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黑龍江八一農墾大學

图书馆 咨询服务部

目录

1 收录概况

为及时了解学校最新 SCI、EI 收录引用情况，图书馆推出信息参考《收录引用报》，呈现学校最新 SCI、EI 收录引用信息，收录内容为我校教师为第一作者和合著者被 SCI、EI 收录的文献信息。

《收录引用报》有关说明如下：

一、图书馆所提供信息全部来源于 SCIE 和 EI 数据库。

二、以机构"Heilongjiang Bayi Agricultural University"为检索条件，时间范围 2025.08.07-2025.10.01。

三、本月报相关数据不保证 100%的完整性，不做决策依据，仅做参考，如需了解详细情况，需做进一步查证、查询，请以官方网站信息为准。

2 SCI 收录情况

（2025.08.07-2025.10.01）

SCI 索引库共收录我校教师发表的 78 篇文献，图表后附录 78 篇文献详细题录信息。

RESEARCH FIELDS	研究领域	篇数
Agriculture	农业	26
Automation & Control Systems	自动化和控制系统	2
Biochemistry & Molecular Biology	生物化学与分子生物学	3
Biodiversity & Conservation	生物多样性保护	1
Cell Biology	细胞生物学	1
Chemistry	化学	6
Engineering	工程	5
Environmental Sciences& Ecology	环境科学与生态学	1
Food Science & Technology	食品科学与技术	7
Genetics & Heredity	遗传学和遗传性	1
Immunology	免疫学	1
Medical Laboratory Technology	医学实验室技术	1
Microbiology	微生物学	1
Nutrition & Dietetics	营养和饮食学	1
Oncology	肿瘤学	1
Pharmacology & Pharmacy	药理学和药剂学	2
Plant Sciences	植物科学	8
Robotics	机器人学	1
Science & Technology - Other Topics	科技与技术-其他主题	4
Thermodynamics	热动力学	1

| Veterinary Sciences | 兽医学 | 4 |

表 1　我校 21 个研究领域发文篇数及详细题录信息

表 1　我校 21 个研究领域发文篇数及详细题录信息

第 1 条

标题: Unlocking sustainable biomass conversion: Enhanced cellulose degradation by a mutant Trichoderma viride JC-1U7

作者: Sun, JJ (Sun, Jiajia); Guo, A (Guo, Ao); Tan, LN (Tan, Lina); Wang, XY (Wang, Xinyu); Zhang, Y (Zhang, Yu); Wang, WH (Wang, Weihao); Zhang, Z (Zhang, Zhi); Liu, JS (Liu, Jiansheng); Zhang, SL (Zhang, Shenglong)

来源出版物: BIOMASS & BIOENERGY **卷:** 203 **文献号:** 108323
DOI: 10.1016/j.biombioe.2025.108323 **Published Date:** 2025 DEC

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摘要: Cellulose degradation is a critical process for sustainable biomass conversion, yet finding efficient microbial strains remains a challenge. Current industrial processes often rely on harsh chemical treatments or less efficient enzymatic systems. In this study, we isolated and characterized a novel Trichoderma viride JC-1, which exhibits high cellulolytic activity. Through ultraviolet (UV) mutagenesis, we generated a mutant strain JC-1U7, with enhanced cellulose-degrading capabilities. The mutant strain demonstrated significant improvements in filter paper activity (FPA), endoglucanase (CMCase), and exoglucanase (pNPCase) activities, with FPA reaching 0.49 U/mL on day 8, CMCase peaking at 3.3 U/mL on day 6, and pNPCase achieving 0.11 U/mL on day 8. Molecular docking and dynamics simulations revealed the structural basis for the enhanced 1,4-(3-D-glucan glucanohydrolase,1,4-(3-D-glucan cellobiohydrolase, and (3-1,4-glucosidase enzymatic activity, highlighting the critical roles of key amino acid residues in substrate binding and catalysis. The optimal conditions for Forestry waste's (PPGL) cellulose degradation by strain JC-1U7 were determined to be an inoculum volume of 5 %, pH 5, and a temperature of 25 degrees C for 8 days. These findings underscore the potential of strain JC-1U7 as a robust biocatalyst for sustainable biomass conversion, offering insights into the molecular mechanisms underlying its cellulolytic efficiency.

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文献类型: Article

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研究方向: Agriculture; Biotechnology & Applied Microbiology; Energy & Fuels

