University of Islam Malang

DECEMBER 2023

PROGRAM BOOK

THE 2ND INTERNATIONAL CONFERENCE ON SCIENCE, TECHNOLOGY, AND ENGINEERING FOR SUSTAINABLE DEVELOPMENT

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WELCOME ADDRESS OF THE RECTOR OF UNIVERSITAS ISLAM MALANG

Assalamu'alaikum Warahmatullahi Wabarakatuh
Greeting from Universitas Islam Malang (UNISMA), Indonesia!
·Respectable our keynote speakers from Indonesia, Australia, South Korea, Malaysia, Turkey, Russia, Uzbekistan, and Thailand
·Respectable the conference committee, administrators, faculty members
·Ladies and gentlemen

On behalf of Universitas Islam Malang (UNISMA), I am pleased to welcome our keynote speakers, presenters, and participants of this International Conference on Science, Technology, and Engineering for Sustainable Development (ICOSTES) 2023. Welcome to Universitas Islam Malang, Indonesia.

UNISMA Malang is now in the milestone of a entrepreneurial university and moving forward to world-class university milestones. Our Motto is from Nahdlatul Ulama for Indonesia and World Civilization.
We are now entering the era of super-smart society (society 5.0). This society 5.0 is a concept of a human-centered and technology-based society. It is expected to minimize the negative impact of robotic and artificial intelligence. It is as a response to the industrial revolution 4.0, to balance life between technology and more human quality of human life.

UNISMA Malang has strengthened and developed its national and international collaboration and reputation through excellent services, achievements, and joint global programs in this freedom of learning era. Therefore, this international conference is significant for us to share state of the art in religious and educational sciences, engineering, medical, natural sciences, and economic, social, and legal studies for Humanity and Sustainable Development in Society 5.0 Era. It is also a perfect moment for us to develop our networking and collaboration with scholars across the nation and globe.

On behalf of UNISMA Malang, we would like to thank the keynote speakers, presenters, and participants for joining this international conference, especially those coming from overseas: Brunei Darussalam, Malaysia, Philippines, United Emirates Arab, Russia and Azerbaijan. We also deliver our appreciation to anyone that I cannot mention one by one who has supported this conference, especially the organizing committee from UNISMA Malang as the Host who have prepared, organized, and conducted this international conference.

We hope we can participate in all the conference programs and benefit from them for personal and professional development purposes. We also look forward to your participation in our next year's international conference at UNISMA in Malang, known as the Paris of East Java, and the City of Education and Tourism in Indonesia. Thank you very much.

Wallahul Muwafiq Ila Aqwamith Thoriq
Wassalamu'alaikum Warahmatullahi Wabarakatuh

Rector of Universitas Islam Malang
Prof. Dr. H. Maskuri, M.Si

WELCOME SPEECH FROM THE CHAIR OF THE COMMITTEE

The honourable Rector of UNISMA,
The respectable deans, vice deans, heads of departments at UNISMA;
The respectable Plenary Speakers, Parallel Speakers, and Participants;
The dearest students of UNISMA who join this conference;
Ladies and Gentlemen.

Assalamu'alaikum War Wab.
First of all, let's bow our head to than Allah SWT, the Almighty, who has granted us with his blessing and mercy so that we can now get together to join this prestigious international conference. Secondly, sholawat and salam should go to out prophet Muhammad SWT, who has guided us with ad dinul Islam.

Ladies and Gentlemen,
This year's International Conference on Science, Technology, and Engineering for Sustainable Development (ICOSTES) is actually the second, carried out at UNISMA as the first one was held in 2018. This conference is held in order to create a forum for academicians, professionals, and researchers to share their knowledge and expertise and to present their research findings related to their field of study. As the theme of the conference implies, it covers such topics as agriculture and food science, biodiversity and conservation, climate and ecology, energy, health and environmental health, engineering, and technology-based practices of socioeconomics, law, and education. I am very happy to let you know that there are 85 papers to be presented in this years' ICOSTES conference with presenters coming from 7 (seven) countries, including Indonesia, Brunei Darussalam, Malaysia, Philippines, United Emirates Arab, Russia and Azerbaijan.

Ladies and Gentlemen,

Then, on behalf of the committee. I would like to thank the Rector of UNISMA, who has provided us with everything we need to succeed this academic event. I would also like to express my high appreciation to the speakers of both plenary and parallel sessions, who have been willing to share their knowledge and expertise for the shake of the development of their related field of study. Your contribution must also be of great significant for community development. Last but not least, I would like to thank the committee, who have been trying hard days and nights to prepare everything for the success of the conference.

Finally, I do hope that this conference be an excellent academic forum for developing our professionalism in our own field. I wish you all the best and enjoy the conference. Thank you.

Wassalamu'alaikum War. Wab.

Malang, 6 December 2023

Prof. Drs. Junaidi Mistar, M.Pd., Ph.D

Chair of ICOSTES Committee

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CONFERENCE SCHEDULE

The Second International Conference on Science, Technology, and Engineering for Sustainable Development (ICoSTES)
Online through Zoom Meeting
Zoom Meeting ID: 729 337 3671 | Passcode: unisma

Wednesday, 6 December 2023

Time	Activity
08.00 – 08.30	**Participant Registration**
08.30 – 09.00	**Opening Ceremony**
09.00 – 11.00	Plenary Session I: Interconnecting Engineering, Medical, and Natural Sciences for Sustainable Development of Humanity **Speaker 1:** Agriculture **Assoc. Prof. Dr Hajah Rose Binti Abdullah** Dean of Faculty of Agriculture, University of Islam Sulthan Sharif Ali, Brunei Darussalam **Speaker 2:** Health and Medicine **Prof. Dr. Mohamad Khairuddin Abdul Wahab** Dean of International Medical School, Management Science University, Malaysia **Speaker 3:** Electrical Engineering **Associate Prof. Dr. Addie Wahyudie** Department of Electrical Engineering, United Arab Emirates University, Abu Dhabi **Speaker 4:** Biological Sciences **Assoc. Prof. Dr. Irada Khalilova** Rector of Khazar University
11.00 – 12.30	**Parallel Session I (Break Out Room)**
12.30 – 13.30	**Break**
13.30 – 15.00	**Parallel Session II (Break Out Room)**
15.00 – 15.15	**Break**
15.15 – 17.15	Plenary Session II: Interconnecting Engineering, Medical, and Natural Sciences for Sustainable Development of Humanity **Speaker 1:** Mechanical Engineering **Prof. Dr. Andri Andriyana** Mechanical Engineering, Universitas of Malaya, Malaysia **Speaker 2:** Animal Husbandry **Prof. Dr. Abdul Razak Alimon** University Putra Malaysia, Malaysia **Speaker 3:** Medicine **Assoc. Prof. Ann Lysova, Ph.D** Medical University Reaviz, Samara, Russia **Speaker 4:** Mathematics **Prof. Hadi Susanto, Ph.D** Associate Chair for Graduate Studies Khalifa University, United Arab Emirates
17.15 – 17.30	**Closing**

PARALLEL SESSIONS SCHEDULE

The Second International Conference on Science, Technology, and Engineering for Sustainable Development (ICoSTES)

SESSION I
Time: 11.00 – 12.30 AM

Room / Moderator	Presenter(s)	Institution	Title
A1 Moderator: **Kurniasih**	**Dwi Susilowati, Lia Rohmatul Maula**	Universitas Islam Malang	ANALYSIS FACTORS INFLUENCING THE DECISION OF APPLE FARMERS TO SWITCH TO OTHER COMMODITIES IN BATU CITY, INDONESIA
	Istirochah Pujiwati	Universitas Islam Malang	USE OF COMPOST TEA IN SONIC BLOOM TECHNOLOGY TO INCREASE PRODUCTIVITY OF SEVERAL VARIETIES OF SOYBEAN (GLYCINE MAX (L.) MERRIL)
	Djuhari	Universitas Islam Malang	CHARACTERIZATION AND POTENTIAL TEST OF INDIGENOUS MICROORGANISMS (IMO) FROM VARIOUS MANURE INOCULANT AS SOIL CONDITIONER
	Sri Hindarti, Arief Joko Saputro	Universitas Islam Malang	DETERMINANTS OF THE DECISION TO SHALLOT FARMING: SOCIO-ECONOMIC PERSPECTIVES IN MALANG DISTRICT
	Masyhuri Machfudz, Nurhidayati, Rini Rahayu Kurnia	Universitas Islam Malang	ANALYSIS OF THE ECONOMIC PROFITS OF CASSAVA AGRIBUSINESS IN MALANG DISTRICT, EAST JAVA, INDONESIA
	Titis Surya Maha Rianti, Lia Rohmatul Maula	Universitas Islam Malang	PRODUCTION RISK ANALYSIS OF CAYENNE PEPPER FARMING AND FARMERS' BEHAVIOR FACING RISK
A2 Moderator: **Septina Dwi Rahmawati**	**Anis Sholihah, Agus Sugianto**	Universitas Islam Malang	RABBIT URINE LIQUID ORGANIC FERTILIZER INCREASES GREEN SPINACH'S GROWTH, YIELD, VITAMIN C CONTENT AND CHLOROPHYLL CONTENT
	Agus Sugianto, Anis Sholihah	Universitas Islam Malang	UTILIZATION OF REJECTED WASTE AS A SUBSTRATE MIXTURE FOR WHITE OYSTERS (PLEOROTUS OSTREATUS) AND EAR MUSHROOMS (AURICULARIA AURICULA L)
	Nurhidayati, Abdul Basit, Sama' Iradat Tito, Anita Qur'ania, Abu Saad Ansari	Universitas Islam Malang; Nano Center Indonesia Research Institute	CHLOROPHYLL CONTENT AND GROWTH DYNAMICS OF RICE (ORYZA SATIVA) PLANT DUE TO APPLICATION OF ZNO NANOPARTICLES ENHANCED COMPOST
	Bambang Siswadi, Nikmatul Khoiriyah, Sovia Oktafioni	Universitas Islam Malang	TECHNICAL EFFICIENCY OF PORANG FARMING ON THE USE OF TUMBER AND FROG TYPES OF SEEDS IN REJOSARI VILLAGE, BANTUR DISTRICT, MALANG DISTRICT USING THE DEA (DATA ENVELOPMENT ANALYSIS) APPROACH
	Novi Arfarita, Anis Rosyidah	Universitas Islam Malang	THE EFFECT OF LIQUID VP3 BIOFERTILIZER ON MUNG BEAN YIELD COMPARED WITH BIOFERTILIZERS SOLD ON THE MARKET
	M Noerhadi Sudjoni, Dwi Susilowati, Dina Kartika Sari	Universitas Islam Malang	THE INFLUENCE OF MOUTH AND NAIL DISEASES ON FINANCIAL HEALTH PERFORMANCE (STUDY AT VILLAGE UNIT COOPERATIVE SUMBER MAKMUR NGANTANG MALANG)

Room / Moderator	Presenter(s)	Institution	Title
A3 Moderator: **Dzul Fikri**	**Efendi S Wirateruna, Priyatin**	Universitas Islam Malang	PROTOTYPE DESIGN OF AUTOMATIC IRRIGATION SYSTEM CONTROL BASED ON IOT USING SOLAR ENERGY
	Akhmad Faruq Alhikami, Zainul Arifin, Chrisna Yuda Hartato, Ena Marlina	Universitas Islam Malang	DEVELOPMENT OF REUSEABLE BIO-COMPOSITE ANIMAL BONE-PAPAYA LEAF CATALYST FOR SUSTAINABLE BIODIESEL PRODUCTION
	Cepi Yazirin, Dewi Izzatus Tsamro	Universitas Islam Malang; Universitas Merdeka Malang	OPTIMIZATION PARAMETER OF STIR CASTING ON MECHANICAL PROPERTIES OF AL-SI REINFORCED BY NANOMATERIAL
	Anita Rahmawati	Universitas Islam Malang	SANITATION TECHNOLOGY AS DEFECATION-FREE EFFORTS
	Warsito, Anita Rahmawati	Universitas Islam Malang	THE INFLUENCE OF GREEN BUILDING FACTORS ON HOUSING DEVELOPMENT DECISIONS
A4 Moderator: **Eko Suhartoyo**	**Riswan Sepriyatno**	Universitas Islam Malang	INVESTIGATION OF THE SIZE OF THE CARBURETOR VENTURI HOLE IN AN INTERNAL COMBUSTION ENGINE USING RON 95 FUEL MIXED WITH BIOETHANOL
	Fawaidul Badri, Mohammad Taqijuddin Alawiy	Universitas Islam Malang	AUTOMATIC MASK DETECTION SYSTEM AND THERMAL SCANNER TO MEASURE BODY TEMPERATURE BASED ON DEEP LEARNING
	Anang Habibi	Universitas Islam Malang	HOME WINDOW AND DOOR CONTROL SYSTEM BASED ON ISTIWA TIME AS RECOMMENDED BY HADITH
	Eko Noerhayati, Soraya Norma Mustika, Efendi S. Wirateruna	Universitas Islam Malang; Universitas Negeri Malang	AN ANALYSIS OF IRRIGATION SLUICE PERFORMANCE IN IOT-BASED OPEN CANALS
	Fawaidul Badri, Muhammad Taqiyyuddin Alawiy	Universitas Islam Malang	DESIGN OF AN ANDROID-BASED E-SMART APPLICATION FOR MEMORIZING THE QUR'AN USING THE RAD METHOD
A5 Moderator: **Febti Ismiatun**	**Etik Sulistiowati Ningsih, Erwiantono, Qoriah Saleha, Heru Susilo**	Mulawarman University	STRATEGY FOR INTEGRATING INLAND FISHERIES INTO THE MANAGEMENT OF THE CENTRAL MAHAKAM WATERSHED
	Muhammad Ilyas Rabsani, Supriyadi Wibowo	Sebelas Maret University	A NEW GENERALIZED FRACTIONAL DERIVATIVE FOR LAPLACE EQUATION
	Alberth Soplanit, Merlin K Rumbarar, Niki E Lewaherilla	National Research and Innovation Agency	SAGO (METROXYLON SAGO, ROTTB) GENETIC RESOURCES IN JAYAPURA REGENCY: A CASE STUDY IN YOKARI DISTRICT
	Qodriyah Umayyi, Eko Setiawan, Mohammad Syafii	Universitas Trunojoyo Madura	CHARACTERIZATION OF COWPEAS (VIGNA UNGUICULATA) LOCAL MADURA
	Catur Wasonowati, Mustika Tripatmasari, Moh. Dwi Zainol Akbar	Universitas Trunojoyo Madura	CONTENT OF BIOACTIVE COMPOUNDS IN HERBAL CHILI (PIPER RETROFRACTUM. VAHL) WITH CLIMBING POLES OF MORINGA TREE (MORINGA OLEIFERA LAMK)
	Aji Sutopo, Siti Erika, Slamet Supriyadi, Fahmi Arief Rahman	Universitas Trunojoyo Madura	EFFECT OF BIOCHAR-COATED UREA ON GROWTH AND CHLOROPHYL CONTENT OF CORN GROWN ON SANDY SOIL

Room / Moderator	Presenter(s)	Institution	Title
A6 Moderator: **Noni Mia Rahmawati**	**Yulfita Farni, Zurhalena Zurhalena**	Jambi University	EFFECT OF COW MANURE AND BOILER ASH ON BULK DENSITY, TOTAL PORE SPACE AND GROWTH OF RED GINGER IN ULTISOL
	Mustika Tripatmasari, Catur Wasonowati, Alvia Ari Damayanti, An Nisa Fitri Wahyu Utami	Universitas Trunojoyo Madura	EXPLORATION AND MORPHOLOGICAL CHARACTERIZATION OF JASMINE PLANT TO OBTAIN QUALITY RAW MATERIALS AT THE PRODUCTION CENTER IN BURNEH DISTRICT, MADURA
	Muh Yusuf Idris, Yunus Musa	Universitas Hasanuddin; Andijamma Palopo University	GROWTH RESPONSE OF RICE PLANTS IN RICE FIELDS CONTAINING HIGH GEOGENIC NICKEL
	Bagus Kurniawan, Dinna Hadi Sholikah, Abdul Wahid Hasyim, Mochtar Lutfi Rayes, Soemarno	University of Brawijaya	IDENTIFICATION OF THE DISTRIBUTION OF SOIL SUB-GROUP TYPES IN THE MESOLANDFORM OF SMALLHOLDER COFFEE PLANTATIONS IN THE KLETEK SUB-WATERSHED
	Sitti Maryam Yasin, Elkawakib Syam'Um, Burhanuddin Rasyid	Universitas Hasanuddin	LOCAL HIGHLAND RICE ENDOPHYTIC BACTERIA AND THEIR POTENTIAL TO INCREASE PLANT GROWTH
A7 Moderator: **Sonny Elfianto**	**Nur Hamidah, Catur Wasonowati, Mustika Tripatmasari**	Universitas Trunojoyo Madura	GROWTH OF HERBAL CHILLI CUTTNGS (PIPER RETROFRACTUM VAHL.) AT VARIOUS LEVELS OF SHADING DENSITY AND WATER VOLUMES
	Desi Permata Sari, Bramantyo Airlangga, Sumarno	Institut Teknologi Sepuluh Nopember	PRODUCTION OF MICRO/NANOCELLULOSE FROM CABBAGE VEGETABLE WASTE (SOFT LIGNOCELLULOSIC) AS RAW MATERIAL FOR DRUG CARRIER
	Annisa Ridha Nahara, Erlinda Ningsih, Sri Rachmania Juliastuti	Institut Teknologi Sepuluh Nopember	SILICA EXTRACTION FROM SIDOARJO MUD USING KOH-K2CO3 ALKALINE COMBINATION
	Etik Sulistiowati Ningsih, Erwiantono, Qoriah Saleha	Mulawarman University	STRATEGY FOR INTEGRATION OF INLAND PUBLIC FISHERIES INTO THE MANAGEMENT OF THE MAHAKAM SECTION WATERSHED MIDDLE: WATERSHED SOCIO-ECOLOGICAL SYSTEMS APPROACHES, SWOT AND QSPM
	Haryo Triajie, Abdus Salam Junaedi, Febi Pramitasari	Universitas Trunojoyo Madura	STUDY OF GROWTH PATTERNS AND BIOLOGY OF GREEN CRAB (THALAMITA CRENATA) FROM THE MANGROVE FOREST OF LABUHAN VILLAGE, SEPULU DISTRICT, BANGKALAN, EAST JAVA
	Umi Masmu Ah, Mustika Tripatmasari, Catur Wasonowati	Universitas Trunojoyo Madura	THE EFFECT OF PLANT MEDIA COMPOSITION AND PGR ON THE GROWTH OF JASMINE (JASMINUM SAMBAC L.) PLANT CUTTINGS

