service activities is a resource and facilitator in stunting counseling. The object is mothers who have the potential for stunting risk of toddlers in Ramukaa Village, RW 03, Situgede Village, West Bogor District, Bogor City. Participants included 101 children under five and infants accompanied by their parents (mothers), and 12 pregnant women. This activity is carried out in situ posyandu and periodically every month offline. Direct meetings include giving directions/pulpit lectures on processing frugal, clean, and nutritious food, teaching how to take care of babies and toddlers, distributing nutritious food and drinks, providing vitamin A and facilitating toy education. Other activities carried out are learning assistance for kindergarten and elementary school children in learning to read, write and do the math. In general, the involvement carried out is a direct implementation in supporting government programs in providing services to the community and supporting the implementation of government tasks in developing superior human resources in the village.



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