输出日期: 2025-10-01

第 2 条

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摘要: Objective: This study aimed to explore the mechanism by which increasing the temperature of drinking water in winter promotes sheep growth from a microbiological perspective. Methods: A total of 12 healthy male Hu sheep were evenly divided into two groups: one with drinking water at 12 degrees C (WT12) and the other at 25 degrees C (WT25), and they were raised for 60 days in the cold winter. Results: The WT25 group had higher average daily gain, serum immunoglobulin G, total antioxidant capacity, glutathione peroxidase, and superoxide dismutase, along with lower feed-to-gain ratio, serum cortisol, malondialdehyde, reactive oxygen species, and oxidative stress index when compared to the WT12 group (p<0.05). The concentrations of microbial crude protein, microbial density, autoinducer-2 signaling molecule concentration, and biofilm formation were higher in the WT25 group, while the ammonia nitrogen concentration was lower (p<0.05). The relative abundances of Muribaculum and Clostridia UCG-014, as well as the predicted metabolic pathways related to lipid metabolism, were lower in the WT25 group, whereas the metabolism of other amino acids showed increased abundances (p<0.05). Both principal coordinates analysis and analysis of similarities revealed no significant differences in rumen microbial communities between the WT12 and WT25 groups (p>0.05). Metabolomics analysis identified 12 differential metabolites, four of which were correlated with Muribaculum, Raoultibacter, and Coriobacteriales Incertae Sedis. Conclusion: These findings suggest that heated drinking water in winter may improve growth performance by increasing rumen microbial biofilm formation and enhancing serum antioxidant capacity in Hu sheep. This study reveals links between rumen microbial quorum sensing and critical parameters such as animal growth phenotypes, rumen metabolic characteristics, and specific bacterial genera. It offers innovative perspectives on enhancing animal feed efficiency through the modulation of rumen

microbial quorum sensing.

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第 3 条

标题: Genome-wide identification of the SAM-dependent methyltransferase members and functional analysis of GmSAMMt30 in soybean (Glycine max under salt-alkali stress

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摘要: Saline-alkali soil poses a severe threat to the cultivation and yield of soybean, which is an important oilseed and staple crop. As a key metabolic intermediate, S-adenosyl-l-methionine (SAM) and its associated methyltransferases (SAMMTs) play crucial but poorly understood roles in plant stress responses. This study investigated the expression of SAM-depend methyltransferase (SAMMt) family in soybean. A total of 69 identified GmSAMMt members were divided into 13 subfamilies with similar gene structures by phylogenetic analysis. The GmSAMMt members contained cis-acting elements involved in abiotic stress responses, hormone regulation, and plant growth and development. A tissue-specific expression analysis identified 43 GmSAMMt members with high levels of expression. Haplotype analysis and quantitative real-time PCR (qRT-PCR) screening identified GmSAMMt30 as the most promising candidate gene responsive to saline-alkali stress. In yeast heterologous expression assays, compared to the control strain INVScI(pYES2), GmSAMMt30Hap2 significantly enhanced the growth of recombinant yeast under

saline-alkali stress, whereas GmSAMMt30Hap1 exhibited markedly inhibited growth relative to GmSAMMt30Hap2. In transgenic soybean hairy roots, the GmSAMMt30Hap2 genotype showed significantly better phenotypic performance under salt-alkali stress than K599(pSOY1) with lower leaf wilting and content of reactive oxygen species (ROS). In contrast, the GmSAMMt30Hap1 genotype showed increased sensitivity to salt-alkali stress, with more severe leaf wilting and a higher ROS content compared to K599(pSOY1). Therefore, the study lays the foundation for in-depth research on the soybean salt-alkali tolerance traits and its application in molecular marker-assisted breeding for this legume crop.

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研究方向: Agriculture; Plant Sciences; Genetics & Heredity

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第 4 条

标题: Field-Scale Maize Yield Estimation Using Remote Sensing with the Integration of Agronomic Traits

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被引频次合计: 0

摘要: Maize (Zea mays L.) is a key global cereal crop with significant relevance to food security. Maize yield prediction is challenged by cultivar diversity and varying management practices. This preliminary study was conducted at Youyi Farm,

Heilongjiang Province, China. Three maize cultivars (Songyu 438, Dika 1220, Dika 2188), two fertilization rates (700 and 800 kg<middle dot>ha-1), and three planting densities (70,000, 75,000, and 80,000 plants<middle dot>ha-1) were evaluated across 18 distinct cropping treatments. During the V6 (Vegetative 6-leaf stage), VT (Tasseling stage), R3 (Milk stage), and R6 (Physiological maturity) growth stages of maize, multi-temporal canopy spectral images were acquired using an unmanned aerial vehicle (UAV) equipped with a multispectral sensor. In situ measurements of key agronomic traits, including plant height (PH), stem diameter (SD), leaf area index (LAI), and relative chlorophyll content (SPAD), were conducted. The optimal vegetation indices (VIs) and agronomic traits were selected for developing a maize yield prediction model using the random forest (RF) algorithm. Results showed the following: (1) Vegetation indices derived from the red-edge band, particularly the normalized difference red-edge index (NDRE), exhibited a strong correlation with maize yield (R = 0.664), especially during the tasseling to milk ripening stage; (2) The integration of LAI and SPAD with NDRE improved model performance, achieving an R^2 of 0.69-an increase of 23.2% compared to models based solely on VIs; (3) Incorporating SPAD values from middle-canopy leaves during the milk ripening stage further enhanced prediction accuracy (R^2 = 0.74, RMSE = 0.88 t<middle dot>ha-1), highlighting the value of vertical-scale physiological parameters in yield modeling. This study not only furnishes critical technical support for the application of UAV-based remote sensing in precision agriculture at the field-plot scale, but also charts a clear direction for the synergistic optimization of multi-dimensional agronomic traits and spectral features.