PARALLEL SESSIONS SCHEDULE

The Second International Conference on Science, Technology, and Engineering for Sustainable Development (ICoSTES)

SESSION II
Time: 13.30 – 15.00 AM

Room / Moderator	Presenter(s)	Institution	Title
B1 Moderator: **Kurniasih**	**Badat Muwakhid, Rifa'i, Hilarius Yosef Sikone, Muji Astutik**	Universitas Islam Malang; Universitas Kahuripan Kediri; Catholic University of Indonesia Saint Paul Ruteng; Universitas Gadjah Mada	STUDY OF THE UTILIZATION RATE OF ORGANIC WASTE SILAGE AS A CONSTITUENT OF FEED ON THE CONSUMPTION OF THIN-TAILED LAMBS
	Brahmadhita Pratama Mahardhika, Umi Kalsum, Nisa'us Sholikah, Dedi Suryanto	Universitas Islam Malang	HEMATOLOGY DAN BLOOD CHOLESTEROL PROFILE OF LAYING HENS TREATED WITH PROBIOTIC LACTOBACILLUS SALIVARIUS SOLUBLE IN DRINKING WATER AT VARIOUS DOSES
	Inggit Kentjonowaty, Brahmadhita Pratama Mahardhika	Universitas Islam Malang	HEMATOLOGY AND BLOOD METABOLITES OF ETAWA CROSSBREED DAIRY GOATS FED CONTAINING MENGKUDU WASTE (MORINDA CITRIFOLIA L) IN VARIOUS DOSES
	Dian Eka Darmayani, Umi Kalsum, Nur Irwan Supriyanto, Dyah Cahyaning Martapuri	Universitas Islam Malang	RESPONSE OF PRIMER IMMUNE ORGAN SIZE OF COTURNIX JAPONICA TREATED WITH FEED CONTAINING LEMURU FISH OIL AND DRINKING AFRICAN LEAF JUICE
	Nisa'us Sholikah, Nur Irwan Supriyanto, Dian Eka Darmayani, Dyah Cahyaning Martapuri	Universitas Islam Malang	PHYSIOLOGICAL RESPONSE OF JAPANESE QUAIL (COTURNIX JAPONICA) THAT WERE GIVEN FEED CONTAINING LEMURU FISH OIL AND AFRICAN LEAF JUICE IN VARIOUS DOSES
B2 Moderator: **Septina Dwi Rahmawati**	**Umi Kalsum, Farid Wadjdi, Rizal Syafi'i**	Universitas Islam Malang	THE EFFECT OF THE USES OF WATER-SOLUBLE ACIDIFIER AND SAMPLE MEASUREMENT TIME ON BROILER CHICKEN AMMONIA LEVELS
	Nurul Humaidah, Muhammad Farid Wadjdi, Sri Susilowati	Universitas Islam Malang	POTENTIAL OF HERBAL IMMUNE PROBIOTICS AS IMMUNITY BOOSTERS IN KUB 2 CHICKENS
	Badat Muwakhid, Umi Kalsum, Rifa'i	Universitas Islam Malang; Universitas Kahuripan Kediri	EFFECT OF TRICHODERMA VIRIDE CONCENTRATION AND INCUBATION TIME ON CHEMICAL CONTENT OF AMMONIATED CORN STRAW
	Oktavia Rahayu Puspitarini, Inggit Kentjonowaty, Rasbawati	Universitas Islam Malang	ORGANOLEPTIC QUALITY AND TOTAL LACTIC ACID BACTERIA OF COW'S MILK KEFIR PROCESSED WITH DIFFERENT TYPES OF MILK
B3	**Yoni Rina Bintari**	Universitas Islam Malang	ANTI-INFLAMATORY ACTIVITY OF ETHANOL EXTRACT OF CANANGA

Room / Moderator	Presenter(s)	Institution	Title
Moderator: **Dzul Fikri**			ODORATA AGNAIST INHIBITION OF BOVINE SERUM ALBUMIN (BSA) DENATURATION
	Erna Sulistyowati	Universitas Islam Malang	TOXICITY ASSAY OF CENTELLA ASIATICA ON HUMAN VEIN ENDOTHELIAL CELLS CULTURE INDUCED BY ANGIOTENSIN II
	Nurul Faridah, Sri Herlina, Marindra Firmansyah	Universitas Islam Malang	PROFILE OF DETERMINANT FACTORS OF INDEPENDENT STUDY READINESS IN MEDICAL STUDENTS
	Shinta Kusumawati, Husnul Khotimah, Farhad Balafif, Agustina Tri Endharti, Tri Yudani Mardining Raras	Universitas Islam Malang; Universitas Brawijaya	TOWARDS INCLUSIVE HEALTH: EXPLORING MICRORNA-7 AS A MOLECULAR TARGET IN PARKINSON'S DISEASE WITHIN THE CONTEXT OF SUSTAINABLE DEVELOPMENT GOALS
	Dini Sri Damayanti, Annisa Iktiarani, Andika Purnama Gimnastiar	Universitas Islam Malang	STUDY COMPUTATIONALLY: COWPEA SEEDS (VIGNA UNGUILATA) INHIBIT THE ACTIVITY OF THE ENZYME B SECRETASE AND BUTYRYLCOLIENSETERASE AS AN ANTI-ALZHEIMER
	Angga Dian Pratama, Nugroho Wibisono, Ike Widyaningrum	Universitas Islam Malang	EFFECT OF VARIATIONS IN CATIONIC AND NONIONIC SURFACTANTS IN MEFENAMIC ACID EMULSION ON ANTI-INFLATION ACTIVITY
B4 Moderator: **Eko Suhartoyo**	**Shania Maulidhya, Husain Latuconsina, Hamdani Dwi Prasetyo**	Universitas Islam Malang	RELATIONSHIP BETWEEN WATER QUALITY PARAMETERS AND PHYTOPLANKTON ABUNDANCE IN INTENSIVE VANNAMEI SHRIMP CULTIVATION IN SITUBONDO, EAST JAVA
	Hasan Zayadi, Luchman Hakim, Sudarto, Jati Batoro	Universitas Islam Malang; Universitas Brawijaya	PLANT DIVERSITY ALONG THE CORRIDOR OF COFFEE-BASED AGROFORESTRY LAND IN THE BUFFER AREA OF BROMO TENGGER SEMERU NATIONAL PARK (BTSNP)
	Nour Athiroh AS, Nurul Jadid Mubarakati	Universitas Islam Malang	MOLD HAUSTORIUM OF MANGO MISTLETOES (DENDROPHTHOE PENTANDRA (L.) MIQ)
	Nour Athiroh AS	Universitas Islam Malang	THE EFFECT OF TEA AND MANGO MISTLETOE EXTRACTS COMBINATIONS ON HYALINIZATION OF KIDNEY GLOMERULI IN HYPERTENSION RATS MODEL
	Salsabila	Universitas Islam Malang	ANTI-INFLAMMATORY EFFECT OF EMPRIT GINGER RIZHOME ETHYL ACETATE EXTRACT (ZINGIBER OFFICINALE VAR. AMARUM) TOPICALLY ON CARRAGEENAN-INDUCED RAT PAW EDEMA
	Emira Aulia Aqsha	Universitas Islam Malang	DECOCTIONS OF CENTELLA ASIATICA, JUSTICIA GENDARUSSA, AND IMPERATA CYLINDRICA ARE ABLE TO REDUCE THE NUMBER OF HYALINE GLOMERULI AND PARS CORTICAL INTERSTITIAL TISSUE IN KIDNEY OF SPONTANEOUSLY HYPERTENSIVE-MODEL RA
B5 Moderator: **Febti Ismiatun**	**Rafida Zida Tamama**	Universitas Islam Malang	IN VIVO TEST OF N-HEXANE EXTRACT OF EMPRIT GINGER (ZINGIBER OFFICINALE VAR. AMARUM) AS A TOPICAL ANTI-INFLAMMATORY
	Nurul Husnawiyah	Universitas Islam Malang	THE EFFECT OF SOLID LIPID TYPE ON THE PHYSICAL AND CHEMICAL PROPERTIES OF

Room / Moderator	Presenter(s)	Institution	Title
			NANOSTRUCTURED LIPID CARRIERS (NLC) DRUG DELIVERY SYSTEMS
	Sita Aminah	Universitas Islam Malang	EFFECT OF VARIANT IN CATIONIC AND NONIONIC SURFACTANS IN MEFENAMIC ACID CREAM ON ANTIINFLAMASI ACTIVITY
	Feris Three Nanda Shelvina	Universitas Islam Malang	ANTI-INFLAMMATORY ACTIVITY OF RED SEAWEED (GRACILARIA VERRUCOSA) INFUTION AND DECOCTION AGAINST PROTEIN DENATURATION INHIBITION
	Sonny Elfiyanto, Iklila Ummu Sam'ah	Universitas Islam Malang; SMP Islam Fatahillah Singosari	EXAMINING THE ROLE OF STUDENTS' INTERACTION DURING AN ONLINE PEER ASSESSMENT ACTIVITY
	Angga Dian Pratama	Universitas Islam Malang	EFFECT OF VARIANT IN CATIONIC AND NONIONIC SURFACTANS IN MEFENAMIC ACID EMULGEL ON ANTIINFLAMASI ACTIVITY
B6 Moderator: **Noni Mia Rahmawati**	**Nidha Permata Fadillah, Dinna Hadi Sholikah, Abdul Wahid Hasyim, Mochtar Lutfi Rayes, Soemarno**	University of Brawijaya	THE EFFECT OF SHADE PLANTS TYPES ON COFFEE PRODUCTION AT WAJAK SUB-DISTRICT
	Shafira Nur Adiningsih, Sekar Tri Wulan Amelia, Heru Setyawan, Tantular Nurtono, Widyastuti	Institut Teknologi Sepuluh Nopember	THE EFFECT OF SILVER NANOPARTICLE DEPOSITION IN FILM COMPOSITE CELLULOSEGELATINE IN THEIR ANTIBACTERIAL ACTIVITY FOR WOUND DRESSING APPLICATION
	Septiana Laraswati, Catur Wasonowati, Mustika Tripatmasari	Universitas Trunojoyo Madura	THE EFFECT OF VARIOUS PLANTING MEDIA AND TYPES OF FERTILIZER ON THE GROWTH OF HERBAL CHILI CUTTINGS (PIPER RETROFRACTUM VAHL.)
	Pujiati, Mustika Tripatmasari, Catur Wasonowati	Universitas Trunojoyo Madura	THE EFFECT OF WATER INTERVAL AND TYPE OF FERTILIZER ON THE GROWTH OF JASMINE (JASMINUM SAMBAC L.) CUTTINGS
	Dinna Hadi Sholikah, Nabilla Putry Maharani, Abdul Wahid Hasyim, Mochtar Lutfi Rayes, Soemarno	University of Brawijaya	THE RELATIONSHIP OF NDVI ON LAND COVER IN SMALLHOLDER COFFEE PLANTATIONS IN THE KLETEK SUB-WATERSHED
	Teguh Suprianto, Muhammad Hasbi, Febri Hartady	Politeknik Negeri Banjarmasin	HEAT TREATMENT OF CARBON STEEL WITH SODIUM HYPOCHLORITE-BASED COOLANTS FOR ENHANCED SURFACE HARDNESS
B7 Moderator: **Sonny Elfianto**	**Junaidi Mistar**	Universitas Islam Malang	THE INTERFACE OF INDUSTRIAL REVOLUTION 4.0 AND EDUCATION 4.0: IMPLICATIONS FOR ELT RESEARCH AND PRACTICE
	Soni Muhsinin	Intitut Teknologi Bandung	EXPLORING MORPHOLOGICAL AND GENETIC DIVERSITY IN CENTELLA ASIATICA FROM INDONESIAN REGIONS
	Dinna Hadi Sholikah, Muhammad Ridho Rochman, Abdul Wahid Hasyim, Mochtar Lutfi Rayes, Soemarno	University of Brawijaya	ANALYSIS OF SOIL ERODIBILITY INDEX WITH NDSI ON VARIOUS MESO-LANDFORMS OF SMALLHOLDER COFFEE PLANT AT KLETEK SUB WATERSHED

Room / Moderator	Presenter(s)	Institution	Title
	Abdul Malik Aljabar, Munbais Husni Zam Zam, Bowo Winarno	Sebelas Maret University	FIXING ERROR NODE ON TREE TOPOLOGI USING GRAPH COMPUTATION ON FIBER OPTIC PROBLEM
	Sri Rahmawati, Novan Habiburrahman, Novie Ary Priyanti	Cipta Wacana University of Malang	OPTIMIZING TREATMENT PLANNING: ENHANCING PRECISION IN RADIOTHERAPY TREATMENT THROUGH THE ESTIMATION OF HOUNSFIELD UNIT VALUES FROM CT-SCAN DATA CALCULATION
	Tri Puji Lestari Sudarwati, Sri Widyarti, Warsito, M. Sasmito Djati	Akademi Farmasi Surabaya; Universitas Brawijaya	PREDICTING THE POTENTIAL OF MITRAGYNA SPECIOSA AS A MORPHINE SUBSTITUTE USING IN SILICO ANALYSIS

WAVE ENERGY IN A NUTSHELL: CONTROL PERSPECTIVE, DESIGN OF EXPERIMENTAL SETUPS, AND WAVE ENERGY ASSESSMENT IN INDONESIA

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ABSTRACT
This study gives a broad overview of ocean wave energy research. First, a general introduction to wave energy will be provided, which contains a short introduction to various topologies of wave energy converters. Next, a direct drive point absorber is selected among these topologies, and its control principles will be described. Any control strategies for the point absorber need to be tested via an experimental setup. This study proposed two types of experimental setups within the framework of hardware-in-the-loop. The first approach requires a customized power-take-off mechanism and, thus, requires more expensive resources. The second approach offers a cheaper solution for experimental setup. Finally, the wave energy assessment for the water territory of Java Island will be presented. This study decides the potential locations for installing wave energy converters based on the result of time domain analysis and spatial analysis.

Keywords:

ANALYSIS FACTORS INFLUENCING THE DECISION OF APPLE FARMERS TO SWITCH TO OTHER COMMODITIES IN BATU CITY, INDONESIA

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ABSTRACT
This study examined the variables that affected apple growers' decisions to convert to other crops. The study was done in Bulukerto Village and Tulungrejo Village in Bumiaji District, Batu City, Indonesia. The sample size was established based on percentages. The analysis was conducted using the logistic regression equation model. The results showed a significant fit between the equation model and the observed value, indicating that the logistic regression model was workable and suitable for further investigation. Education level (X2), land area (X4), farming income (X5), and maintenance (X6) were factors with significance values of 0.008, 0.000, 0.000, and 0.000 that significantly affected farmers' decisions to transfer from apple growing to other commodities. Following are some ideas put forward by researchers to help farmers sustain apple commodities: 1) farmers should increase their knowledge of apple farming through the non-formal education they participate in, such as training in apple farming maintenance; 2) farmer groups should further expand the reach of their membership; and 3) for the government, incentives for apple farmers to increase the productivity of their orchards could be offered.

Keywords:
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USE OF COMPOST TEA IN SONIC BLOOM TECHNOLOGY TO INCREASE PRODUCTIVITY OF SEVERAL VARIETIES OF SOYBEAN (GLYCINE MAX (L.) MERRIL)

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ABSTRACT
Soybeans are the third main agricultural commodity after rice and corn. Seventy percent of Indonesia's soybean needs are still met by imports. Therefore, serious efforts are needed to increase soybean productivity. One effort to increase the productivity of soybean plants that has proven successful is the application of sonic bloom technology.Sonic bloom is a technology that combines exposure to sound waves with frequency of 3,500 – 5,000 Hz followed by the application of liquid fertilizer through the leaves which can stimulate the opening of stomata so that it can increase the efficiency of absorbing fertilizers through the leaves. Compost tea is extracted from compost with water added with microbes which will accelerate the availability of nutrients, can be used as foliar fertilizer which is in the application of sonic bloom technology. This study aims to determine the productivity of soybean varieties using sonic bloom technology with compost tea liquid fertilizer.The research was a factorial experiment with a randomized block design (RBD). The first factor was the interval of using sonic bloom, I5: 5-day interval, I10: 10-day interval, and I15: once every 15 days. The second factor was soybean varieties, VA: Anjasmoro, VD: Dega-1, and VM: Mallika (black soybean). The data obtained were analyzed using Analysis of Variance with the F = 0.05 test followed by the 5% Honest Significant Difference (HSD) test. The interaction between the use of sonic bloom intervals using compost tea with a variety of soybean varieties gave a significant effect on the yield of soybean plants. For the best soybean yields, the Anjasmoro and Mallika black soybean varieties responded the same to compost tea at intervals of 5, 10 and 25 days. Meanwhile, the Dega-1 variety requires compost tea to be given more frequently, namely once every 5 days.

Keywords:
sonic bloom, compost tea, variety of soybean

CHARACTERIZATION AND POTENTIAL TEST OF INDIGENOUS MICROORGANISMS (IMO) FROM VARIOUS MANURE INOCULANT AS SOIL CONDITIONER

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ABSTRACT
The aim of this study was to determine the effect of IMO contained in manures which were cultivated at various concentrations of liquid substrate on the growth and yield of mustard greens. This research method consists of two stages. The first step was to isolate and identify IMO from chicken, goat, and cow manures cultured at various substrate concentrations. The second stage was to test the effect of IMO fertilization on the fertility level of the planting medium with mustard greens indicators in Singosari, Malang Regency. The experiment was carried out with a completely randomized design (CRD) arranged factorially with two factors. The first factor is the concentration of molasses and the second factor is the type of manure. The IMO characterization test was carried out descriptively, while the IMO potential test on mustard greens growth was carried out by using the analysis of variance (ANOVA) utilizing Microsoft Office Excel; if there was a significant effect on the treatment, it was tested using Duncan's p-value of 0.05. The results showed that IMO fertilizer grew well on substrates with low molasses concentration (20%). The highest number of bacteria was in cow manure cultivated at 20% molasses, while the highest total fungi was in goat manure cultivated at 30% molasses. Meanwhile, the best result for soil improvement potential test was shown by the combination of cow manure cultivated with 20% molasses, which was not significantly different from goat manure cultivated at 30% molasses.

Keywords:
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DETERMINANTS OF THE DECISION TO SHALLOT FARMING: SOCIO-ECONOMIC PERSPECTIVES IN MALANG DISTRICT

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ABSTRACT
Shallots are one of the main vegetables that farmers have long intensively cultivated. The availability of red onions is low and demand is quite high, resulting in soaring prices. This study aims to provide an overview of the current socio-economic situation and how it relates to current farming decisions, as well as measure the impact of socio-economic factors on shallot farming decisions. The number of samples collected was 65 farmers. The analysis methods used are descriptive statistical analysis and logistic regression analysis. The research results show that the socio-economic characteristics of shallot farmers are mapped from age, land area, the highest level of education, number of family members, and farming experience. Determinants of farming decisions from a socio-economic perspective are significantly and positively influenced by land area, production volume, and farmer income. Meanwhile, it is negatively and significantly influenced by age and production costs.