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研究方向: Agriculture

输出日期: 2025-10-01

第 5 条

标题: Analysis of Lactation Performance and Mastitis Incidence in High- and Low-Yielding Dairy Cows Using DHI Data

作者: Zhou, QJ (Zhou, Qijun); Geng, ZJ (Geng, Zijian); Lian, S (Lian, Shuai); Wang, JF (Wang, Jianfa); Wu, R (Wu, Rui)

来源出版物: ANIMALS 卷: 15 期: 17 文献号: 2495 **DOI:** 10.3390/ani1517249 5 **Published Date:** 2025 AUG 25

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摘要: The DHI data is crucial for monitoring the udder health of dairy cows during the breeding process. This study aimed to investigate the factors influencing milk production in dairy cows throughout this period. We analyzed DHI data from Holstein dairy cows in the Heilongjiang region, alongside the incidence of mastitis. The findings revealed that high-yielding cows demonstrated significantly higher peak milk yield days, peak milk yield, urea nitrogen levels, 305-day milk yield, and persistency ($p < 0.0001$) compared to their low-yielding counterparts. Conversely, high-yielding cows exhibited lower protein rates, fat-to-protein ratios, and milk fat rates ($p < 0.0001$). Additionally, the somatic cell count (SCC) in high-yielding cows was significantly lower than that in low-yielding cows ($p < 0.0001$). The multivariate linear regression analysis of the DHI data indicated that parity was the primary determinant affecting both milk yield and SCC. Statistical analysis of cows with clinical mastitis revealed that those experiencing a single episode of clinical mastitis during the lactation period were predominantly in their first and second parities, while recurrent cases were primarily observed in the second and third parities. These results suggest that as the number of lactations increases, the SCC also rises, reflecting the cumulative impact of parity on the udder health of dairy cows.

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文献类型: Article

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研究方向: Agriculture; Veterinary Sciences; Zoology

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第 6 条

标题: A method of rice yield prediction based on the QRBILSTM-MHSA network and hyperspectral image

作者: Lu, Y (Lu, Yang); Li, PL (Li, Peilin); Wang, P (Wang, Peng); Li, TY (Li, Tongyao); Li, GF (Li, Gongfa)

来源出版物: COMPUTERS AND ELECTRONICS IN AGRICULTURE 卷: 239 文献号: 110884 **DOI:** 10.1016/j.compag.2025.110884 **Early Access Date:** AUG 2025 **Published Date:** 2025 DEC 子辑: A

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摘要: Accurate and timely prediction of rice yield is crucial for ensuring food security and optimizing agricultural management. This study proposes a novel QRBILSTM-MHSA model (Quantile Regression-based Bidirectional Long Short-Term Memory Network with Multi-Head Self-Attention) for rice yield prediction, synergizing hyperspectral imaging with multi-modal phenotypic data. The model replaces traditional RNN architectures with BILSTM to acquire bidirectional temporal patterns and permanent dependencies in rice growth cycle. A multi-head self-attention (MHSA) is introduced to weight critical growth factors through parallel subspace analysis, while quantile regression (QR) provides interval predictions, simultaneously estimating average yield and fluctuation ranges. Experimental results demonstrate that the proposed model achieves an R2 of 0.927, a MAPE of 2.21%, and an RMSE of 0.22 tons/ha, significantly outperforming traditional methods such as LSTM, BP-NN, RF, SVR, and ARIMA. At a 95% confidence level, the model achieves a prediction interval coverage probability (PICP) of 98.8% and a percentage of interval width mean percentage (PIWMP) of 0.16, indicating high reliability and robustness. This study highlights the potential of integrating hyperspectral data and deep learning for precise and scalable rice yield prediction, offering valuable insights for agricultural decision-making.

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文献类型: Article

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研究方向: Agriculture; Computer Science

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第 7 条

标题: Trichoderma harzianum DQ002 Enhances Oriental Melon Resistance Against Fusarium oxysporum f.sp. melonis by Regulating Soil Microbial Communities in the Rhizosphere

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摘要: Continuous planting results in a higher occurrence rate of oriental melon Fusarium wilt caused by Fusarium oxysporum f. sp. melonis (FOM), and treatment with Trichoderma can considerably alleviate the incidence of disease. However, the tripartite interaction mechanisms among T. harzianum-melon-rhizosphere microorganisms remain poorly understood in current research. Pot experiments elucidate the growth-promoting, antagonistic, and rhizosphere-regulating effects of T. harzianum on oriental melon. The experiment consisted of two treatments: (1) water control (CK), and (2) T. harzianum inoculation (MM) with three repetitions per treatment. Illumina high-throughput sequencing was employed to analyze the microbial community and associated metabolic pathways. Additionally, a comprehensive correlation analysis clarified how T. harzianum-modulated physiological factors regulate soil microbial communities to enhance melon resistance to FOM. T. harzianum inoculation significantly promoted plant growth, decreased the incidence rate of Fusarium wilt by 41.85%, and increased rhizosphere nitrate-N, pH, EC, and soil enzyme activity (e.g., sucrose and alkaline phosphatase). Notably, T. harzianum inoculation altered the rhizosphere microbial community's relative abundance and structure, with the most striking changes in the fungal community. Principal coordinate analysis showed this fungal restructuring accounted for 44.9% of total community variation (37% from PCo1, 7.9% from PCo2). Soil-borne pathogens (e.g., Fusarium, Verticillium, Phytophthora) decreased in relative abundance with the inoculation of T. harzianum. Meanwhile, the microbial community shifted from a "fungal-dominated" to "bacterial-dominated" state: fungal proportion decreased by

9.47% (from 23.95% in CK to 14.48% in MM), while bacterial proportion increased by 9.47% (from 76.05% in CK to 85.52% in MM). Microbial abundance shifts primarily impacted amino acid and cofactor biosynthesis metabolic pathways. The application of T. harzianum modified the soil environment, restructuring microbial communities through these changes, which in turn regulated microbial metabolic pathways, creating a soil environment conducive to melon growth and thereby enhancing oriental melon resistance to FOM, while mitigating the obstacles of continuous cropping.

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第 8 条

标题: Quantitative Determination of Nitrogen Content in Cucumber Leaves Using Raman Spectroscopy and Multidimensional Feature Selection

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摘要: Cucumber, a high-yielding crop commonly grown in facility environments, is particularly susceptible to nitrogen (N) deficiency due to its rapid growth and high

nutrient demand. This study used cucumber as its experimental subject and established a spectral dataset of leaves under four nutritional conditions, normal supply, nitrogen deficiency, phosphorus deficiency, and potassium deficiency, aiming to develop an efficient and robust method for quantifying N in cucumber leaves using Raman spectroscopy (RS). Spectral data were preprocessed using three baseline correction methods-BaselineWavelet (BW), Iteratively Improve the Moving Average (IIMA), and Iterative Polynomial Fitting (IPF)-and key spectral variables were selected using 4-Dimensional Feature Extraction (4DFE) and Competitive Adaptive Reweighted Sampling (CARS). These selected features were then used to develop a N content prediction model based on Partial Least Squares Regression (PLSR). The results indicated that baseline correction significantly enhanced model performance, with three methods outperforming unprocessed spectra. A further analysis showed that the combination of IPF, 4DFE, and CARS achieved optimal PLSR model performance, achieving determination coefficients (R2) of 0.947 and 0.847 for the calibration and prediction sets, respectively. The corresponding root mean square errors (RMSEC and RMSEP) were 0.250 and 0.368, while the residual predictive deviation (RPDC and RPDP) values reached 4.335 and 2.555. These findings confirm the feasibility of integrating RS with advanced data processing for rapid, non-destructive nitrogen assessment in cucumber leaves, offering a valuable tool for nutrient monitoring in precision agriculture.

文献类型: Article

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第 9 条

摘要: Dairy cattle slurry is a source of nitrogen (N) that can substitute for synthetic fertilizers. This study aimed to identify combinations of synthetic fertilizers and slurry optimal for maize growth and N dynamics in Northeast China. In a two-year field experiment testing synthetic-to-slurry N fertilization ratios, slurry application increased grain yield and yield components, net economic benefit, and N use efficiency rela-tive to synthetic fertilization but led to higher nitrous oxide and ammonia emissions. A 1:1-1:3 synthetic N: slurry N ratio and slurry application at 60-90 t ha-1 balanced productivity with N losses. (c) 2025 Crop Science Society of China and Institute of Crop Science, CAAS. Production and hosting by Elsevier B.V. on behalf of KeAi Communications Co., Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

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第 10 条

标题: Integrated Management Practices Foster Soil Health, Productivity, and Agroecosystem Resilience

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Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计: 0

摘要: Sustainable farmland management is vital for global food security and for mitigating environmental degradation and climate change. While individual practices such as crop rotation and no-tillage are well-documented, this review synthesizes current evidence to illuminate the critical synergistic effects of integrating four key strategies: crop rotation, conservation tillage, organic amendments, and soil microbiome management. Crop rotation enhances nutrient cycling and disrupts pest cycles, while conservation tillage preserves soil structure, reduces erosion, and promotes carbon sequestration. Organic amendments replenish soil organic matter and stimulate biological activity, and a healthy soil microbiome boosts plant resilience to stress and enhances nutrient acquisition through key functional groups like arbuscular mycorrhizal fungi (AMFs). Critically, the integration of these practices yields amplified benefits that far exceed their individual contributions. Integrated management systems not only significantly increase crop yields (by up to 15-30%) and soil organic carbon but also deliver profound global ecosystem services, with a potential to sequester 2.17 billion tons of CO_2 and reduce soil erosion by 2.41 billion tons annually. Despite challenges such as initial yield variability, leveraging these synergies through precision agriculture represents the future direction for the field. This review concludes that a holistic, systems-level approach is essential for building regenerative and climate-resilient agroecosystems.