Keywords:
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ANALYSIS OF THE ECONOMIC PROFITS OF CASSAVA AGRIBUSINESS IN MALANG DISTRICT, EAST JAVA, INDONESIA

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ABSTRACT
Cassava production based on Central Bureau of Statistics' data for 2008-2022 fluctuated of 3.2 – 4.2 million tons/year and it tends to rise. However, in reality, this increase in production has not been able to meet the demand of creative economy actors in the cassava-based food business. Initial survey results showed that each seller of processed cassava requires around 20-35 kg of fresh cassava per day for four types of processed cassava. Therefore, this research is aimed at analyzing the economic benefits of cassava farming by utilizing marginal land through socializing the cassava planting program to farmers as cassava producers and analyzing the added value of processing cassava into nutritious flour and dried cassava. The method used is participatory action research (PAR) to mobilize the community to engage in cassava farming. The economic analysis method for cassava farming uses the R/C ratio. As supporting data, nutritional tests were carried out on flour and added value for dried cassava. The research results showed that the socialization of the cassava planting program resulted in a model of social agreement with the formation of "cassava planting congregations". The results of the economic analysis of cassava farming obtained an R/C>1. This shows that cassava farming is in the efficient category. Cassava flour is included in the high nutrition modified cassava (HNMC) category with a carbohydrate content varying on average from 10.30% - 76.90% and the added value of dried cassava is 25%. The recommendations in this research are (i) it is necessary to test the nutritional content of HNMC other than carbohydrates and (ii) the dried cassava product needs to be maintained because this product is more accepted by the market.

Keywords:
cassava farming, economic analysis, processed cassava, nutritional content

RABBIT URINE LIQUID ORGANIC FERTILIZER INCREASES GREEN SPINACH'S GROWTH, YIELD, VITAMIN C CONTENT AND CHLOROPHYLL CONTENT

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ABSTRACT

The research aims to determine the effect of giving rabbit urine liquid organic fertilizer (POC) on the growth, yield, vitamin C and chlorophyll content of green spinach plants. The design used was a simple randomized block design with 4 POC concentration treatments plus 1 control treatment as follows; Control = No rabbit urine POC; C1= 50 ml/L; C2= 100 ml/L; C3= 150 ml/L and C4 = 200 ml/L. Growth observation variables; plant height (cm), number of leaves and stem diameter (cm), yield variables; total wet weight per plant, economic wet weight per plant, root wet weight per plant, harvest index (%), vitamin C and chlorophyll content of green spinach. Data analysis using the F variance test was followed by the BNT test with a level of 5%. Regression analysis to obtain the optimum concentration of rabbit urine POC on green spinach plants. The results of the research showed that giving POC rabbit urine had a significant effect on the growth and yield of green spinach plants, where C3 treatment (150 ml/L) was the appropriate treatment for green spinach plants which was proven to be able to increase plant height, number of leaves and stem diameter respectively by 43.10%, 7.41% and 25.16% compared to controls. In terms of yield parameters, total plant fresh weight and economic fresh weight were 101.20 grams per plant and 89.28 grams per plant, respectively. The results of the regression test showed that the optimum dose of rabbit urine POC was 195.25 ml/L with an optimum total wet weight of 98.00 grams per plant. The highest Vitamin C and chlorophyll content was shown by the C3 concentration (150 ml/L) treatment of 35.20 mg/L and 3.63 µg/cm2, respectively.

Keywords:
POC, rabbit urine, green spinach, chlorophyll, vitamin C

UTILIZATION OF REJECTED WASTE AS A SUBSTRATE MIXTURE FOR WHITE OYSTERS (PLEOROTUS OSTREATUS) AND EAR MUSHROOMS (AURICULARIA AURICULA L)

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ABSTRACT
This research aims to determine the growth and growth of white oyster mushrooms and wood ear mushrooms on various types of substrates. The research location was carried out at the Agrotechnology Laboratory, Faculty of Agriculture, Islamic University of Malang and a mushroom house with an altitude of 550 meters above sea level, temperature 22.7°C - 25.1°C. Air humidity 79% - 86%. The research was carried out from November 2022 to January 2023. The research design used a Completely Randomized Factorial Design (CRD) with two factors, namely factor I was the planting substrate (S) and factor II was the type of mushroom (J). Factor I consists of 4 types, S0 (Media without waste mixture), S1 (Media with 15% waste mixture), S2 (Media with 30% waste mixture), S3 (Media with 45% waste mixture). Factor II consists of J1 White oyster mushroom and J2 Ear mushroom. The results showed that white oyster mushrooms had the best fresh weight of fruit bodies compared to ear mushrooms. The total body weight of the fruit was 514.6 g per log bag, while that of ear mushrooms was 92.3 g. The white oyster mushroom type has the best EB value with a percentage of 317.2%. The Biological Efficiency (EB) value achieved was 51.46% better than wood ear mushrooms.

Keywords:
rejected waste, Pleorotus ostreatus, Auricularia auricula, mixture and substrate

CHLOROPHYLL CONTENT AND GROWTH DYNAMICS OF RICE (ORYZA SATIVA) PLANT DUE TO APPLICATION OF ZNO NANOPARTICLES ENHANCED COMPOST

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ABSTRACT
The effects of nanoparticles (NPs) on rice plant growth and chlorophyll dynamics have not been extensively documented in the current literature. An investigation was carried out to study the effect of compost enhanced by ZnO-NP on chlorophyll and growth dynamics of rice (Oryza sativa L.) plant, as one of the major agricultural crops, in a pot experiment using a randomized block design. Various concentrations of ZnO-NP were applied into compost compared to control (no fertilizer) and NPK fertilizer. The result of this study showed that the chlorophyll content fluctuated at the age of 4-9 wap. The NPK fertilizer (T1), compost+150mg ZnO-NP kg-1(T4), ½NPK+Compost+100mg ZnO-NP kg-1(T6) and ½NPK+Compost+150mg ZnO-NP kg-1(T7) treatments statistically showed the same chlorophyll content at ages 4-9 wap as well as the plant growth. The plant growth starting at the age of 4-9 weeks after planting (wap) showed increasing growth except for the number of tillers at the age of 8 and 9 wap, showed a slight decrease. The highest increase in the number of tillers was found in T6 (28%) and T1 (41%) and T7 (32%) for the leaf area which compared to the control. By regression analyses, it revealed a closed positive correlation between chlorophyll content and plant growth variables. The linear relationship showed that the amount of chlorophyll had a pronounced effect on plant growth at each measurement. This was indicated by the determination coefficient value (R2>0.50). The results of this research suggest that the application of compost enhanced by ZnO-NP as 100-150mg kg-1 combined with ½NPK fertilizer is able to produce growth and chlorophyll content that is as high as 100% NPK fertilizer treatment.

Keywords:
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TECHNICAL EFFICIENCY OF PORANG FARMING ON THE USE OF TUMBER AND FROG TYPES OF SEEDS IN REJOSARI VILLAGE, BANTUR DISTRICT, MALANG DISTRICT USING THE DEA (DATA ENVELOPMENT ANALYSIS) APPROACH

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ABSTRACT
In the use of production factors in porang cultivation, each farmer varies depending on the experience and economy of the farmer. Farmers who have capital and experience in porang cultivation tend to be more expensive in spending, while farmers with little capital tend to minimize the use of production factors to reduce variable costs incurred. This shows that the use of production factors is not technically efficient. The research objectives are as follows: 1) analyzing the amount of income received by farmers from porang farming using tuber seeds and frog seeds in Rejosari Village, Bantur District; 2) analyzing the achievement of technical efficiency on farmers in porang farming by using tuber and frog seeds in Rejosari Village, Bantur District, Malang Regency. 32 tuber seed farmers and 11 frog seed farmers. Data analysis used Data Envelopment Analysis (DEA) approach with the assumption of variable return of scale (VRS) and input-oriented. The results showed that there were 87.80% of farmers who achieved the TE value = 1, and the TE value <1 was 12.50% of the farmers. Meanwhile, in the calculation of technical efficiency with frog seeds based on the VRS model, there were 100% of farmers who achieved TE = 1, while those with TE < 1 were 0 farmers. There are 78.13% of farmers located in CRS and as many as 21.88% of farmers with IRS, while 90.09% of frog seed farmers are in the CRS proportion and 9.09% of farmers are in IRS.

Keywords:
Technical efficiency, Porang, DEA

THE EFFECT OF LIQUID VP3 BIOFERTILIZER ON MUNG BEAN YIELD COMPARED WITH BIOFERTILIZERS SOLD ON THE MARKET

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ABSTRACT

This study aim was to determine the effect of VP3 biofertilizer in liquid formulation compared to other biofertilizers on the market which were tested on the growth of mung bean in the field. VP3 biofertilizer which has been formulated and developed in previous research contains 3 functional bacteria, namely free N-fixing bacteria, phosphate-solubilizing bacteria and exopolysaccharide)-producing bacteria. The research was conducted in the Bumi Asri area, Dau District, Malang Regency, and the Chemical Laboratory, Universitas Islam Malang from June to October 2022. This land was chosen because it is fallow land, so that the application of biological fertilizer is not affected by any residual fertilizer in the last 2 years. The experimental design used was Randomized Block Design (RBD) with 6 treatments and repeated 3 times. The results of the research showed that the treatment of VP3 biofertilizer when compared with biofertilizers on the market generally gave better results on the growth and yield variables of green bean plants in the field. Significant values were shown in the variable number of root nodules and the variable total dry weight of harvest per treatment plot. This result can be seen from the variable total weight of seeds per plot which shows that the TKHA treatment (Soil + Compost + VP3 Biological Fertilizer) gave an average yield of 95.96 grams.

Keywords:
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THE INFLUENCE OF MOUTH AND NAIL DISEASES ON FINANCIAL HEALTH PERFORMANCE (STUDY AT VILLAGE UNIT COOPERATIVE SUMBER MAKMUR NGANTANG MALANG)

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ABSTRACT
Foot and Mouth Disease is an acute infectious animal disease caused by a virus that shows an impressive ability to become a problem for farmers. The spread of foot and mouth disease in livestock is fast and causes significant economic losses; dairy farmers also experience this. Dairy cattle sales compared to livestock selling prices fell. This research was conducted on village unit cooperative Sumber Makmur Ngantang Malang Regency, which gathered dairy farmers by looking at the balance sheet & profit and loss financial statements for 2021 & 2022 with four financial ratio analyses: Liquidity, Activity, Solvency, and Profitability. The results of the financial performance analysis of village unit cooperative Sumber Makmur in 2021 is 2.73; in 2022, it is 2.58 with a standard of 2.50 – 3.24, interpreted as Fairly Healthy. Foot and mouth disease also significantly influences the decline in financial performance from 2.73 (2021) to 2.58 (2022). These findings emphasize the need for special treatment by vaccinating cattle belonging to cooperative members and those belonging to the community simultaneously and periodically to break the chain of viruses in controlling foot and mouth disease so that the financial performance of village unit cooperative Sumber Makmur in 2023 can improve and be healthy.

Keywords:
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STRATEGY FOR INTEGRATING INLAND FISHERIES INTO THE MANAGEMENT OF THE CENTRAL MAHAKAM WATERSHED

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ABSTRACT
The inland fisheries sector is an important sector for development in developing countries. However, many studies show that the inland fisheries sector is marginalized due to the impact of land use changes both directly and indirectly. The main problem in the management of inland fisheries in the Central Mahakam watershed is the reduction in fishing grounds due to changes in land use and the tendency to increase TSS, turbidity, shallowing and extreme water level fluctuations. Because resilience and sustainability of inland fisheries will only be achieved if fisheries are integrated with watershed management, this research aims to analyze the integration of inland fisheries with watershed management and to develop integration strategies. This research uses a mix method with surveys, structured interviews and focus group discussions for data collection. Meanwhile, data analysis will use quantitative data analysis for SWOT and QSPM. SWOT and QSPM are used to make decisions that can objectively determine alternative strategies that are prioritized according to internal and external conditions. The main aspect in integrating inland fisheries management into watershed management is institutional integration. Institutional integration is carried out through revitalizing watershed institutions by increasing institutional capacity and human resources and strengthening the natural resource planning and management system. After institutional and human resource capacity, it is hoped that human resources will be able to formulate an ecosystem restoration plan and implement it technically.

Keywords:
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A NEW GENERALIZED FRACTIONAL DERIVATIVE FOR LAPLACE EQUATION

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ABSTRACT
The Laplace Equation is a fundamental equation in mathematical physics and engineering. In this paper, we introduce a novel approach to solving the Laplace Equation by utilizing a New Generalized Fractional Derivative. This New Generalized Fractional Derivative extends the traditional notion of fractional derivatives, offering a more versatile tool for solving complex problems. We explore the theoretical framework and properties of this New Generalized Fractional Derivative, demonstrating its effectiveness in solving the Laplace Equation.

Keywords:
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SAGO (METROXYLON SAGO, ROTTB) GENETIC RESOURCES IN JAYAPURA REGENCY: A CASE STUDY IN YOKARI DISTRICT

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ABSTRACT

The highest sago germplasm diversity was in Papua according to phylogenetic analysis based on molecular markers. Germplasm is the substance of heredity which is the genetic source in the assembly of superior cultivars. To get a superior genetic source, it begins with exploration in order to identify the type and then evaluate the characteristics of the cultivar which will eventually lead to the development of superior sago. This study aims to characterize superior sago plants in Jayapura Regency based on plant morphological characters, designed using a descriptive method with field survey techniques. The research location is in Yokari District, Jayapura Regency and the external morphological characters are the basis for distinguishing sago accessions. The results showed that there were 3 accessions of superior sago, consisting of 2 accessions of thornless sago, namely Phi Piya and Phi Mambun accessions, while the accessions for prickly sago were Phi Beta. Phi Mambun accessions had the highest stem height, Stem diameter, Length Leaflets and Leaf width , respectively 12.0 m, 66.88 cm, 148.33, 9.33. The highest dry starch production potential was obtained in accessions of Phi Mambun, Phi Betha and Phi Piya, respectively, of 394.40, 348.02 and 343.20 kg dry starch/tree. These three sago accessions have the potential to be selected superior accessions that are recommended for conservation through plant cultivation activities because they have relatively high yield potential.

Keywords:
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CHARACTERIZATION OF COWPEAS (VIGNA UNGUICULATA) LOCAL MADURA

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ABSTRACT
Cowpea (Vigna unguiculata) is a plant that has the second highest vegetableprotein content after soybeans. The development of peanuts is very supportive ofsupporting food diversification and can provide a source of highly nutritious food.Cowpea plants are also tolerant of low fertility conditions. Therefore, cowpeas aresuitable for cultivation in Madura land. This research aims to determine themorphological characteristics and relationship relationships of local Maduresecowpeas (Vigna unguiculata). This research was carried out experimentally in anet house built on farmers' land in Socah District, Bangkalan Regency, Madura inOctober-December 2023. The research used a non-factorial Randomized BlockDesign (RAK) with 20 accession treatments (20 accession numbers). The cowpeaaccessions used were the result of exploration activities in Bangkalan, Sampang,Pamekasan and Sumenep Regencies. A1-5 (Cowpea from Sumenep), A6-10(Cowpea from Pamekasan), A11-15 (Cowpea from Sampang), A16-20 (Cowpeafrom Bangkalan). The variables observed were seed shape, seed texture, seed eyepattern, seed eye color, leaf color, leaf shape, leaf petiole, leaf texture, leaf (lateralleaf position relative to the terminal leaf), leaf (anthocyanin coloring on the leafvein), blade leaves (terminal leaf shape), flower pigment pattern, flower color, andtime to first flowering. The results of qualitative observations show that there aresimilarities and differences in terms of morphological characteristics between the20 accessions studied.Keywords: Cowpea, Characterization, Morphology, Relationship, and Madura

Keywords:
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CONTENT OF BIOACTIVE COMPOUNDS IN HERBAL CHILI (PIPER RETROFRACTUM. VAHL) WITH CLIMBING POLES OF MORINGA TREE (MORINGA OLEIFERA LAMK)

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ABSTRACT
The herbal chili plant (Piper retrofractum. Vahl) belongs to the Piperaceae family and is a medicinal plant that is widely used in Indonesia. The main benefit of herbal chilies is that the fruit is used as an ingredient in herbal medicine mixtures. Because it contains essential oils, piperine, piperidine, palmitic acid, tetrahydropiperic acid, undecylenyl 3-4 methylenedioxy benzene, N-isobutyl decatrans-2 trans-4 dienamide, sesamin, eicosadienamide, eicosatrienamide, guinensina, octadecadienamide, protein, carbohydrates, glycerides, tannins, and karyophelina. The research was carried out in September-November 2022, using a survey method with purposive sampling. The research aims to determine the bioactive content of herbal chilies using Moringa tree climbing poles at production centers in BlutoMadura District. The results of this research are an analysis of the chlorophyll content in the 4 highest villages in Bluto Village. Analysis of the highest piperine content in 4 villages in Pekandangan Barat Village. Analysis of proximate content in the 4 highest villages in Pekandangan Barat Village.
Keywords: chili herbal medicine, chlorophyll, piperine, proximate

Keywords:
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EFFECT OF BIOCHAR-COATED UREA ON GROWTH AND CHLOROPHYL CONTENT OF CORN GROWN ON SANDY SOIL

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ABSTRACT
Nitrogen is one of essential elements that usually fulfilled by Urea application. However,efficiency use of N from urea was less than 50% due to N loss by volatilisation and leaching.Such problem could be more severe in sandy soil as this soil low in organic matter content andCEC. The problem may be overcome by the use of slow-release fertilizer (SRF). In this studySRF was produced from urea powder at 80% and 100% of the recommended rate, coated bybiochar either rice husk (Rh) or corn cob (Cc) biochar, pyrolysed at 450 o C in a muffle furnace forone hour and sieved for 0,5 mm diameter. Two control treatments without biochar wereestablished, without urea treatment (P0) and the recommended rate (P1). Treatments wereapplied on corn plant grown on sandy soil in pot placed in a green house and the plant washarvested at 45 days. Result showed that urea application increased corn biomass over 100%(P0: 29.96 g; P5: 64.46 g) and total chlorophyl content in average up to 35% (P0: 816.15 ±82.27; P5: 1098,14 ± 12,72). The SRF increased agronomic efficiency with the treatment of bothCc- and Rh-biochar-coated urea at 100% of recommended rate resulted in the highestefficiency. Biochar-coated Urea could be applied to increase plant growth and N efficiency usefrom urea in sandy soil.Key words: biochar, urea, chlorophyl, sandy soil, Slow release fertilizer

Keywords:
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EFFECT OF COW MANURE AND BOILER ASH ON BULK DENSITY, TOTAL PORE SPACE AND GROWTH OF RED GINGER IN ULTISOL

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ABSTRACT
Ultisols in Indonesia are dominantly found in Sumatra, Kalimantan and Papua with a distribution areaof around 25% of Indonesia's land area. The fertility level of Ultisol is generally low in both chemicaland physical fertility. Improving soil fertility is done by adding organic material. Cow manure andboiler ash can be used to increase soil fertility. The aim of the research is to analyze the effects of cowmanure and boiler ash on soil bulk density and total soil pore space as well as the growth of redginger. The research was arranged in a randomized block design with 6 treatments and 4 replicationsin 3 x 2 meter experimental plots. Soil analysis was carried out before applying cow manure andboiler ash. Analysis of soil bulk density and total soil pore space was carried out at the end of theexperiment. The results of the research showed that the application of manure and boiler ash did nothave a real effect on soil bulk density and total soil pore space, but had a significant effect on gingerplant parameters.