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第 11 条

标题: SWRD-YOLO: A Lightweight Instance Segmentation Model for Estimating Rice Lodging Degree in UAV Remote Sensing Images with Real-Time Edge Deployment

作者: Guo, CY (Guo, Chunyou); Tan, F (Tan, Feng)

来源出版物: AGRICULTURE-BASEL 卷: 15 期: 15 文献号: 1570 **DOI:** 10.3390/agriculture15151570 **Published Date:** 2025 JUL 22

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摘要: Rice lodging severely affects crop growth, yield, and mechanized harvesting efficiency. The accurate detection and quantification of lodging areas are crucial for precision agriculture and timely field management. However, Unmanned Aerial Vehicle (UAV)-based lodging detection faces challenges such as complex backgrounds, variable lighting, and irregular lodging patterns. To address these issues, this study proposes SWRD-YOLO, a lightweight instance segmentation model that enhances feature extraction and fusion using advanced convolution and attention mechanisms. The model employs an optimized loss function to improve localization accuracy, achieving precise lodging area segmentation. Additionally, a grid-based lodging ratio estimation method is introduced, dividing images into fixed-size grids to calculate local lodging proportions and aggregate them for robust overall severity assessment. Evaluated on a self-built rice lodging dataset, the model achieves 94.8% precision, 88.2% recall, 93.3% mAP@0.5, and 91.4% F1 score, with real-time inference at 16.15 FPS on an embedded NVIDIA Jetson Orin NX device. Compared to the baseline YOLOv8n-seg, precision, recall, mAP@0.5, and F1 score improved by 8.2%, 16.5%, 12.8%, and 12.8%, respectively. These results confirm the model's effectiveness and potential for deployment in intelligent crop monitoring and sustainable agriculture.

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第 **12** 条

标题: An Experimental Study on the Charging Effects and Atomization Characteristics of a Two-Stage Induction-Type Electrostatic Spraying System for Aerial Plant Protection

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摘要: To address the technical problems of broad droplet size spectrum, insufficient atomization uniformity, and spray drift in plant protection unmanned aerial vehicle (UAV) applications, this study developed a novel two-stage aerial electrostatic spraying device based on the coupled mechanisms of hydraulic atomization and electrostatic induction, and, through the integration of three-dimensional numerical simulation and additive manufacturing technology, a new two-stage inductive charging device was designed on the basis of the traditional hydrodynamic nozzle structure, and a synergistic optimization study of the charging effect and atomization characteristics was carried out systematically. With the help of a charge ratio detection system and Malvern laser particle sizer, spray pressure (0.25-0.35 MPa), charging voltage (0-16 kV), and spray height (100-1000 mm) were selected as the key parameters, and the interaction mechanism of each parameter on the droplet charge ratio (C/m) and the particle size distribution (Dv50) was analyzed through the Box-Behnken response surface experimental design. The experimental data showed that when the charge voltage was increased to 12 kV, the droplet charge-to-mass ratio reached a peak value of 1.62 mC/kg ($p < 0.01$), which was 83.6% higher than that of the base condition; the concentration of the particle size distribution of the charged droplets was significantly improved; charged droplets exhibited a 23.6% reduction in Dv50 ($p < 0.05$) within the 0-200 mm core atomization zone below the nozzle, with the coefficient of variation of volume median diameter decreasing from 28.4% to 16.7%. This study confirms that the two-stage induction structure can effectively break through the charge saturation threshold of traditional electrostatic spraying, which provides a theoretical basis and technical support for the optimal design of electrostatic spraying systems for plant protection UAVs. This technology holds broad application prospects in agricultural settings such as orchards and farmlands. It can significantly enhance the targeted deposition efficiency of pesticides, reducing drift losses and chemical usage, thereby enabling agricultural enterprises to achieve practical economic benefits, including reduced operational costs, improved pest control efficacy, and minimized environmental pollution, while generating environmental benefits.

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第 13 条

标题: Roles of soil organic acids and base cations in Mollisol acidification during the peak growth stage of crops

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摘要: Changes in low-molecular-weight organic acids (LMWOAs), plant uptake or leaching of base cations (BCs) during peak crop growth affect soil acidity, particularly owing to excessive fertilizer use and intensive farming. The effect of LMWOAs and BCs on the acidity of Mollisol farmland is poorly understood. A long-term experiment with different fertilizer treatments under continuous cropping or corn-soybean rotation modules, was performed to examine the variation of LMWOAs and BCs during peak growth stages of corn and soybean and their effects on soil acidity. The LMWOAs

concentrations ranged from 33.6 to 45.9 mg kg(-1) at the jointing stage of corn and 71.2-114 mg kg(-1) at the flowering stage of soybean. The predominant LMWOAs for corn are malic, acetic, and propanedioic acids, and malic, propanedioic, and succinic acids for soybean. Acetic acid was the main acidity determinant for corn (r = 0.714, p < 0.001), whereas that for soybean was malic acid (r = 0.704, p < 0.001). Acidification of the Mollisol farmland by LMWOAs and BCs during the peak crop growth stage is crop-specific and management-dependent. The higher total amount of LMWOAs may be one of the reasons for soil acidification in soybean. Continuous corn significantly increases the total LMWOAs concentration but reduces the content of BCs, exchangeable BCs (Ca2+, Mg2+, and Na+), whereas continuous soybean reduces no effect on either LMWOAs or BCs. Continuous corn cultivation, compared to rotational corn, reduces soil pH from 5.76 to 5.63, due to an increase in the total LMWOAs concentration, as well as a reduction in BCs and exchangeable BCs (Ca2+, Mg2+, and Na+) levels. There is no significant difference in soil pH between continuous and rotational soybean treatments but soil pH below 5.5 in both treatments. Rotation with chemical fertilizer for corn and dairy manure alone for soybean increases soil pH significantly owing to higher levels of BCs and exchangeable BCs (Ca2+, Mg2+, and K+). Manure application is more effective than straw return in mitigating soil acidity. Understanding the decomposition dynamics of LMWOAs during the crop cycle on soil acidity is required to lay a robust scientific basis for mitigating soil acidification in Mollisol farmlands.

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研究方向: Agriculture

输出日期: 2025-10-01

第 14 条

标题: Fine Mapping of Quantitative Trait Loci (QTL) with Resistance to Common Scab

in Diploid Potato and Development of Effective Molecular Markers

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摘要: Potato common scab is one of the major diseases posing a threat to potato production on a global scale. No chemical agents have been found to effectively control the occurrence of this disease, and research on the identification of resistance genes and the development of molecular markers remains relatively limited. In this study, a diploid potato variety H535, which exhibits resistance to the predominant pathogen Streptomyces scabies, was utilized as the male parent, whereas the susceptible diploid potato variety H012 served as the female parent. Building upon the resistance QTL intervals pinpointed through a genome-wide association study, two potential resistance loci were localized on chromosome 2 of the potato genome, spanning the regions between 38-38.6 Mb and 41.3-42.7 Mb. These intervals accounted for 18.03% of the total phenotypic variance and are presumed to be the primary QTLs underlying scab resistance. Building upon this foundation, we expanded the hybrid progeny population, conducted resistance assessments, selected individuals with extreme phenotypes, developed molecular markers, and conducted fine mapping of the resistance gene. A phenotypic evaluation of scab resistance was carried out using a pot-based inoculation test on 175 potato hybrid progenies to characterize the F1 generation population. Twenty lines exhibiting high resistance and thirty lines displaying high susceptibility were selected for investigations. Within the preliminary mapping interval on potato chromosome 2 (spanning 38-43 Mb), a total of 214 SSR (Simple Sequence Repeat) and 133 InDel (Insertion/Deletion) primer pairs were designed. Initial screening with parental lines identified 18 polymorphic markers (8 SSR and 10 InDel) that demonstrated stable segregation patterns. Validation using bulked segregant analysis revealed that 3 SSR markers (with 70-90% linkage) and 6 InDel markers (with 70-90% linkage) exhibited significant co-segregation with the resistance trait. A high-density genetic linkage map spanning 104.59 cm was constructed using 18 polymorphic markers, with an average marker spacing of 5.81 cm. Through linkage analysis, the resistance locus was precisely mapped to a 767 kb interval (41.33-42.09 Mb) on potato chromosome 2, flanked by SSR-2-9 and InDel-3-9. Within this refined interval, four candidate disease resistance genes were identified: RHC02H2G2507, RHC02H2G2515, PGSC0003DMG400030643, and PGSC0003DMG400030661. This study offers novel insights into the genetic architecture underlying scab resistance in potato. The high-resolution mapping results and characterized markers will facilitate marker-assisted selection (MAS) in disease resistance breeding programs, providing an efficient strategy for developing cultivars with enhanced resistance to Streptomyces scabies.

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第 15 条

标题: RESEARCH ON THE TRAY CONVEYING AND OUTPUT DEVICE OF AN AUTOMATIC TRAY PLACEMENT MACHINE FOR MULTI-ROW RIGID RICE SEEDLING TRAYS

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摘要: To address the issue of height disparity between the output device of the tray placement machine and the seedbed in stacked-tray germination under enclosed conditions-which can lead to vibration and displacement when trays are placed-a slide-type output device with a buffering function equal to the height difference was designed to ensure gentle placement of seedling trays. A three-factor, five-level quadratic orthogonal rotational combination test was conducted using Adams software for simulation analysis. The test factors included the horizontal inclination angle of the tilting frame, the horizontal inclination angle of the sliding plate, and the speed of the seedling tray pusher. Evaluation indices included the qualification rate of tray spacing, the qualification rate of alignment, and the efficiency of tray placement. Test results were analyzed using Design Expert 13 software, and multi-objective parameter optimization was performed. The optimal parameter combination was determined as follows: a tilting frame inclination angle of 15 degrees, a sliding plate inclination angle of 18 degrees, and a tray pusher speed of 0.16 m/s. Field trials conducted to validate these parameters resulted in a 96.11% qualification rate for tray spacing, a 95.89% alignment qualification rate, and a tray placement efficiency of 714 trays per hour-within 1% of the theoretical optimal value. These findings provide a theoretical foundation for the smooth and efficient operation of automatic seedling tray placement machines.