Keywords:
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EXPLORATION AND MORPHOLOGICAL CHARACTERIZATION OF JASMINE PLANT TO OBTAIN QUALITY RAW MATERIALS AT THE PRODUCTION CENTER IN BURNEH DISTRICT, MADURA

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ABSTRACT
Jasmine (Jasminum sambac) is a commodity with high economic value. The population ofjasmine plants in Bangkalan Regency, Madura, is already 30 years old. The potential ofjasmine plants in Bangkalan Madura needs to be developed. The first step for conservationneeds to be exploration and characterization of jasmine plants, so that plants are obtainedthat have high yield potential, contain quality essential oils and good cultivation techniquesare found. The aim of this research is to determine the morphology of jasmine plants basedon the characteristics of stems, leaves and flowers in Burneh Bangkalan District and todetermine the quality of raw materials and the chemical compound content of jasmineflowers in Burneh Bangkalan District. This research was carried out at the jasmineproduction center in Burneh District, Bangkalan Regency and bioactive analysis was carriedout in the Agroecotechnology laboratory, Faculty of Agriculture, Trunojoyo University,Madura. The research was carried out from August to November 2022. This research used asurvey method designed to obtain an overview of the morphological characteristics andbiochemical content of jasmine plants in Burneh District, Bangkalan Regency. How todetermine sources using snowball sampling techniques. Determination of sampling locationsusing the purposive sampling method. Morphological characterization is carried out byscoring by identifying morphological characters which include general plant growthcharacteristics, leaf characteristics, flower bud characters, flowering and flowercharacteristics. The research results showed that the dendogram analysis of the nineaccessions did not form one large group based on the area of origin but the similarities werebased on the many similarities in the morphological diversity characters they had.Keywords: jasmin, exploration, characterization, morphology,

Keywords:
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GROWTH RESPONSE OF RICE PLANTS IN RICE FIELDS CONTAINING HIGH GEOGENIC NICKEL

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ABSTRACT
Efforts to increase rice production to achieve food security by expanding land and using agrochemicals.The expansion of rice fields containing heavy metals and the use of agrochemicals can have a major impacton crop production, as well as human and animal health. Nickel is a dangerous heavy metal. The aim ofthis research is to obtain standard values for the quality of metallic nickel from paddy fields in three EastLuwu sub-districts with rice as an indicator crop. This nickel quality standard testing activity was carriedout at the Hasanuddin University Soil Laboratory and planting in the greenhouse was carried out at theLuwu Region I Observation, Perennial, Control of Plant Pest Organisms (IP3-OPT) Installation. Theresearch method was to take soil samples and test the adsorption test for the heavy metal Ni in thelaboratory. Pot experiments were carried out in a greenhouse to calibrate heavy metals in soil using acompletely randomized factorial design (CRD) which was repeated 2 times. namely consisting of Sorowakosoil treated usk0 (8 kg), Tawakua soil utk0 (8 kg), Cakkaruddu soil ulk0 (8 kg). Based on the results ofresearch that has been carried out, the results of the heavy metal Ni absorption test are, Cakkaruddu Village54.63ppm, Soroako 895.91ppm, Tawakua 4715.95ppm. Providing various types of soil media had nosignificant effect on plant height and number of tillers, while the number of leaf parameters had a significanteffect at weeks 2, 4, 5 and 6.Keywords: Rice, Ni content, heavy metals, paddy fields

Keywords:
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IDENTIFICATION OF THE DISTRIBUTION OF SOIL SUB-GROUP TYPES IN THE MESOLANDFORM OF SMALLHOLDER COFFEE PLANTATIONS IN THE KLETEK SUB-WATERSHED

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ABSTRACT
The diverse spatial conditions of the land on the slopes of South Kawi Mountain cause various landformcharacteristics to occur on this land. Therefore, it is necessary to classify the characteristics of various landforms usingmeso-landforms. To determine land cover density, meso-landform classification is based on land topographic position,curvature, slope, and NDVI. Meso-landforms can cover land areas ranging from 1 ha to 100 ha. Based on this analysis, itis hoped that it will be able to show the distribution of soil types at the subgroup level. The southern slope of GunungKawi, which is a volcanic landform, has 10 meso-landforms, namely Mountain Top and High Narrow Ridge, MidslopeRidge and Small Hill in Plain, Local Ridge Hill in Valley, Upper Slope and Plateau, Upper Slope and Plateau, OpenSlope, Plain, N Shape Valley, Upland Drainage and Headwater, Midslope Drainage and Shallow Valley and Canyon andDeeply Incides Stream. Each meso-landform has a diverse distribution of soil subgroups. Typic Hapludands, TypicEutruddepts, Andic Eutrudepts, Typic Hapludalf, and Typic Epiaquepts dominate the Canyon and Deeply Incides Streammeso-landform. Andic Eutrudepts, Typic Hapludands, Typic Eutrudepts, and Vitric Hapludands dominate MidslopeDrainage and Shallow Valley. Typic Epiaquepts and Typic Eutrudepts dominate Upland Drainage and Headwater. TypicHapludands, Andic Eutrudepts, Typic Epiaquepts, and Typic Eutrudepts dominate U Shape Valley. Typic Hapludands,Typic Epiaquepts, Typic Eutrudepts, Typic Hapludands, Andic Eutrudepts dominate Plain. Aquic Eutrudepts, TypicEutrudepts, Andic Eutrudepts, Typic Hapludands, and Typic Epiaquepts dominate Open Slope. Typic Eutrudepts, TypicHapludands, and Andic Eutrudepts dominate the upper slope and Plateau. Typic Hapludands, Aquic Eutrudept, TypicEutrudept, Andic Eutrudepts, and Typic Epiaquepts dominate local Ridge Hill in Valley. Typic Eutrudepts, TypicHapludands, Andic Eutrudepts, Typic Epiaquepts, and Aquic Eutrudepts dominate Midslope Ridge and Small Hill inPlain. Typic Hapludand, Andic Eutrudepts, Typic Eutrudepts, and Typic Epiaquepts dominate Mountain Top and HighNarrow Ridge.

Keywords:
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LOCAL HIGHLAND RICE ENDOPHYTIC BACTERIA AND THEIR POTENTIAL TO INCREASE PLANT GROWTH

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ABSTRACT
Endophytic bacteria live in plant tissue and are able to provide beneficial effects to plants and play a role inagricultural productivity. Local rice varieties in the North Luwu highlands are cultivated traditionally andhave survived to this day. This ability to survive is thought to be because local rice plants are associatedwith endophytic bacteria through various mechanisms, including being able to produce the hormone IAAand its ability to dissolve phosphate. This research aims to isolate endophytic bacteria in the rhizosphereof rice plants, characterize the morphology and physiology of endophytic bacteria (gram test, catalase test),analyze plant growth promotion tests through qualitative and quantitative screening of IAA-producingbacteria, phosphate dissolution activity on Pikovskaya media, and quantitatively using using aspectrophotometer. This research was conducted in North Luwu Regency, South Sulawesi, Pest ScienceLaboratory, Department of Pests and Diseases, Hasanuddin University. This research method is adescriptive study using morphological and physiological characterization (Gram reaction test with 3% KOH),ability test for IAA producing bacteria and phosphate solubilization test. This research succeeded inisolating twenty-four bacterial isolates from local organic soil and rice rhizorfer samples. Morphologicalcharacterization of bacterial isolates from local organic rice rhizorfers showed that 5 of the samples weretarone varieties, seven of which were local tarone hoyane rice varieties from Seko District. Meanwhile, fromRongkong District there were 5 samples from the Bandarata variety and 7 from the Banjara variety. Theresults of morphological characterization show quite different results in terms of color, size, shape andgrade. IAA bakerability test. IAA-producing local rice rhizorfer bacterial isolates from Seko with the tarone hoyane rice variety produced a more intense pink color and had the highest IAA concentration (1,835 mg/L-1), followed by local rice isolates of the tarone variety from Seko sub-district (1,630 mg L-1) and isolates of local rice rhizorfer bacteria of the Bandarata variety from Rongkong District (1,566 mg L-1). Meanwhile,local rice bacterial isolates of the Banjara variety from Rongkong sub-district had the lowest value (0.316mg L-1). Testing the ability of isolates from the local rice rhizorfer of the Tarone Hoyane variety to have theability to solubilize phosphate with an IP (solubilization index) value of 2.64 and the lowest isolate wasisolate PBU101, namely, isolates from the Bandarata rhizorfer originating from the Rongkong sub-districtlocation (1.86) and The lowest isolate was in the Banjara rice variety (1.86).

Keywords:
Endophytic bacteria, IAA, Rice, Rhizobacteri, Phosphate Solubilization

GROWTH OF HERBAL CHILLI CUTTNGS (PIPER RETROFRACTUM VAHL.) AT VARIOUS LEVELS OF SHADING DENSITY AND WATER VOLUMES

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ABSTRACT
The intensity of sunlight and water are two growth factors that can influence the productivityof herbal chilies. Sunlight influences the photosynthesis process which can be regulated byproviding shade to optimize the absorption of sunlight by plants. The volume of watersupplied in plant cultivation needs to be regulated because the water needs of plants at eachgrowth phase are different. The aim of this research is to determine the effect of providingshade and water volume on the growth of herbal chili seedlings. The research was carried outat the experimental garden, Trunojoyo University, Madura for 4 months (September –December 2023). The research used a Split Plot Design (SPD) research design with the MainPlot being the level of shade density: no shade (N1), 65% shade (N2), 90% shade (N3), andSub Plots being the volume of water supply: 100% water supply KL or 400 ml (A1), givingwater 75% KL or 300 ml (A2), and giving water 50% KL or 200 ml (A3). Data analysis usesthe Random Trace Analysis (Anova) method. If there is a real influence, Duncan's further testis carried out at the 5% level. Observation parameters include the number of leaves, numberof shoots, and plant length. The results showed that there was no interaction betweenproviding shade and the volume of water provided. Providing shade has a significant effecton the number of shoots of herbal chili plants, but has no significant effect on the number ofleaves and plant length. The volume of water provided had no significant effect on thenumber of leaves, number of shoots, and plant length.

Keywords:
herbal chilies, lower vine cuttings, shade, sunlight intensity, water

PRODUCTION OF MICRO/NANOCELLULOSE FROM CABBAGE VEGETABLE WASTE (SOFT LIGNOCELLULOSIC) AS RAW MATERIAL FOR DRUG CARRIER

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ABSTRACT
Cabbage vegetable waste is a material with great potential for use as a raw material in producingMicro/Nanocrystalline Cellulose (M/NCC). This material is known for its high cellulose contentand has found numerous applications across various sectors, with a particular focus on the healthand medicine industry. This research aims to produce M/NCC as the raw material for drugcarriers by an eco-friendly process using mechanical treatment with a High-Speed Mixer Cutter(HSMC), followed by delignification using a low concentration of NaOH. Steam explosion isalso conducted to remove hemicellulose, employing various temperature treatments ranging from150°C to 200°C. Samples that underwent mechanical treatment using HSMC exhibited areduction in lignin content from 13.8% to 1.23% and an increase in cellulose content from29.53% to 53.56%. After the delignification and bleaching processes, the lignin contentdecreased to 0.14%, while the cellulose content increased to 56.25%. The production of NCCwas achieved through the steam explosion, resulting in the highest cellulose content of 70.11% ata temperature of 180°C.

Keywords:
Cabbage vegetable Waste, Micro/Nanocrystalline Cellulose, Drug Carrier.

SILICA EXTRACTION FROM SIDOARJO MUD USING KOH-K2CO3 ALKALINE COMBINATION

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ABSTRACT
The Sidoarjo mud is a major event that occurred in Indonesia and is a new naturalresource because of its abundance. It is known that Sidoarjo mud contains 48,3% SiO 2 andseveral other rare earth elements in the compounds Eu 2 O 3 and Yb 2 O 3 , although in smallconcentrations. Because of this, silica is considered the greatest impurity when compared to theavailability of other metals. This research aims to determine the effectiveness of alkali in silicaextraction by comparing KOH and K 2 CO 3 . From the research results, it was found that silicaextraction in the silica fusion process with a concentration of 1 M KOH and 2 M K 2 CO 3 wascarried out in an electric furnace for 2 hours at a temperature of 800 o C and previously soakedfor 1 hour. Based on the calculation of the Gibbs energy value, it is found that KOH gives aminus value at a temperature of 600 o C, while K 2 CO 3 gives a minus value at a temperature of800 o C. Therefore, it can be said that KOH reacts more spontaneously when compared toK 2 CO 3 . When KOH-K 2 CO 3 was combined with these variables, the resulting yield was 77,65%.

Keywords:
Silica, Alkaline, Fusion, Gibbs

STRATEGY FOR INTEGRATION OF INLAND PUBLIC FISHERIES INTO THE MANAGEMENT OF THE MAHAKAM SECTION WATERSHED MIDDLE: WATERSHED SOCIO-ECOLOGICAL SYSTEMS APPROACHES, SWOT AND QSPM

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ABSTRACT
The inland general fisheries sector is an important sector for development in the countrydevelop. However, many studies show that the inland fisheries sector is marginalizeddue to the impact of changes in land use both directly and indirectly. ProblemThe main thing in the management of inland public fisheries in the Central Mahakam Watershed is the existence ofreduction in fishing grounds due to changes in land use and increasing trendsTSS, turbidity, shallowing, and extreme water level fluctuations. Because of resilience andSustainability of inland general fisheries will only be achieved if fisheries are integrated withwatershed management, this research aims to analyze the integration of inland fisheries withwatershed management, developing integration strategies, and developing co-management modelsits management. This research uses a mix method with surveys, structured interviews andfocus group discussion for data collection. Meanwhile, for data analysis we will usequalitative content analysis using the SEMW (Socio-ecological watershedmanagement) and quantitative data analysis for SWOT and QSPM. As is the approachother watershed management, for example integrated water resources management and managementecosystem-based, SEWS is more targeted at issues of water resources and inland fisheries andfocused on solutions. Meanwhile, SWOT and QSPM are carried out for accurate decision makingcan objectively determine alternative strategies that are prioritized according to internal conditions andexternal.

Keywords:
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STUDY OF GROWTH PATTERNS AND BIOLOGY OF GREEN CRAB (THALAMITA CRENATA) FROM THE MANGROVE FOREST OF LABUHAN VILLAGE, SEPULU DISTRICT, BANGKALAN, EAST JAVA

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ABSTRACT
The green crab (Thalamita crenata) serves as a vital fisheries resource for Labuhan village inthe Sepulu district of Bangkalan regency, supporting the local community's food needs. To preventoverfishing, a study was conducted on green crab growth patterns and biology, using samples from themangrove forest area caught by fishermen. The research focused on understanding growth patterns, sexratios, carapace width, body weight frequency distribution, and the correlation between carapace widthand body weight. Using a quantitative descriptive method, 169 green crab specimens were sampledtwice over two months. Results revealed negative allometric growth patterns (b<3) with respective bvalues of 2.249 for males and 2.2153 for females. The male-to-female sex ratio was 1.96:1, and the mostcommon carapace width and body weight ranges were identified for both genders. Carapace width formale green crabs was in the 54-58 mm range, with 29 specimens, while for females, it was in the 49-53mm range, with 21 specimens and the most frequent body weight for male green crabs was in the 24-31g range, with 31 specimens, while for females, it was in the 16-23 g range, with 21 specimens.

Keywords:
Frequency distribution of carapace width, and the relationship between carapace width andbody weight, green crab, Thalamita crenata, sex ratio

THE EFFECT OF PLANT MEDIA COMPOSITION AND PGR ON THE GROWTH OF JASMINE (JASMINUM SAMBAC L.) PLANT CUTTINGS

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ABSTRACT

Jasmine (Jasminum sambac L.) is a well-known Indonesian ornamental plant native tovarious regions in Asia, Africa and Australia. Propagation of jasmine plants is usually donevegetatively (cuttings). The obstacles faced when making cuttings are slow growth of rootsand shoots and abnormal growth. This problem can be overcome by using growth regulators(ZPT). This research aims to determine the effect of providing planting media and ZPT, aswell as the interaction between planting media and providing ZPT on the growth of jasminecuttings. The research was carried out in the Greenhouse of the Agroecotechnology StudyProgram, Faculty of Agriculture, Trunojoyo University of Madura from September toNovember 2023. The research used a factorial randomized block design using planting mediaand PGR treatments. The first factor is the planting media, consisting of 3 levels of treatment,namely M1 (Soil), M2 (Soil, Charcoal husk), M3 (Soil, Charcoal husk, Compost). Thesecond factor for giving ZPT is P1 (POC Nasa), P2 (Banana Weevil Extract), P3 (MoringaLeaf Extract). Data analysis uses analysis of variance, if it shows differences, continue withthe 5% DMRT test. Parameters observed included plant height, number of leaves, andnumber of shoots. The results of this study indicate that there is no interaction betweenplanting media and ZPT. The use of planting media has a real influence on plant height,number of leaves and number of shoots. While ZPT has a very significant effect on plantheight, it has no real effect on the number of leaves and number of shoots.

Keywords:
Jasmine; Cuttings; Growing media; Growth regulator

STUDY OF THE UTILIZATION RATE OF ORGANIC WASTE SILAGE AS A CONSTITUENT OF FEED ON THE CONSUMPTION OF THIN-TAILED LAMBS

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ABSTRACT
Organic waste from the market can be used as a source of forage substitutes for animal feed using silage technology. This study aims to determine the effect of organic waste silage originating from the market as a substitute for forage sources on dry matter intake, organic matter intake, crude protein intake, and feed intake on the metabolic weight of thin-tailed sheep. This study used a Group Randomized Design using 15 thin-tailed lambs. Market organic waste consists of corn husks, cabbage waste, pakcoy waste, broccoli leaves, and leek waste. The treatment consists of five types of feed, namely 60% concentrate + 40% grass (T0), 60% concentrate + 30% grass + 10% market organic waste silage (T1), 60% concentrate + 20% grass + 20% market organic waste silage (T2), 60% concentrate + 10% grass + 30% market waste silage (T3), 60% concentrate + 40% market organic silage waste (T4). The results showed that the use of market organic waste silage as a substitute for forage sources in thin-tailed sheep feed was able to increase DMI, OMI, CPI, and feed intake at metabolic weight (P<0.05) except at metabolic weight CPI. T4 treatment showed the highest results, on all treatment parameters. The results of this study can be concluded that in aggregate, the use of market organic waste as a substitute for forage sources in feed is able to increase the feed consumption of thin-tailed lambs.

Keywords:
Organic waste, silage, forage substitutes, thin-tailed lambs.

HEMATOLOGY DAN BLOOD CHOLESTEROL PROFILE OF LAYING HENS TREATED WITH PROBIOTIC LACTOBACILLUS SALIVARIUS SOLUBLE IN DRINKING WATER AT VARIOUS DOSES

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ABSTRACT
Animal health, especially poultry, often experiences problems after the ban on the use of antibiotic growth promoters in Indonesia. Feed digestibility, especially protein, becomes inefficient so livestock performance and immunity decrease. The use of L. salivarius probiotics can be a solution to increase the immunity of laying hens. L. salivarius was isolated from the ileum intestines of quail. This research aimed to evaluate the use of L. salivarius probiotics in laying hens on hematology and blood cholesterol levels. The design used in this research was a completely randomized design with 5 treatments and 5 replications. The treatments are T0 = Control, T1 = Giving L.salivarius 10^3 CFU to drink, T2 = Giving L.salivarius 10^5 CFU to drink, and T3 = Giving L.salivarius to drink 10^7 CFU. Data analysis in this research is Analysis of Variance (ANOVA). The results of the research carried out were that giving L.salivarius probiotics had a significant effect (P<0.05) on reducing leukocyte values and a very significant effect (P<0.01) on increasing hemoglobin and erythrocytes in laying hens. The use of L.salivarius also had a very significant effect (P<0.01) on the blood metabolism of laying hens, namely reducing triglycerides, cholesterol, and LDL (Low-density Lipoprotein) levels and increasing High-Density Lipoprotein (HDL) levels. The best dose to use soluble L. salivarius in drinking water is 10^7 CFU or the equivalent of 1 mL of probiotics in 1 L liter of drinking water.

Keywords:
Blood Profile, cholesterol, Laying Hens, L. salivarius probiotic

HEMATOLOGY AND BLOOD METABOLITES OF ETAWA CROSSBREED DAIRY GOATS FED CONTAINING MENGKUDU WASTE (MORINDA CITRIFOLIA L) IN VARIOUS DOSES

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ABSTRACT
This research was conducted to evaluate the use of noni dregs (Morinda citrifolia L) in complete feed for dairy goats on the blood profile and blood metabolites of Etawah crossbreed goats. This study used a completely randomized design with 4 treatments and 5 replications. The treatments in this study were T0 = Control, T1 = Use of 7.5% mengkudu waste, T2 = Use of 10% mengkudu waste, and T3 = use of 12.5% mengkudu waste. The data analysis used is an analysis of variance (ANOVA), if significantly different data is found, it is continued with the Duncan test. The results of the study showed that the use of mengkudu waste had no significant effect on the hematological values, glucose, and blood protein levels of Etawa crossbreed goats. The use of mengkudu waste very significantly (P<0.01) reduced cholesterol, triglyceride, and Low-Density Lipoprotein (LDL) levels and increased the Hight value. Density Lipoprotein (HDL) of Etawa crossbreed goats. Mengkudu waste can be used as a feed ingredient for dairy goats with an optimal dose of 10% because it can reduce cholesterol and trigliceride levels without affecting the health profile of Etawa crossbreed goats.

Keywords:
Blood Metabolite, Ettawa crossbread dairy goat, hematologi, Morinda citrifolia L

RESPONSE OF PRIMER IMMUNE ORGAN SIZE OF COTURNIX JAPONICA TREATED WITH FEED CONTAINING LEMURU FISH OIL AND DRINKING AFRICAN LEAF JUICE

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ABSTRACT
This Goals of this research was evaluate the use of feed containing lemuru fish oil supplemented with African leaf juice (Vernonia amygdalina) in quail drinking water on the relative size of Japanese quail (Coturnix japonica). The experimental design used in this research was a completely randomized factorial design with 2 factors and 3 replications. The first factor is the dose of lemuru fish oil in feed (0%, 1.5%, and 3%) and the second factor is the dose of African leaf juice used in drinking water, namely (0 mL, 3 mL, 6 mL). The data analysis used was Analysis of Variance (ANOVA) and continued with the Duncan test if significantly different data was found. The results showed that the use of lemuru fish oil and African leaf juice had no significant effect on the relative size of the thymus, bursa Fabricius and spleen of Japanese quail. There was no negative interaction between the use of lemuru fish oil and African leaf juice on the quail's immune organs. The size of the quail's immune organs is within normal values. Giving African leaf juice up to 65 mL in drinking water and lemuru fish oil up to 3% in feed is safe to use as feed and drinking water for quail.

Keywords:
Africa leaf, Coturnix japonica, Lemuru Fish Oil

PHYSIOLOGICAL RESPONSE OF JAPANESE QUAIL (COTURNIX JAPONICA) THAT WERE GIVEN FEED CONTAINING LEMURU FISH OIL AND AFRICAN LEAF JUICE IN VARIOUS DOSES

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ABSTRACT
This research was conducted to evaluate the use of quail feed containing lemuru fish oil and African leaf juice in various doses on their physiological responses. This research used a Completely Randomized Factorial Design (CRDF) with 2 treatment factors and 3 replications. The first factor is the dose used for lemuru fish oil (0%, 1.5%, and 3%) and the second factor is the dose used for African leaf juice (0 mL/65 mL, 3 mL/65 mL, and 6 mL/65 mL). The data analysis used was analysis of variance (ANOVA) and continued with the Duncan Test if significantly different data was found. The research results showed that the use of lemuru fish oil and African leaf juice had no significant effect on the respiration frequency and rectal temperature of the quail. There is no interaction between the use of lemuru oil and African leaves on the respiratory frequency and rectal temperature of quail. The use of lemuru fish oil significantly (P<0.01) reduced the heart rate of quail. The use of African leaf juice does not affect quail's heart rate. There was a significant interaction (P<0.05) between the use of lemuru fish oil and African leaf juice on the frequency of quail heartbeats. The best treatment in this study was giving 1.5% lemuru fish oil and 3 mL/65 mL of African leaf juice to quail because it can reduce heart rate as an indication of reducing stress in quail.

Keywords:
Africa leaf, Japanesse Quail Egg, Lemuru fish oil, Physiologist respon

THE EFFECT OF THE USES OF WATER-SOLUBLE ACIDIFIER AND SAMPLE MEASUREMENT TIME ON BROILER CHICKEN AMMONIA LEVELS

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ABSTRACT
This study aimed to analyze the impact of using an acidifier and sampling time on ammonia levels in broiler chicken litter. This research used a completely randomized design (CRD). In this study, there were 4 treatments and 3 replications. The treatments in this study were T0= control, TI= use of tamarind acidifier, T2= use of pineapple peel fermentation acidifier, T3= 50% T1+ 50%T2. In this study, ammonia gas was measured in the morning, afternoon, and evening during the final 7 days of the maintenance period for each treatment. Data analysis was carried out descriptively. The results of the research show that ammonia gas has the highest value when measured during the day and the ammonia levels can decrease if given acidifier treatment. The best treatment for reducing ammonia gas levels is T3 acidifier treatment, namely a combination of tamarind acidifier and pineapple peel fermentation. The reduction in ammonia levels in this study was from 59.57 ppm to 23.92 ppm or 59.84 ppm.

Keywords:
Acidifier, amonia Litter, Broiler

POTENTIAL OF HERBAL IMMUNE PROBIOTICS AS IMMUNITY BOOSTERS IN KUB 2 CHICKENS

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ABSTRACT
Herbal immune probiotics are additive feed given to increase immunity so that it affects chicken performance. The aim of the research was to evaluate the immune potential that emerged in KUB 2 chickens that were given herbal immune probiotics. The research material is KUB 2 Chicken, a probiotic containing Lactobacillus sp and Bacillus sp bacteria as well as herbal ingredients such as turmeric (Curcuma domestica), Sambiloto (Andographis paniculata) and ginger (Curcuma xanthorizza). Treatment is administration of herbal immune probiotics through drinking water. There were 4 treatments and 5 replications with 5 chickens in each replication. Treatment includes: P0= control (without administration of immune herbal probiotics), P1= administration of immune herbal probiotics at 2 ml/L of drinking water, P2=4ml, P3=6 ml. Herbal immunity is given at the age of 14 days for one month. The research method is experimental. The research design used was a completely randomized design. Data analysis used ANOVA and continued with the Least Significant Difference Test (LSD). The research variables were the number of erythrocytes, immunoglobulin (Ig) G and immunoglobulin (Ig) E. The results of the study showed that giving immune herbal probiotics to KUB 2 chickens had no effect (P<0,05) on the number of erythrocytes and Ig E but had an effect (P>0,05) to Ig G. The average amount of Ig G (mg/mL) is P0=4.66±1.523, P1=10.22±5.615, P2=14.43±4.750, P3=16.89±5.165. The conclusion is that giving Immune probiotics can increase Immune G in KUB Chickens.

Keywords:
probiotics, immunity, herbs, KUB 2 chicken

EFFECT OF TRICHODERMA VIRIDE CONCENTRATION AND INCUBATION TIME ON CHEMICAL CONTENT OF AMMONIATED CORN STRAW

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ABSTRACT
The purpose of this study was to determine the effect of Trichoderma viride concentrations and incubation time on ammoniated corn straw on dry matter (DM), organic matter (OM), crude protein (CP), neutral detergent fiber (NDF), acid detergent fiber (ADF), dry matter digestibility (DMD) and organic matter digestibility (OMD). This study used an experimental method with a completely randomized design with a 3x3 factorial design with 4 replications. The treatments used: the first factor was the concentration of Trichoderma viride, namely C1 (105 CFU/g), C2 (106 CFU/g) and C3 (107CFU/g); the second factor was the concentration of incubation time, namely L1 (14 days), L2 (21 days) and L3 (28 days). Statistical analysis used was variance and if there was a difference, it was continued with the least significant difference Test (LSD). Based on the analysis of variance, it showed that the Trichoderma viride treatment showed a highly significant (P<0.01) on the content of NDF, ADF, DMD, and OMD. The incubation time treatment showed highly significant (P<0.01) on DM, OM, CP, NDF, DMD and OMD, and had a significant (P<0.05) on ADF. While the interaction showed a significant (P<0.05) on DM and OM. From the results of the study, it can be concluded that the best treatment was obtained at C2L3, with DM 84.28% and OM 92.30%.

Keywords:
Corn Straw, incubation time, Trichoderma viride, concentration

RELATIONSHIP BETWEEN WATER QUALITY PARAMETERS AND PHYTOPLANKTON ABUNDANCE IN INTENSIVE VANNAMEI SHRIMP CULTIVATION IN SITUBONDO, EAST JAVA

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ABSTRACT
Optimal shrimp growth and harvest are greatly influenced by water quality as the dominantfactor in influencing shrimp growth and survival. The aim of this research is to analyze therelationship between water quality and phytoplankton abundance. This research uses asurvey method. Determination of stations and sampling points using the purposive samplingmethod. The composition of phytoplankton found in the waters of vaname shrimp pondsconsists of 5 classes with a total of 9 genera, while when it is sunny the number is greater (12genera). Bacillariophyceae dominate waters when it rains while Chlorophyceae dominatewaters when it is sunny. The percentage composition of plankton species was as expectedexcept for the Cyanophyceae group when it was sunny. The genus Rhizosolenia was foundwhich is thought to be an indicator of eutrophication. The average value reported forphytoplankton from the three sampling stations during rain ranges between 3.06x106 - 5.48x106 ind/L. Not much different, the bright times obtained ranged from 4.03x106 -6.61x106 ind/l. Abundance at all sampling points indicates eutrophic waters (>15000). Airquality in general is no different and meets quality standards except for nitrate and phosphatevalues. The temperature and brightness parameters have the highest level of relationship withplankton delivery compared to other parameters. The quality of coastal waters is positiveexcept for pH and nitrate.

Keywords:
Abundance, Composition, Harvest, Rhizosolenia

THE EFFECT OF SHADE PLANTS TYPES ON COFFEE PRODUCTION AT WAJAK SUB-DISTRICT

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ABSTRACT
Wajak sub-district is one of the sub-districts where most people cultivate coffee plants. One crucial factor thatsupports the growth and development of coffee plants is the condition of the land and the type of shade plants used.Therefore, it is necessary to know the correct type of shade plant for coffee fields, which will affect coffee production inthe Wajak sub-district, Malang Regency. This research aims to analyze the effect of shade plant types on the productionof coffee fields in Wajak District, Malang Regency. The research was conducted on coffee fields dominated by sandy soilin the Wajak District. The research used a randomized block design with treatments consisting of shade plant types,namely PT-1 (coffee and pine), PT-2 (coffee, waru, mahogany), and PT-3 (coffee, waru, mahogany and sengon). Theparameters for determining shade plants are using pine, waru, mahogany, and sengon plants, and determining coffeeproduction is by measuring the wet weight of coffee beans (tons/ha). Determining land boundaries uses land map unitsbased on the characteristics of land slope, land use, and the same type of soil. The land map unit is divided into 11 landunits. Data analysis in the form of ANOVA tests, correlation analysis, and regression was processed using RStudio. Theresearch results show shade plant types have significantly different coffee production values (p < 0.05) in agroforestrysystems on predominantly sandy soil. This treatment had the highest production value at PT-1 with a value of 1.92tons/ha, while PT-2 had the lowest coffee production at 0.86 tons/Ha.

Keywords:
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THE EFFECT OF SILVER NANOPARTICLE DEPOSITION IN FILM COMPOSITE CELLULOSEGELATINE IN THEIR ANTIBACTERIAL ACTIVITY FOR WOUND DRESSING APPLICATION

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ABSTRACT
Ideal wound dressing is needed to enhance the wound healing rate. One of the mostpopular wound dressing materials is a composite of gelatine and cellulose. Gelatine was chosenbecause it has an Extracellular Matrix (ECM) structure that can enhance wound healing.Meanwhile, cellulose is an abundant biomass with high mechanical properties that reinforcethe film. Regrettably, these material does not have antibacterial activity. Meanwhile, one of thecharacteristics of an ideal wound dressing is its antibacterial activity because the sterilizedwound will enhance the wound healing rate. Usually, additional medicine is added to wounddressing to gain this property. One of the most popular antibacterial agents is silvernanoparticles (Ag Nps). Ag Nps has toxicity properties against bacteria and causes the ruptureof bacteria's cells. In this work, we proposed the Ag Nps deposition using immersion. The AgNps was analyzed using a spectrophotometer UV-VIS to determine the Ag Nps existence andthe Particle Size Distribution (PSD) to determine its diameter. The sample with Ag Npsdeposition is analyzed using FTIR to determine the bond interaction of Ag Nps with film andagar diffusion disc for antibacterial activity against gram-positive and negative bacteria. Thiswork successfully fabricates ag nanoparticles with a diameter of 37 nm. The FTIR analysisdepicts that the Ag Nps deposition did not change the chemical bonding of the sample,showing the Ag Nps bond with the film composite is a physical bond. Remarkably, the filmsample with the additional Ag Nps can withstand the antibacterial zone until the seventh daywith an inhibition zone of 2,1 mm and 5,5 for gram-negative and positive bacteria.

Keywords:
Antibacterial Activity, Film, Composite, Silver Nanoparticle, Wound Dressing,

THE EFFECT OF VARIOUS PLANTING MEDIA AND TYPES OF FERTILIZER ON THE GROWTH OF HERBAL CHILI CUTTINGS (PIPER RETROFRACTUM VAHL.)

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ABSTRACT
Herbal chili (Piper retrofractum Vahl.) is a type of spice plant that has great potentialin the culinary industry and traditional medicine. As an effort to increase the productivity ofherbal chilies, cultivation activities need to be carried out through the procurement ofappropriate seedling. Propagation of herbal chili plants is usually done vegetatively withcuttings. To increase the success of herbal chili cuttings, this can be done by usingappropriate planting media and applying fertilizer. This research aims to determine the effectof the type of planting media and fertilizer on the growth of herbal chili seedlings. Theresearch was carried out in the Greenhouse of the Agroecotechnology Study Program,Faculty of Agriculture, Trunojoyo University, Madura from August to November 2023. Theresearch used a factorial Randomized Block Design consisting of 2 factors, namely plantingmedia and type of fertilizer. The first factor, namely planting media, consists of three levels oftreatment, namely M1 (soil, husk charcoal), M2 (soil, compost), and M3 (soil, compost, huskcharcoal). The second factor was the type of fertilizer, consisting of four treatment levels,namely P1 (single fertilizer), P2 (NPK fertilizer), P3 (manure), and P4 (moringa LOF). Dataanalysis uses analysis of variance, if it shows differences, continue with the 5% DMRT Test.The parameters observed included plant length, number of leaves and number of shoots. Theresults of this study indicate that there was no interaction between planting media andfertilizer type. The use of planting media did not make a significant difference to plant length,but had a significant effect on the number of leaves and number of shoots. Meanwhile, thetype of fertilizer did not make a significant difference in plant length and number of leaves,but had a significant effect on the number of shoots.