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研究方向: Agriculture

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第 16 条

标题: PREPARATION OF BIOMASS SEEDLING TRAYS USING LIGNIN BONDING PROPERTIES AND DESIGN OF HEATING COMPRESSION FORMING MOLD

作者: Li, JY (Li, Jin-yang); Zhang, W (Zhang, Wei); Yu, CT (Yu, Chun-tao); Qi, LQ (Qi, Li-qiang); Zhang, B (Zhang, Bo)

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摘要: In the current agricultural production, widely used plastic seedling trays suffer from poor air permeability, poor water permeability, and slow degradation. Therefore, this study proposes the preparation of degradable seedling trays utilizing the bonding effect of lignin, and the design of a heating compression forming mold according to the size and forming requirements of the trays. Flexural strength of seedling trays and seedling experiments were conducted to verify the effectiveness of the preparation process and mold design. The experiment results showed that the heating function requirements of the mold can be achieved when the heating power of the electromagnetic induction heater was set to 3000 W, and the heating time of the frame was 60 s. The heating compression mold designed can ensure that the seedling trays were heated uniformly and have excellent mechanical properties during the forming process. Biomass seedling trays prepared using lignin bonding and specific raw material ratios performed well in terms of compressive strength, water resistance and degradability. During the seedling cycle, no rupture occurred in the seedling trays, and the growth of maize seedlings was good enough to meet the actual seedling needs. The results of the study provide new ideas and methods for the preparation of lignin bonding degradable biomass seedling trays, and the application of heating compression forming mold provides technical support for the efficient and large-scale production of seedling trays.

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研究方向: Agriculture

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第 **17** 条

标题: RESEARCH ON A DETECTION ALGORITHM FOR DRY-DIRECT SEEDED RICE BASED ON YOLOv11N-DF

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摘要: Identifying dry-direct seeded rice seedlings provides valuable information for field management. To address the challenges of seedling detection in cold-region dry-direct seeded rice fields, this study proposes an enhanced YOLOv11n-DF model. Key innovations include: 1) integrating DSConv into the C3k2 module to optimize phenotypic feature extraction, and 2) employing the FASFF strategy to improve scale invariance in the convolutional head. Experimental results show that the improved model achieves an mAP50 of 96%, with high recall, precision, and a processing speed of 251.5 FPS, outperforming the original YOLOv11n by 5 percentage points in mAP50, and surpassing YOLOv7-YOLOv10 in detection accuracy. The proposed algorithm effectively addresses challenges such as seedling occlusion and non-uniform distribution, offering a robust solution for automated seedling monitoring in precision agriculture.

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第 18 条

标题: ELECTRIC RED BEAN PRECISION SEEDING CONTROL SYSTEM BASED ON IHBA-LADRC

作者: Li, YF (Li, Yi-fei); Wang, GY (Wang, Guang-yu); Zhao, L (Zhao, Lin); Yi, SJ (Yi, Shu-juan)

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摘要: This study proposes an improved honey badger algorithm (IHBA) and a linear active disturbance rejection controller (LADRC) for the electric red bean precision seeder control system to solve high sowing missing rates and uneven sowing in high-density red bean precision sowing. The research details the design process of the intelligent control system, the improvement of the honey badger algorithm, and the intelligent adjustment method for key parameters of the LADRC controller. Simulation experiments show that the IHBA-LADRC based control system has no overshoot, short adjustment time, minimal steady-state error, no oscillation, and strong anti-interference ability. The system achieves an adjustment time of 0.79 seconds, almost zero static error, and an interference recovery time of 0.22 seconds. Bench tests indicate that compared to traditional PID electronic control sowing, the IHBA-LADRC system improves the pass index by 1.32 percentage points, reduces the multiple index by 0.49 percentage points, and lowers the missed sowing index by 0.76 percentage points. The overall variation coefficient decreases by 6.30 percentage points, and the variation coefficient of qualified plant spacing drops by 5.43 percentage points. This system reduces the discrepancy between the actual and theoretical plant spacing of red beans.