Keywords:
herbal chilies, cutting, planting media, fertilizer, and growth

THE EFFECT OF WATER INTERVAL AND TYPE OF FERTILIZER ON THE GROWTH OF JASMINE (JASMINUM SAMBAC L.) CUTTINGS

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ABSTRACT

Jasmine (Jasminum sambac L.) is an ornamental plant that has high aesthetic and economic value, as well as various uses and high potential in agro-industrial development. One effort to increase the productivity and quality of jasmine is through a vegetative propagation process using cuttings. In carrying out grafting, the obstacle often faced is the slow formation of shoots and roots, so it is necessary to provide water and the right type of fertilizer. This research aims to determine the effect of watering intervals and types of fertilizer on the growth of jasmine cuttings. The research was carried out in the greenhouse of the FP Agroecotechnology Study Program, Trunojoyo University, Madura from September to November 2023. The research used a factorial randomized block design consisting of 2 factors, namely the interval of water application and the type of fertilizer. The first factor is the interval of water application, consisting of three treatment levels, namely A1 (once a day), A2 (every two days, and A3 (every three days). The second factor is the type of fertilizer which consists of four treatment levels, namely P0 (without fertilizer), P1 (urea fertilizer), P2 (NPK fertilizer), and P3 (POC). Data analysis uses analysis of variance, if it shows differences, proceed with the 5% DMRT Test. Parameters observed include plant height, number of leaves, and number of branches The results of this study show that there is an interaction between the water application interval and the type of fertilizer. The water application interval does not make a significant difference in plant height, number of leaves and number of branches. Meanwhile, the type of fertilizer does not make a significant difference in plant height and number of branches. but has a significant effect on the number of leaves.

Keywords:
Jasmine; Cuttings; Intervals; Water; Fertilizer

THE RELATIONSHIP OF NDVI ON LAND COVER IN SMALLHOLDER COFFEE PLANTATIONS IN THE KLETEK SUB-WATERSHED

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ABSTRACT
Coffee plants are one of the plantation commodities that are in high demand in Indonesia and play an essentialrole in increasing non-oil and gas foreign exchange earnings. In 2020, the coffee plantations in Indonesia reached 1.25million hectares, dominated by smallholder plantations, which contributed around 98.14%, and large plantations (PB)around 1.86%. This places Indonesia as the fourth largest coffee bean producer in the world after Brazil, Vietnam, andColombia. Malang Regency, an essential region in East Java for coffee production, is in the region's top three largestcoffee producers. However, coffee production in Malang Regency experienced a drastic decline from 29,728 tons in 2021to 14,151 tons in 2022. This research was conducted on people's coffee plantations in the Kletek sub-watershed,classified as meso-landform. Coffee plants generally require shade as a cultivation method. Shade plants influence thegrowth of coffee plants in coffee cultivation. The method used to analyze land cover on people's coffee plantations isNDVI, which is classified into 5 classes. The accuracy points used were 30 points using the random stratified samplingmethod. The distribution of NDVI values in smallholder coffee plantations ranges from 0.4-0.5 with medium densityclass, 0.5-0.6 with high density, and >0.6 with very high vegetation density class. The relationship between NDVI andland cover conditions of coffee plants has a significant relationship (r = 0.55). This means NDVI strongly correlates withvegetation density in the smallholder coffee plantations in the Kletek sub-watershed.

Keywords:
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HEAT TREATMENT OF CARBON STEEL WITH SODIUM HYPOCHLORITE-BASED COOLANTS FOR ENHANCED SURFACE HARDNESS

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ABSTRACT
This research investigates the intricate interplay between quenching media and the heat treatment process on carbon steel, focusing on its consequential impact on material hardness. The study involves heating the steel to temperatures of 800°C, 850°C, and 900°C, followed by quenching using diverse cooling media, including sodium hypochlorite solution, coconut water, oil, and radiator water. The hardness tests employ Vickers hardness, complemented by microstructural analysis. Results from the Vickers hardness test reveal a significant enhancement in material hardness induced by heat treatment, emphasizing the efficacy of the chosen quenching media. At 800°C, hardness values (VHN) were 88.955, 102.441, 111.603, and 121.542 for sodium hypochlorite, coconut water, radiator water, and oil, respectively. At 850°C, hardness values peaked at 210,631, 285,076, 297.96, and 304,564 for oil, radiator water, sodium hypochlorite, and coconut water, respectively. Advancing to 900°C, hardness values reached their zenith at 345,986, 381,493, 391,373, and 452,825 for radiator water, oil, coconut water, and sodium hypochlorite, respectively. In contrast, untreated specimens displayed a hardness value of 79.579. These findings underscore the highest hardness value when using sodium hypochlorite as the quenching medium in the heat treatment of carbon steel at 900°C. This comprehensive exploration contributes valuable insights into the effects of heat treatment on material hardness, providing a nuanced understanding of the relationship between temperature, cooling medium, and resulting mechanical properties.

Keywords:
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OPTIMIZING TREATMENT PLANNING: ENHANCING PRECISION IN RADIOTHERAPY TREATMENT THROUGH THE ESTIMATION OF HOUNSFIELD UNIT VALUES FROM CT-SCAN DATA CALCULATION

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ABSTRACT
This research aims to enhance precision in radiotherapy treatment planning by optimizing the estimation of Hounsfield Unit (HU) values through CT-scan data calculation as a reference. Radiotherapy is a commonly used therapy in the healthcare field to treat the abnormal and uncontrolled growth of cells in organisms, such as lung cancer, brain tumours, leukaemia, and bone tumours. Radiotherapy utilizes gamma rays to eliminate abnormal cells through irradiation, considering the appropriate radiation dose limits to minimize damage to normal tissues during the irradiation process. The absorption or radiodensity level of a tissue can be expressed by the Hounsfield Unit (HU) value, used to determine the attenuation value (radiation absorption coefficient for each tissue) using the attenuation value of water as a reference. The data processing method involves green foot software based on the Java programming language, which is multiplatform. The program's input is in the form of CT-scan images with Grayscale analysis, and the output consists of Hounsfield values. This process can provide more precise and effective treatment plans. The results of this research are expected to enhance precision in treatment planning, bringing significant benefits to disease management and patient care.

Keywords:
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THE INTERFACE OF INDUSTRIAL REVOLUTION 4.0 AND EDUCATION 4.0: IMPLICATIONS FOR ELT RESEARCH AND PRACTICE

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ABSTRACT
The developmental stage of industry has come to the phase known as the Industrial Revolution 4.0, which are characterized by such highly sophisticated advances as big data, internet of things (IoT), robotics, cyber security and artificial intelligence. This industrial revolution focuses on the use of smart technology of automation and digitalization and the use of electronics and information and communication technology (ICT) in manufacturing and services, including education and training. Meanwhile, to align with the development in industrial world, the concept of Education 4.0 is introduced. This stage of educational development utilizes the potential of digital technologies, personalized data, and open sourced content for educational practices. The interface of these two fields (industry and education) brings about some impacts on second language learning in general and ELT in particular. Shifting in the role of the ELT teachers and students, how the teacher teaches and how the students learn, how the learning materials could be conveyed to the students are just a few consequences to mention. The present paper will discuss in detail the characteristics of industrial revolution 4.0 and those of education 4.0 and how these two may affect the ELT research and practice. Further implications to the so called professional teachers of ELT are explored.

Keywords:
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EXAMINING THE ROLE OF STUDENTS' INTERACTION DURING AN ONLINE PEER ASSESSMENT ACTIVITY

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ABSTRACT
Peer assessment gets its fame nowadays. Good peer assessment depends on the ways how students interact with each other. Thus, this article studies the students' interaction in online writing peer assessment. This research provided data about how the students do the peer assessment in an online writing class and their preference in doing the peer assessment, whether they prefer to do it online or in a face-to-face setting. The study uses a qualitative approach with 32 students in writing class as the participants. The data were collected with a questionnaire and interview. The interview was conducted to strengthen the questionnaire's answers. The first question answered that when the students did the online writing peer assessment, they are assisted by online tools such as Zoom Meeting, Google Group, WhatsApp, Telegram, Moodle, and Google Classroom. Those tools are helpful because they helped them in increasing their writing product and saving time. In doing peer assessment, the data showed that the first language is preferred by the students. When the students were criticized by their friends, they felt that they deserve that because they thought they still have lack knowledge of writing. The students also perceived that whether online or face-to-face teaching and learning, peer assessment is still preferable to do. Thus, it can be inferred that online writing peer assessment is helpful. However, it is suggested to the further researcher to do an observation session during the peer feedback, and involve more participants. In addition, the teacher's perception can be a good idea.

Keywords:
students' interaction, online writing, peer assessment

PRODUCTION RISK ANALYSIS OF CAYENNE PEPPER FARMING AND FARMERS' BEHAVIOR FACING RISK

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ABSTRACT
Cayenne pepper is a plant that is quite vulnerable and risky to cultivate. This study aims to determine the risks of cayenne pepper farming production and farmers' behavior in facing risks. This research was conducted in Kediri Regency with a case study in Pagu Village, Pagu District. This study used a sample of 64 respondents determined by simple random sampling. The method used for production risk analysis is to determine the value of the coefficient of variation (CV). Furthermore, the behavior of farmers facing risk is known by looking at the value of reluctance in facing risk or K(s) value. The results of the analysis of production risk show a high production risk value where the KV value > 0.5. Production risks can occur due to weather changes or pest and disease attacks. In facing this risk, the behavior of the majority of farmers behaves risk neutral. The risk-neutral behavior carried out by cayenne pepper farmers is to allocate the same inputs for the next cayenne pepper farmer even though the level of risk of farming is high.

Keywords:
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ORGANOLEPTIC QUALITY AND TOTAL LACTIC ACID BACTERIA OF COW'S MILK KEFIR PROCESSED WITH DIFFERENT TYPES OF MILK

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ABSTRACT
This study aims to analyze the organoleptic quality and total lactic acid bacteria (LAB) of cow's milk kefir processed from various types of milk. The research was conducted from January to March 2023 at the Food Laboratory, Faculty of Animal Husbandry, University of Islam Malang. The materials used in the research were fresh milk, UHT, skim milk powder, 5% kefir seeds, distilled water, MRS agar, 70% alcohol. The equipment used were stainless steel pot, thermometer, glass cup, measuring cup, oven, autoclave, analytical balance, erlenmeyer, dropper pipette, spatula, test tube, petri dish, organoleptic form. The method used in this research is an experimental method using a completely randomized design (CRD) with 3 treatments and 4 replicates. The treatments were P0 (control, fresh milk), P1 (UHT milk), P2 (skim milk powder). The variables observed in this study were organoleptic quality (taste, texture, aroma) and total lactic acid bacteria. Data analysis used was analysis of variance, if there was a real effect or a very real effect then continued with the Duncan Multiple Range Test (DMRT) to determine differences between treatments. The results showed that various types of milk had a very significant effect (P<0.01) on organoleptic quality (taste, texture, aroma and liking) but no significant effect (P>0.05) on total LAB. The conclusion is that the type of milk has an effect on organoleptic quality but no effect on total LAB. Skim milk powder is recommended as a good raw material in producing optimal organoleptic quality and total LAB in cow's milk kefir.

Keywords:
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PLANT DIVERSITY ALONG THE CORRIDOR OF COFFEE-BASED AGROFORESTRY LAND IN THE BUFFER AREA OF BROMO TENGGER SEMERU NATIONAL PARK (BTSNP)

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ABSTRACT
This study investigates the plant diversity found within the corridor of coffee-based agroforestry land in the buffer area of Bromo Tengger Semeru National Park (BTSNP). The objective is to assess the impact of coffee-based agroforestry practices on the overall plant diversity in this environmentally sensitive region. A systematic sampling approach was employed to collect data on plant species richness, abundance, and composition. The results provide valuable insights into the benefits and constraints of coffee-based agroforestry in promoting plant diversity in the buffer area of BTSNP.

Keywords:
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EXPLORING MORPHOLOGICAL AND GENETIC DIVERSITY IN CENTELLA ASIATICA FROM INDONESIAN REGIONS

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ABSTRACT
This research explores the morphological and genetic variations of Centella asiatica, a plant known for its triterpenoid secondary metabolites, including asiaticoside and madecacoside, which possess diverse properties. Understanding the correlation between genetic variation and the plant's growth location is crucial for differentiating metabolite content. The study aims to analyze Centella asiatica plants collected from various locations in Indonesia. Employing qualitative and quantitative morphological analyses alongside genetic variation analysis using ISSR PCR, 52 samples were investigated, with 17 successfully morphologically and taxonomically identified as Centella asiatica. Genetic variation analysis using 10 ISSR primers resulted in the successful amplification of 12 samples among the 17 analyzed. The findings highlight the morphological consistency of Centella asiatica across diverse regions in Indonesia, affirming the accurate taxonomic identification of the samples. Moreover, the genetic variations observed provide insights into the plant's adaptability and potential implications for metabolite production. This research contributes valuable data for further studies on the cultivation and utilization of Centella asiatica, emphasizing the importance of considering both morphological and genetic aspects for comprehensive plant characterization. The outcomes have implications for plant breeding, conservation, and the pharmaceutical industry, as they underscore the need for a holistic approach when exploring the potential of Centella asiatica from different geographical origins.

Keywords:
Centella asiatica, Genetic variation, ISSR PCR, Morphological analysis, Triterpenoid

ANALYSIS OF SOIL ERODIBILITY INDEX WITH NDSI ON VARIOUS MESO-LANDFORMS OF SMALLHOLDER COFFEE PLANT AT KLETEK SUB WATERSHED

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ABSTRACT
The Kletek sub-watershed is located on the southern slope of Mount Kawi with various landform typecharacteristics because it is influenced by volcanic activity from Mount Kawi. So, the landform formed isvolcanic. Meso-landform studies have been developed to evaluate soil development and monitor agriculturalland. The type of soil formed in this Sub Watershed is dominated by Inceptisol and Andisol, where these soiltypes have moderate to high soil erodibility index. In addition, the Kletek Sub Watershed covers an area of17,845.97 Ha, with diverse topography and 56.81% dominated by rather steep to steep slopes (>15%). Thecondition of the land will trigger erosion. On the other hand, most farmers cultivate robusta coffee plants basedon community coffee plantations. Based on the condition of the land, it is necessary to mitigate erosion throughthe soil erodibility method approach (100K=1.292 [2.1M 1,14 (10 -4) (12-a) + 3,25 (b-2) + 2,5 (c-3)]) based onNDSI (Normalized Difference Soil Index) from Sentinel 2A imagery, to prevent a decrease in coffee production.The parameters used are soil texture, organic matter, structure, and permeability to determine erodibility, andNDSI transformation value. The method used to test the feasibility of the model is statistical analysis forvalidation using the MAPE method. Then an ANOVA (Analysis of Variance) statistical test was carried out todetermine the relationship between erodibility values and landform. The distribution of erodibility in the KletekSub Watershed is low to very high. Based on the results obtained, it is known that the field erodibility value hasa reasonable forecasting MAPE value of 36%. The results of the ANOVA statistical analysis test showed that theerodibility value has a relationship with various mesolandforms (p(value)<0.05).

Keywords:
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FIXING ERROR NODE ON TREE TOPOLOGI USING GRAPH COMPUTATION ON FIBER OPTIC PROBLEM

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ABSTRACT
One of the problems in network topology is the length of time for workers to perform network maintenance.This happens because the fiber optic cable installation error is very large when done manually, it is necessary to testsignal reception as a form of security for sending fiber optic cable data by conducting two-way trials, but it is difficult todetermine the point of error because you have to look for 2 possible errors from 1 point network installation. So it isnecessary to find the most appropriate error node to minimize worker maintenance points. This study aims to determinethe most appropriate error node by using a computational graph that will obtain error nodes through network evaluation.An algorithm was obtained that succeeded in determining the most appropriate error node using data on the client'sdownload speed and upload speed, after evaluating the data, the error points will be labeled which will then be furtherprocessed to determine the location of the most appropriate error points.

Keywords:
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PREDICTING THE POTENTIAL OF MITRAGYNA SPECIOSA AS A MORPHINE SUBSTITUTE USING IN SILICO ANALYSIS

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ABSTRACT
One of the endemic plants found in Indonesia is Mitragyna speciosa, which is known locally as "kratom" in Kalimantan. An empirical study is required before using kratom as a medicine downstream, so that it may be used to target areas of health, particularly People in Kalimantan report that kratom can provide pain relief similar to that of morphine, relaxing and soothing the body and enhancing happiness and energy in those who use it. Dopaminerelated chemicals in the brain are responsible for the state of happiness. The ethanol extract of kratom leaves was analyzed in this study by LCMSMS to determine the amount of its active component. Afterwards, using SwissADME, Swissprotein, and Protox II to assess the toxicity of the compounds, estimate their potential. Then, utilizing the 5aer protein, whose structure was found in the RSCB PDB, docking was used to ascertain the interaction with target proteins in this investigation. According to the study's findings, five possible chemicals have been identified: isorotundifoline, corynoxin B, mitragynine, isospeciofoline, and isospeciofoleine. The binding affinity values of mitraginine (-6.2), corynoxin B (-6.1), isospectiofoline (-5.8), isosectiofolein (-6.2), and iso-orotundefoline (-5.8) are obtained through docking with 5aer proteins. In contrast, morphine has a binding affinity of -7. An indicator of a compound's affinity for the target protein is its binding affinity. In comparison to morphine, the molecule contained has a lower binding affinity value. The five compounds found have the same binding side to the 5-aer protein as morphin, i.e., to the TRP30 and GLN 32 sides, which are the active sides of the 5-aer protein; however, the molecule contained has a lower binding affinity value than morphine. Indicating that kratom and morfin have similar effects is the similarity of the bonding side between the five constituents of kratom. These projections suggest that kratome may be an effective alternative medication to morfin, but more in vivo and in vitro studies are required to fully explore kratome's potential as a alternative therapeutic.

Keywords:
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PROTOTYPE DESIGN OF AUTOMATIC IRRIGATION SYSTEM CONTROL BASED ON IOT USING SOLAR ENERGY

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ABSTRACT
The flow of irrigation water on agricultural land is the most important factor influencing agricultural production quality. As a result, irrigation water flow regulation must be installed in order to evaluate water release based on agricultural land needs in real time and avoid excess irrigation water on agricultural land. In this paper, we create a prototype for irrigation door automation based on the Internet of Things, using solar energy sources. The device detects soil moisture on agricultural land and water levels in irrigation canals using humidity and ultrasonic sensors. Because the system is disconnected from the power grid, it is powered by solar panels. According to the test results, the ultrasonic sensor inaccuracy is roughly 0.22%, and the humidity sensor can identify wet and dry soil conditions. The average response time for the irrigation control system for opening and closing the door is roughly 1 second, whereas the response time for transferring data to the IoT system's blinker is 2.5 seconds.

Keywords:
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DEVELOPMENT OF REUSEABLE BIO-COMPOSITE ANIMAL BONE-PAPAYA LEAF CATALYST FOR SUSTAINABLE BIODIESEL PRODUCTION

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ABSTRACT
The growing need for alternative fuels to reduce the exhaust gas emissions from the heavy vehicles and marine transportation was inevitable. Biodiesel is a sustainable fuel derived from biomass includes vegetable oils, animal fats etc. Recently, biodiesel production using homogenous catalyst from chemical industries. This catalyst is corrosive, leading to wastewater cumulative, and expensive. This study proposes a sustainable green catalyst to produce biodiesel from waste cooking oil. The present catalyst was derived from Carica Papaya Leaf mixed with waste chicken bones (50:50) by weight. The conversion method used transesterification with the variation of methanol to oil ratio (MTOR) 5:1, 9:1, and 12:1 at a constant temperature of 65 °C for 80 minutes. The green catalysts were varied from 2%, 4%, and 6 % by weight. The results showed that the green catalysts exhibit the highest conversion rate up to 97.1%. In addition, the present biodiesel has been tested and complied with SNI 7182:2015. Therefore, the present green catalyst proved to be a suitable catalyst for biodiesel production

Keywords:
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OPTIMIZATION PARAMETER OF STIR CASTING ON MECHANICAL PROPERTIES OF AL-SI REINFORCED BY NANOMATERIAL

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ABSTRACT
Al-Si alloy is one of material that widely used in industrial field, such as automotive and aircraft industries. Al-SI alloy has good properties, it is light, cheap, and resistant from corrosion. But compared to other commercial metals, Al-Si alloys have relatively lower strength. Therefore, an effort was made to improve the mechanical properties Al-Si alloy by mixing with nanomaterials Fe2O3 and Fe2O3 Doped graphene. Fe2O3 is an oxide material that is very interesting to study because different calcination temperatures can produce magnetic materials of various types. Meanwhile, graphene is an interesting material to study because it has various unique properties such as mechanical, optical, thermal and electrical properties. The research method in this study is an experimental method, where before the experiment is carried out, parameter optimization is first carried out using the Taguchi method. The parameters used in this research are temperature and holding time. The research results show that the parameters that have an influence on improving the mechanical properties of Al-Si alloy are holding time at rank 1, and temperature at rank 2.

Keywords:
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SANITATION TECHNOLOGY AS DEFECATION-FREE EFFORTS

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ABSTRACT

A healthy environment is a condition where an environment is free from waste that can cause health problems. One of the factors affecting healthy sanitation is open defecation behavior by the community, which usually has dwellings close to the river. People who usually have dwellings adjacent to the river. Meanwhile, the achievement of national targets aaccording to RPJMN 2020-2024 and also one of the SDGS targets, decided that there was a need for increasing access to adequate and equitable sanitation for all communities and stop the practice of open defecation in the open. ODF (Open Defecation Free) or defecation only in latrines, is one of the efforts that can be done to achieve a healthy residential environment. efforts that can be made towards a healthy residential environment. it aims to plan the piping network and communal wwtp planning as a way to improve sanitation facilities in the area. Planning as one way to improve sanitation facilities in the area and to minimize flooding. Based on the results of the analysis, it is known that the clean water discharge used by the community in Slambrit Village, Pasuruan Regency who do not have latrines is 30 m3/day. Have latrines is 30 m3 /day. The resulting wastewater discharge is 24 m3/day. The diameter of the pipe used based on the calculation results obtained PVC pipe diameter 110 mm as a sewer pipe to the ABR WWTP. This pipe network planning Using the SHP application to determine the elevation of each house and the laying point of the communal WWTP. Communal WWTP. The quality of wastewater used is the quality of Welang River wastewater, which is calculated using data from the Environmental Agency is calculated using data from the Pasuruan Regency Environmental Agency. The result of the calculation of the flow velocity in the pipe is 0.84 m/sec with a 2% slope with an upflow velocity of 0.4 m/hour

Keywords:
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THE INFLUENCE OF GREEN BUILDING FACTORS ON HOUSING DEVELOPMENT DECISIONS

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ABSTRACT
The concept of green building as an alternative in minimizing environmental damage applied to construction. The application of the green building concept in Indonesia is still not recognized by the general public because green building requires high initial costs. However, the encouragement to apply the green building concept continues to be intensified, requiring developers to apply the green building concept to the property to be built. The developer needs a reference to decide whether investing in a property with an environmentally friendly concept is the right investment decision. Based on this description, it is necessary to have an efficient method and the right model in the development of green building. The parameters that will be used in this research are project manager, marketing manager, design manager, research & development manager, research & development marketing manager, general manager, senior manager, associate director. The method used is exploratory and uses survey methods to obtain data and conduct analysis using applications. The purpose of this research is to analyze the most influential factors in the application of the green building concept to investment decisions. on the application of the green building concept to investment decisions

Keywords:
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INVESTIGATION OF THE SIZE OF THE CARBURETOR VENTURI HOLE IN AN INTERNAL COMBUSTION ENGINE USING RON 95 FUEL MIXED WITH BIOETHANOL

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ABSTRACT
This research presents the results of an investigation into the performance and exhaust emissions of a 4-stroke 1-cylinder combustion engine, So that the engine to produces optimal energy, the right fuel is needed so that it can reduce exhaust emissions which are considered very dangerous for the survival of living things. Bioethanol is considered to be able to optimize the combustion reaction in the form of CO and HC produced, however, bioethanol contains less energy than gasoline. The aim of this research is to analyze RON 95 gasoline fuel mixed with 15% boiethanol fuel with a ratio of the size of the carburetor venturi holes 26 and 28. From the research results obtained, fuel with a mixture of bioethanol has lower levels of exhaust emissions than gasoline without the mixture it can be seen that using venturi 26 the average CO level decreased by 30,3%, HC decreased by 36,6%, CO2 decreased by 26%, while O2 levels increased to 16,4%. Compared to using a venturi 28 CO levels decreased by 18,4%, HC decreased by 50,3%, CO2 decreased by 39%, while O2 levels increased by 22,3%. Judging from the performance results obtained using venturi 26 and 28 the average torque and MEP increased by 20%, while power using venturi 26 increased by 13,1% and venturi 28 increased by 7,8%, fuel consumption using venturi 26 decreased by 2,9% and venturi 28 decreased by 5,5%, this is based on the independent variables on throttle opening and the load on the given disc brake prony.

Keywords:
RON 95, Bioethanol, Venturi, Performance, Exhaust Gas Emissions

AUTOMATIC MASK DETECTION SYSTEM AND THERMAL SCANNER TO MEASURE BODY TEMPERATURE BASED ON DEEP LEARNING

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ABSTRACT
This research is the development and implementation of an automatic mask detection system integrated with a thermal scanner to measure body temperature based on deep learning. The main goal of this research is to improve public safety and health by detecting users who are not wearing masks and accurately measuring body temperature in public environments. The method used includes the use of deep learning algorithms to train an object detection model to recognize human faces and detect whether the user is wearing a mask or not. Apart from that, this system is also equipped with a thermal scanner to measure body temperature non-contactly. The integration between mask detection and body temperature measurement provides an effective solution in identifying individuals who could be potential virus spreaders. This article covers a performance evaluation system using a dataset that includes a variety of lighting conditions and facial poses. Experimental results show that the deep learning-based mask and thermal scanner detection system is able to provide high accuracy in recognizing user compliance with mask use and measuring body temperature.

Keywords:
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HOME WINDOW AND DOOR CONTROL SYSTEM BASED ON ISTIWA TIME AS RECOMMENDED BY HADITH

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ABSTRACT

Morning time is often considered a time when fresh air can improve air quality, by opening windows at dawn, the air circulation in the house will be good. Islam teaches the principles of health, hygiene and human well-being. As for closing the doors and windows in the evening, there are several hadiths that say:"Do not let go of your livestock and your children when the sun sets, because the devil scatters when the sun sets until the beginning of the time of Isha." (Muslim no. 2113). (HR. Muslim no. 2113).By creating an automatic control system to close and open the windows and doors of the house in accordance with the Hadith recommendation, it will help Muslim citizens to be more obedient and able to follow the Hadith. The system moves the window through a servo motor, servo control from ESP32 with API's given istiwa time to find out the prayer schedule in this case before the maghrib prayer and before the morning prayer.

Keywords:
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AN ANALYSIS OF IRRIGATION SLUICE PERFORMANCE IN IOT-BASED OPEN CANALS

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ABSTRACT
The study aimed to determine the performance of the microcontroller or IoT-based (Internet of Things) irrigation canal sluice assembly, which was applied to farmers. They can operate the sluice efficiently with a smartphone. Field research involving farmers was conducted by piloting the Participatory Rural Appraisal (PRA) framework. The sluice was driven using a servo motor, and the output was a water level value that was displayed and controlled via a smartphone. The water discharge passing through the door was automatically observed and manually calculated. The results of the discharge were continuedly calculated several times to know the specific energy of the flow. The height value from the observation of the automatic sluice was then compared with the theoretical water discharge value. The theory and experiment based on IoT-specific energy in the field using T-test statistics showed that the value of T = 0.05. In contrast, T = 2.22814 means T count < T table means Ho was accepted, so there was no significant difference between the two mean values. The results of this study indicate that the sluice IoT-based design can operate well.

Keywords:
Sluice, Automatic, Irrigation, Arduino, IoT, Performance

DESIGN OF AN ANDROID-BASED E-SMART APPLICATION FOR MEMORIZING THE QUR'AN USING THE RAD METHOD

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ABSTRACT
It is hoped that the e-Smart Al-Qur'an Memorizing application will be a valuable tool for individuals who wish to memorize and understand the Al-Qur'an better. With complete features and a structured approach, this application can help users achieve their goals in studying the Koran more efficiently and effectively. The main features of this application include juz and surah settings, audio recording, memorization recording, Tajwid guide, as well as exams and evaluations. Apart from that, the user-friendly interface makes it easy to use by various groups. This application also provides high-quality Al-Qur'an content, with high-quality sound and accurate text. This Android-based e-Smart Al-Qur'an Memorizing application is expected to be a valuable tool in supporting the process of learning and memorizing the Al-Qur'an, helping individuals achieve the goal of studying the Al-Qur'an, and increasing understanding of the Al-Qur'an. this efficiently and effectively. The results of system testing produce an average system accuracy level of 90%.

Keywords:
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ANTI-INFLAMATORY ACTIVITY OF ETHANOL EXTRACT OF CANANGA ODORATA AGNAIST INHIBITION OF BOVINE SERUM ALBUMIN (BSA) DENATURATION

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ABSTRACT

Inflammation is the natural protective response to tissue damaged. Anti-inflammatory used to treatment that reduces inflammation or swelling. The commonly used drugs for the treatment of inflammation are nonsteroidal anti-inflammatory drugs (NSAIDs) and SAIDs, but it's has many adverse side effects especially gastric irritation. Cananga odorata is known has antiinflamatory activity. This study to evaluate antiinflamatory potential of Ethanol extract of C. odorata using in vitro models such as inhibition of protein denaturation. The extraction method used was maceration with ethanol solvent for 24 hours. The extract obtained was evaporated, then a phytochemical screening test was carried out to identify flavonoids, phenolics, saponins, alkaloids and terpenoids. Next, an anti-inflammatory test was carried out using the protein denaturation method. The protein used is bovine serum albumin (BSA). Anti-inflammatory activity is expressed in IC50. The positive control used diclofenac sodium. The results of phytochemical tests on the ethanol extract of C. Odorata are known to contain secondary metabolites of flavonoids, phenolics, alkaloids and terpenoids. The anti-inflammatory activity of the ethanol extract of C. odorata with an IC 50 value of 161.14 ppm while the positive control was 24.11 ppm. The ethanol extract of C. Odorata has anti-inflammatory activity in the weak category.

Keywords:
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TOXICITY ASSAY OF CENTELLA ASIATICA ON HUMAN VEIN ENDOTHELIAL CELLS CULTURE INDUCED BY ANGIOTENSIN II

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ABSTRACT

To identify whether herb-based medicine is safe for hypertension treatment, it is important to perform toxicity effects of herbs. Centella asiatica (CA) leaf is well-known herb to cure certain diseases. Especially in hypertension, we have to know the effects of CA on vascular tissue. This study was established to observe whether methanolic extract of Centella asiatica on human vein endothelial cells culture (HUVECs) induced by Angiotensin II (Ang II). This research was generated on certain experiment steps: plant determination, methanolic extraction, cell preparation, cell harvest, and cytotoxic assay. The extraxction of CA was conducted by maceration method using methanol 95%. Cytotoxic test on HUVECs was generated by MTT assay using two different concentrations: 12.5 and 25 µM/mL with 24 hours exposures of both Ang II and CA extract. Data analyses was using one way ANOVA followed by least significant difference. It was considered significant at p less than 0.05. Our study showed that methanolic extract of CA provided no toxicity on HUVECs induced by Ang II. Both concentrations of methanolic extract of CA have cell viability percentage more than 100%. Exposure of methanolic extract of CA significantly increased cells viability ($p<0.05$) induced by Ang II. It can be concluded that Centella asiatica is safely used for treatment in vascular related damage.

Keywords:
Centella asiatica, HUVECs, cytotoxic, Angiotensin II

PROFILE OF DETERMINANT FACTORS OF INDEPENDENT STUDY READINESS IN MEDICAL STUDENTS

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ABSTRACT
Currently, medical students who follow the Problem-Based Learning (PBL) method cannot optimally utilize their independent study time, resulting in decreased academic achievement and an increase in the study period. Interaction with people around, time, and place of learning are external factors of self-directed learning readiness. The internal factors are management, self-control, and the desire to learn. These two factors are the determining factors. This study explores the external and internal determinants of self-directed learning readiness in medical students. This research uses a qualitative research design with a phenomenological approach regarding the external and internal determinants of self-directed learning readiness in medical students. Data collection used Focus Group Discussion (FGD) techniques. The respondents in this study were 24 students from I and II classes divided into two groups. The sampling method used is Maximum Variation Sampling. Data analysis using the Miles & Huberman model and coding was conducted using ATLAS.ti version 9 software. The highest differences in internal and external determinants of self-directed learning readiness in I and II students are the self-control category with a percentage (33% and 50%) and the family category with a percentage (75% and 92%). The lowest difference between internal and external determinants of self-directed learning readiness is the learning objective category with a percentage (17%) and the aspect category with a percentage (8%). The internal determinant factor for self-directed learning readiness in medical students is self-control, while the external determinant factor for self-directed learning readiness is the family.

Keywords:
Self-directed Learning Readiness, Problem-Based Learning, Determinant Factors

TOWARDS INCLUSIVE HEALTH: EXPLORING MICRORNA-7 AS A MOLECULAR TARGET IN PARKINSON'S DISEASE WITHIN THE CONTEXT OF SUSTAINABLE DEVELOPMENT GOALS

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ABSTRACT
Parkinson's disease (PD) remains a significant global health challenge, demanding comprehensive research efforts to uncover novel therapeutic avenues. Over the past decade, microRNA-7 (miR-7) has emerged as a key player in the intricate molecular landscape of PD, influencing neuroinflammation and synaptic plasticity. MiR-7's involvement in modulating these fundamental aspects of neuronal function positions it as a promising candidate for targeted interventions to mitigate PD progression. This review critically examines the potential of miR-7 as a molecular target in the pursuit of inclusive health strategies for PD within the broader framework of Sustainable Development Goals (SDGs). As we delve into the potential of miR-7 as a molecular target, the review assesses its implications for innovative therapeutic approaches in PD. This review emphasizes the importance of exploring miR-7 as a molecular target in Parkinson's disease within the context of Sustainable Development Goals. By intertwining molecular insights with global aspirations for inclusive health and societal well-being, we strive towards a holistic approach that addresses the complexities of PD while contributing to broader initiatives for sustainable development.

Keywords:
Parkinson's disease, microRNA-7, Sustainable Development Goals

STUDY COMPUTATIONALLY: COWPEA SEEDS (VIGNA UNGUILATA) INHIBIT THE ACTIVITY OF THE ENZYME B SECRETASE AND BUTYRYLCOLIENSETERASE AS AN ANTI-ALZHEIMER

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ABSTRACT
The beta secretase enzyme plays an important role in the occurrence of Alzheimer's Disease (AD). AD is a progressive degenerative disease characterized by decreased cognitive abilities and memory, accompanied by psychological disorders. Cowpeas are a leguminaceae plant which is known to contain active compounds from the flavonoids, phenols, alkaloids and terpenoids. Various studies state that active compounds in the flavonoid group have the potential to prevent AD, but the exact mechanism of this prevention is not yet known. This research aims to determine the mechanism by which active compounds in cowpea seeds inhibit the occurrence of AD through the mechanism of inhibiting β-secretase and butyrylcolienseterase (4XII). Research was carried out laboratory and computationally. Identification of active compounds from cowpea seeds using the LCMS method. Prediction of the mechanism of active compounds in cowpea seeds as prevention of AD was carried out computationally using the autodoc vina tool. The affinity indicator for active compounds is measured from the free and binding energy values for the active site amino acid residues of the β secretase and butyrylcolienseterase (4XII) proteins. The smaller the free energy value and the greater the percentage of bonds to amino acid residues that are the same as the control, the greater the affinity and it works similarly to the control. Visualization using Biovia Drug Discovery Studio. The active compounds identified from LCMS and predicted to have the affinity to inhibit β secretase and butyrylcolienseterase (4XII) to prevent AD are Quersetin, vitexin, and epicatechin, but their potency is lower than the control. The active compound in cowpea seeds is predicted to have the potential to prevent AD by working to inhibit β-secretase and butyrylcolienseterase.

Keywords:
cowpea seeds, Alzheimer's Disease, β Secretase, Butyrylcolienseterase

EFFECT OF VARIATIONS IN CATIONIC AND NONIONIC SURFACTANTS IN MEFENAMIC ACID EMULSION ON ANTI-INFLATION ACTIVITY

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ABSTRACT
Inflammation is an effort of the body that aims to destroy an attackingorganism, or remove irritants, and regulate the degree of tissue repair. The most commoninflammatory disease is osteoarthritis (OA). Treatment for inflammation is commonlyused NSAIDs. Mefenamate acid is a group of non-steroidal anti-inflammatory drugs(NSAids) that have anti-inflamatory, analgesic, and antipyretic effects. Oral treatmentwhich, when used over a long period of time, will result in side effects such asgastrointestinal, hepatotoxic, and nephrotoxic. Therefore, there is a need for otheralternatives such as the development of NSAIDs with topical routes. The aim of this study was to compare the differences between cationic and nonionic surfaces in thepreparation of mefenamate acid emulgel against anti-inflammatory activity. These tests are physics tests (homogeneity, uniformity, organoleptic, viscositytests) and chemical tests. (pH). Then the anti-inflammatory activity was tested using anagent that measured the thickness of the edema using a spike. The study used 24 malemice that were divided into 4 groups (cationic emulgel base, nonionic emulsion base,cationic mefenamate acid emulge, nonionic mephenamate acid emulsions) and in eachgroup 6 mice. The measurement was done in 1 hour once for 6 hours and then analyzedusing one way ANOVA. The results were obtained in preparation of acid mefenamate emulgel withorganoleptic testing that has a semi-solid consistency, has a white colour with a weakaroma. On the pH test the average obtained on the cationic emulgel was 7.6 and on thenonionic emulsion was 4.7. In a dispertion power test for the cationic and nonionicemulgates of Formula TB, B1, B2 obtained the highest average result of B2. Studies of cationic and nonionic mefenamate acid emulsions showedorganoleptics that have a semi-density, stable consistency, and almost the same pH.

Keywords:
Mefenamic acid, emulsions, surfactants, inflammation, osteoarthritis

MOLD HAUSTORIUM OF MANGO MISTLETOES (DENDROPHTHOE PENTANDRA (L.) MIQ)

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ABSTRACT
This study aimed to determine the antioxidant and antibacterial activity of endophytic mold haustorium of mango mistletoes (Dendrophthoe pentandra (L.) Miq) leaves. The method used in this research was an experimental method with quantitative descriptive data analysis. Endophytic mold isolates were grown and purified several times on Potato Dextrose Agar (PDA) media and fermented on sterile Potato Dextrose Yeast Broth (PDYB) liquid media for 14-21 days. The research stages began with the preparation of tools and materials, sterilization of tools and materials, making media, rejuvenation of endophytic mold isolates, antioxidant tests using DPPH, test bacteria, fermentation of endophytic molds, endophytic mold extracts, antibacterial activity tests by serial dilution to determine the maximum and minimum values of inhibition. The isolates tested were 6 isolates of Endophytic Hautorium Mango (EHM), namely isolate EHM 1 or Colletotrichum spp., EHM 2 or Curvularia spp., isolate EHM 3 or Sacrocladium spp., isolate EHM 4 or Acremonium spp. The results obtained were: not all endophytic mold extracts from haustorium mango mistletoes have potential as antioxidants, such as EHM 1, EHM 3, and EHM 6. 50% inhibition of DPPH free radicals by endophytic mold extracts of haustorium mango mistletoes with isolate code EHM 2 showed better antioxidant potential than other isolates. Renewable antibacterial agents showed that all isolates had a pretty good inhibition against the growth of Escherichia coli bacteria. In the antibacterial test, isolate EHM 2 with a concentration of 25 ppm was found to be an isolate with a concentration that produced the largest diameter of the inhibition zone with a measurement result of 8.90 mm. Antibacterial and antioxidant activity tests on endophytic molds from haustorium mango mistletoes (Dendrophthoe pentandra (L.) Miq) endophytic mold isolates can be renewable antibacterial and antioxidant agents.

Keywords:
antioxidant, DPPH, endophytic, mistletoe

THE EFFECT OF TEA AND MANGO MISTLETOE EXTRACTS COMBINATIONS ON HYALINIZATION OF KIDNEY GLOMERULI IN HYPERTENSION RATS MODEL

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ABSTRACT

Hypertension is a degenerative disease leading to complications of kidney failure. Tea (BT) and mango mistletoe (BM) contain abundant antioxidant compounds. However, their potential to prevent complications of hypertension (kidney failure) has not been widely proven. This study aims to determine the protective effect of BT and BM extracts on glomerular hyalinization in hypertensive rat. Hypertension was induced in rats with Deoxycorticosterone Acetate (DOCA) 15 mg/KgBW subcutaneously and NaCl 2% orally. BT-BM was extracted with methanol solvent by maceration and then given to one group of rats before and another after hypertension induction. The doses of BT were 50 mg/kgBB, 100 mg/kgBB, and 200 mg/kgBB, as well as a combination of BT-BM at the same dose each for 28 days. Histopathological examination of the kidneys was carried out by observing hyalinization of the renal glomeruli and statistically analyzed using one-way ANOVA ($p<0.05$). Moreover, the study unpacked that giving a combination of BT-BM extract to the preventive group reduced glomerular hyalinization by around 30% compared to the control group ($p<0.05$), while there was no decrease in the curative group ($p>0.05$). Preventive administration of a combination of BTBM extract to male Wistar rats Rattus novergicus in hypertensive conditions exposed for 28 days at doses of 50 mg/KgBW, 100 mg/KgBW, and 200 mg/KgBW can significantly prevent renal glomerular hyalinization. Curative administration of methanolic extract of mango mistletoe to male Wistar rats Rattus novergicus in hypertensive conditions exposed for 14 days at doses of 50 mg/KgBW, 100 mg/KgBW, and 200 mg/KgB can reduce renal glomerular hyalinization. Curatively administering a combination of methanolic extracts of tea mistletoe and mango mistletoe to male Wistar rats Rattus novergicus in hypertensive conditions exposed for 14 days at doses of 50 mg/KgBW, 100 mg/KgBW, and 200 mg/KgB can reduce renal glomerular hyalinization. The three-dose variations did not show significant differences, so EMBTBM controlled this effect at a dose of 50 mg/KgBW and EMBM at a dose of 50 mg/KgBW, which was the optimum dose in reducing renal glomerular hyalinization in male Wistar rats.

Keywords:
Tea Mistletoe, Mango Mistletoe, hyalinization, kidney, hypertension

ANTI-INFLAMMATORY EFFECT OF EMPRIT GINGER RIZHOME ETHYL ACETATE EXTRACT (ZINGIBER OFFICINALE VAR. AMARUM) TOPICALLY ON CARRAGEENAN-INDUCED RAT PAW EDEMA

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ABSTRACT
Inflammation is the basis of most human diseases. In its treatment, the use of synthetic NSAID drugs is often associated with the emergence of unexpected side effects. The purpose of this study was to explore the active secondary metabolites contained in the rhizome of emprit ginger (Zingiber officinale var. amarum) and see its potency topically to decrease carrageenan-induced rat paw edema. Emprit ginger rhizome simplicia was extracted using the kinetic maceration method using ethyl acetate solvent. The extraction results were subjected to phytochemical screening and ointment preparations were made with concentrations of 5%, 10% and 20% which would be tested topically with a negative control of ointment base and a positive control of diclofenac sodium. The anti-inflammatory test was carried out by measuring the reduction in the thickness of rat paw edema induced by carrageenan with a caliper. Statistical analysis was carried out using the One-Way ANOVA test and continued with the Post-Hoc test. Phytochemical screening of emprit ginger rhizome extract showed that it contained alkaloids, flavonoids, phenolics, and terpenoids. The anti-inflammatory test showed an effect on reducing edema based on the results of calculating the percentage of edema and AUC of edema thickness, with values for each group at concentration 5% (51.24% and 35.91mmHour), concentration 10% (46.00% and 34.52mmHour), and concentration 20 % (47.03% and 35.03mmHour), and all were significantly different from the negative control group ($p<0.05$). Emprit ginger rhizome ethyl acetate extract contains alkaloids, flavonoids, phenolics, and terpenoids as an anti-inflammatories in reducing carrageenan-induced rat paw edema.

Keywords:
Emprit Ginger; Ethyl Acetate; Anti-Inflammation; Rat Paw Edema

DECOCTIONS OF CENTELLA ASIATICA, JUSTICIA GENDARUSSA, AND IMPERATA CYLINDRICA ARE ABLE TO REDUCE THE NUMBER OF HYALINE GLOMERULI AND PARS CORTICAL INTERSTITIAL TISSUE IN KIDNEY OF SPONTANEOUSLY HYPERTENSIVE-MODEL RA

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ABSTRACT

Hypertension can affect seemingly healthy persons for years without having any impact or generating mild symptoms. Hypertension produces endothelial dysfunction, which leads to an increase in ROS, an increase in Ang II from RAAS, and a decrease in renal blood flow. This contributes to kidney organ damage, including the development of interstitial fibrosis and vasoconstriction of afferent and efferent arterioles (the formation of glomerular capillary hypertension). CJI (Centella asiatica, Justicia gendarussa, and Imperata cylindrica) decoction contains active chemicals that are known to decrease tissue damage by decreasing the increase in ROS, suppressing RAAS, and lowering membrane potential to produce smooth muscle relaxation. The objective of this study was to see if CJI decoction are able to reduce the number of renal glomeruli and pars cortical interstitial fibrosis in kidney of hypertensive-model rat. The normotensive Wistar Kyoto rats (WKY) and hypertensive Spontaneously Hypertensive Rats (SHR) were used in this study. Each experimental animal weighing 180-200 grams was put into 3 (three) groups: control (WKY), hypertensive (SHR), and hypertensive administered CJI (SHR CJI). The control group received distilled water, whereas the treatment group received CJI decoction for 5 (five) weeks at a total CJI dose of 34.6 mg with a CJI delivery ratio of 9:9:5.4 mg/200gram Body Weight. Rats were slaughtered, and kidney organs were removed to be processed for tissue. Furthermore, the preparations were stained with Hematoxylin Eosin stain to determine the number of glomeruli hyalinisation and Masson's Trichrome stain to assess the number of pars cortical interstitial fibrosis. The preparations were examined with a trinocular microscope at a magnification of 200 times. One Way ANOVA was applied for statistical analysis, followed by the least significant difference (LSD) test. If $p<0.05$, the data was judged significant. CJI decoction administration considerably reduced the amount of renal glomeruli hyalinisation in the SHR group, specifically p 0.000 ($p < 0.05$). The number of hyalinised glomeruli in the WKY, SHR, and SHR CJI groups were: 9.75 ± 1.55; 78.58 ± 3.25; 49.83 ± 4.90 every 200µm. Furthermore, with p 0.017 ($p<0.05$), fibrosis of pars cortical interstitial tissue in kidney was considerably reduced in the SHR group. The percentage of fibrosis area of pars cortical interstitial in the WKY, SHR, and SHR CJI groups were: 26.52 ± 2.98%; 30.88 ± 1.58%; and 22.27 ± 1.43%. According to the findings of this study, CJI decoction can prevent renal tissue damage in spontaneously hypertensive rats by decreasing glomeruli hyalinisation and pars cortical interstitial fibrosis.

Keywords:
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IN VIVO TEST OF N-HEXANE EXTRACT OF EMPRIT GINGER (ZINGIBER OFFICINALE VAR. AMARUM) AS A TOPICAL ANTI-INFLAMMATORY

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ABSTRACT
Inflammation is the body's defense response to tissue injury caused by physical trauma, chemical or microbiological substances. Emprit ginger is a herbal plant, known to have ingredient that have anti-inflammatory effects. Such us alkaloids, flavonoids, saponins, phenolic and triterpenoid. Ginger is mostly used as a drink, so this research was conducted to prove the effect of n-hexane extract of emprit ginger applied topically on inflammation model of Wistar Rat. This research is an in vivo laboratory experimental research by making n-hexane extract ointment from ginger emprit. Inflammation induction was carried out by administering a 1% carrageenan solution to soles of the mice's feet. The mices then divided into 5 groups: positive control group (PK) received diclofenac sodium ointment as medication; negative control group (NK) received vaseline ointment as medication; and 3 study groups received 5% (K5), 10% (K10) and 20% (K20) of topically applied emprit ginger n-hexane extract. Measurement of the rat's sole's thickness is determined by measuring it every hour for 6 hours after being induced with carrageenan using a caliper. Measurement data Data is analyzed by using ANOVA one-way test with significant figure of $p < 0.05$. Based on calculations, the percentage of edema in the group NK had the smallest value 49.9%. At K5 it has a value of 58.4%, at K10 has a value of 51.9% and at a K20 it has a value of 57.3%. The results of the analysis showed that all test groups had significant results with the negative control ($p<0.05$). Emprit n-hexane extract at concentrations of 5%, 10%, and 20% topically applied of n-hexane extract of emprit ginger has an anti-inflammatory effect potential compared with diclofenac sodium.

Keywords:
Emprit ginger; N-hexane; Inflammation; Topical

THE EFFECT OF SOLID LIPID TYPE ON THE PHYSICAL AND CHEMICAL PROPERTIES OF NANOSTRUCTURED LIPID CARRIERS (NLC) DRUG DELIVERY SYSTEMS

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ABSTRACT

Nanostructured Lipid Carrier (NLC) is a lipid-based drug delivery system with a combination of solid and liquid lipid matrices stabilized by the addition of surfactants having a size of 10-1000 nm. Solid lipids, liquid lipids, and surfactants are the components of NLC. Solid lipids are needed in NLC to minimize the molecular diffusion process within the compound, leading to improved retention and chemical stability of bioactive components. This study aims to evaluate the physical and chemical properties of NLC preparations including particle size, PDI, viscosity and pH of the preparation. Laboratory experiments using independent variables of different lipid types, namely glyceryl monostearate and cetyl palmitate. Formulas 1 and 2 were repeated three times (n=3) and associated with dependent variables, namely physical properties consisting of organoleptics, viscosity, PDI, particle size and chemical properties, namely pH. Evaluated and analyzed with paired T-test, <0.05 was considered significant. The results of formula 1 and formula 2 obtained the same organoleptic properties. viscosity with lipid glyceryl monostearate averaged 913.33 ± 9.55 mPas and cetyl palmitate 2.45 ± 0.46 mPas (p<0.05). The mean pH, polydispersity index, and particle size of glyceryl monostearate were 4.65 ± 0.05; 2958.93 ± 979.16; 101.71 ± 6.07 and cetyl palmitate 4.75 ± 0.07; 24.90 ± 13.78; 239.62 ± 235.11, respectively. No significant difference was found. This indicates that the type of lipid affects the particle size of NLC. Glyceryl monostearate and cetyl palmitate solid lipids had an effect on the pilidispersity index and viscosity of NLCs, but no effect on pH, and particle size.

Keywords:
Nanostructured Lipid Carriers (NLC), Solid Lipids, Particle size

EFFECT OF VARIANT IN CATIONIC AND NONIONIC SURFACTANS IN MEFENAMIC ACID CREAM ON ANTIINFLAMASI ACTIVITY

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ABSTRACT
Inflammation is a normal protective response to tissue injury caused by physical trauma, damaging chemicals, microbiological activity. The most common inflammatory disease is osteoarthritis (OA). OA therapy generally uses chemical drugs such as oral NSAIDs, which if used long term will cause side effects such as gastritis. Therefore, other alternatives are needed, such as the development of topical NSAIDs. The aim of this study was to compare the differences between cationic and nonionic surfactants in mefenamic acid cream preparations regarding anti-inflammatory activity. This test is carried out by physical properties (homogeneity, spreadability, organoleptic, viscosity tests) and chemical tests (pH). Then the anti-inflammatory activity was tested using carrageenan and the thickness of the edema was measured using a caliper. This study used 24 male rats which were divided into 4 groups (cationic cream base, nonionic cream base, mefenamic acid cationic cream, mefenamic acid nonionic cream) and in each group there were 6 rats. Measurements were taken every 1 hour for 6 hours and then analyzed using one way ANOVA. The results obtained in mefenamic acid cream preparations in organoleptical tests are semisolid, white with weak arom. Homogeneity testing obtained all homogeneous preparations. For pH testing, the average in cationic creams was obtained with a value of 7.6 and in nonionic creams the average was obtained with a value of 4.64. In dispersion tests for cationic creams and nonionic creams Formula TB, B1, B2 produced the highest average B2. The results of cationic and nonionic mefenamic acid cream research showed organoleptis that has a stable semisolid consistency, and almost the same pH.

Keywords:
Mefenamic acid, creams, surfactants. inflammation, osteoarthritis

ANTI-INFLAMMATORY ACTIVITY OF RED SEAWEED (GRACILARIA VERRUCOSA) INFUTION AND DECOCTION AGAINST PROTEIN DENATURATION INHIBITION

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ABSTRACT

The prevalence of inflammatory diseases is still high in Indonesia. The use of anti-inflammatory drugs can cause various side effects such as necrosis, diabetes, and increased risk of infection, so alternative treatments such as natural ingredients are needed. Gracilaria verrucosa is thought to have anti-inflammatory potential because it contains various secondary metabolite compounds, but no research has been conducted on the anti-inflammatory potential. This study aims to determine the anti-inflammatory activity of decocta and infusa of red seaweed (Gracilaria verrucosa). Gracilaria verrucosa was extracted by decoctation and infudation methods. The extracts obtained were then subjected to qualitative phytochemical screening and drying by freeze dry method. Anti-inflammatory activity was performed by bovine serum albumin protein denaturation inhibition test, with diclofenac sodium as positive control. Anti-inflammatory test results were followed by linear regression to obtain the IC50 value. Gracilaria verrucosa decoction and infution contain alkaloid, saponin, and terpenoid. The yield of decoction was 22.175%, and infution was 21.373%. The IC50 value of Gracilaria verrucosa decoction was 397.38ppm, Gracilaria verrucosa infution was 490.74ppm, and the diclofenac sodium was 237.44ppm. Decoction and infution of Gracilaria verrucosa has weak antiinflammatory activity

Keywords:
Gracilaria verrucosa, decoctation, infudation, yield, active compounds, denatured protein, bovine serum albumin, IC50, anti-inflammation

EFFECT OF VARIANT IN CATIONIC AND NONIONIC SURFACTANS IN MEFENAMIC ACID EMULGEL ON ANTIINFLAMASI ACTIVITY

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ABSTRACT
Inflammation is an effort of the body that aims to destroy an attacking organism, or remove irritants, and regulate the degree of tissue repair. The most common inflammatory disease is osteoarthritis (OA). Treatment for inflammation is commonly used NSAIDs. Mefenamate acid is a group of non-steroidal anti-inflammatory drugs (NSAids) that have anti-inflamatory, analgesic, and antipyretic effects. Oral treatment which, when used over a long period of time, will result in side effects such as gastrointestinal, hepatotoxic, and nephrotoxic. Therefore, there is a need for other alternatives such as the development of NSAIDs with topical routes. The aim of this study was to compare the differences between cationic and nonionic surfaces in the preparation of mefenamate acid emulgel against anti-inflammatory activity. These tests are physics tests (homogeneity, uniformity, organoleptic, viscosity tests) and chemical tests. (pH). Then the anti-inflammatory activity was tested using an agent that measured the thickness of the edema using a spike. The study used 24 male mice that were divided into 4 groups (cationic emulgel base, nonionic emulsion base, cationic mefenamate acid emulge, nonionic mephenamate acid emulsions) and in each group 6 mice. The measurement was done in 1 hour once for 6 hours and then analyzed using one way ANOVA. The results were obtained in preparation of acid mefenamate emulgel with organoleptic testing that has a semi-solid consistency, has a white colour with a weak aroma. On the pH test the average obtained on the cationic emulgel was 7.6 and on the nonionic emulsion was 4.7. In a dispertion power test for the cationic and nonionic emulgates of Formula TB, B1, B2 obtained the highest average result of B2. Studies of cationic and nonionic mefenamate acid emulsions showed organoleptics that have a semi-density, stable consistency, and almost the same pH.

Keywords:
Mefenamic acid, emulsions, surfactants, inflammation, osteoarthritis

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