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研究方向: Agriculture

第 19 条

标题: DESIGN AND EXPERIMENT OF AN AIR-ASSISTED, GUIDED-GROOVE MAIZE SEED-GUIDING DEVICE BASED ON THE BRACHISTOCHRONE CURVE

作者: Sun, WS (Sun, Wen-sheng); Yi, SJ (Yi, Shu-juan); Qi, HL (Qi, Hai-long); Li, YF (Li, Yi-fei); Zhang, YP (Zhang, Yu-peng); Yuan, JS (Yuan, Jia-sha); Wang, S (Wang, Song)

Web of Science 核心合集中的 **"被引频次"**: 0

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摘要: To address the issue that existing seed-guiding devices struggle to meet the high-speed operational requirements of delta-row planters for dense maize planting, a seed-guiding device with air assistance and a guided groove was designed based on the principle of the brachistochrone. The overall structure and working principle of the device are described, and the curved segment of the seed guide tube was optimized using the brachistochrone principle while accounting for frictional effects. Computational fluid dynamics (CFD) simulations were conducted to analyse the flow field characteristics of the seed guide tube at inlet airflow velocities of 63.48, 60.64, 57.73, 54.69, 51.50, and 48.15 m/s. A multi-factor test was performed using chamber pressure and operating speed as test factors, with the qualified index of grain spacing and the coefficient of variation as evaluation metrics. Comparative tests were conducted using a traditional guided-groove seed guide tube and a brachistochrone-based seed guide tube without a guided groove. Results showed that the optimal parameter combination for the newly designed device was a chamber pressure of 3.124 kPa and an operating speed of 12.0 km/h. Under these conditions in the bench test, the qualified index reached 97.04%, and the coefficient of variation was 6.18%, outperforming the other two types of seed-guiding devices. These findings demonstrate that the seed-guiding device based on the brachistochrone principle can significantly improve the seeding quality of delta-row planters for dense maize planting under high-speed operation.

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文献类型: Article

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第 **20** 条

标题: EXPERIMENTAL STUDY ON VARIABLE TEMPERATURE DRYING PROCESS OF PADDY BASED ON GLASS TRANSITION

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Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计: 0

摘要: To improve the quality of paddy, reduce post-production losses, and ensure processing efficiency, this paper proposes a variable-temperature drying process based on the glass transition phenomenon, using the relationship between paddy moisture content and glass transition temperature. An optical three-dimensional scanning method was employed to obtain the paddy grain particle model. Subsequently, a heat and mass transfer model for paddy was constructed to analyze the temperature distribution and moisture migration behavior during drying. Experiments were conducted using a constant temperature of 40 degrees C and heating amplitudes of 5 degrees C, 10 degrees C, and 15 degrees Cto investigate the drying characteristics and quality evolution of paddy. The simulation results showed that the average errors for moisture content and temperature were 1.58% and 2.66%, respectively. Compared with constant temperature drying at 40 degrees C, the variable-temperature drying with heating amplitudes of 5 degrees C, 10 degrees C, and 15 degrees C reduced the drying time by 19, 58, and 63 minutes, respectively. Among the tested conditions, the 5 degrees C heating amplitude yielded the best results, with a crack increase rate of only 2.5% and a head rice yield of 68.3%. These findings offer valuable insights for understanding the mechanism of variable-temperature drying and for optimizing the drying process of paddy.

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第 **21** 条

标题: DESIGN AND EXPERIMENTAL STUDY OF A SHAFTLESS DOUBLE-SCREW FERTILIZER SPREADER FOR RICE /

作者: Wang, ZY (Wang, Ziyu); Hong, DY (Hong, Deyu); Wang, HC (Wang, Hongchao); Liu, CY (Liu, Chengyang); Ma, ZF (Ma, Zanfeng); Liu, XK (Liu, Xingkang); Li, WT (Li, Wentao)

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摘要: To address the problems of poor fertilizer distribution uniformity and low application accuracy during the operation of rice fertilizer spreaders, this paper presents the design of a shaftless double-screw fertilizer spreader for rice. Dynamic methods were combined to analyze the filling stage and discharge stage of the fertilizer spreader and to investigate the impact of its structural parameters on the uniformity of fertilizer discharge. The fertilizer distribution process was simulated using EDEM software, and single-factor experiments were conducted to analyze the effects of spiral blade outer diameter, pitch, and rotational speed on fertilizer distribution uniformity. Furthermore, a two-factor orthogonal rotational combination experiment was carried out under different structural parameter conditions to analyze the interactions between influencing factors and determine the optimal parameter combination. The optimal parameters were found to be an outer diameter of 23.3 mm, a pitch of 23.6 mm, and a rotational speed of 149.2 r/min, yielding a uniformity coefficient of variation of 6.1%. Bench test results showed that the relative error between the simulation and experimental uniformity coefficient was 0.7%, indicating strong agreement. The results meet the agronomic requirements for fertilization and ensure stable fertilizer supply. These findings provide a reference for the design optimization of spiral fertilizer spreaders.

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研究方向: Agriculture

输出日期: 2025-10-01

第 22 条

标题: SAFF-YOLO-BASED LIGHTWEIGHT DETECTION METHOD FOR THE DIAMONDBACK MOTH

作者: Wu, M (Wu, Miao); Shi, H (Shi, Hang); Liu, CX (Liu, Changxi); Zhang, H (Zhang, Hui); Li, YF (Li, Yufei); Bao, DR (Bao, Derui); Hu, J (Hu, Jun)

Web of Science 核心合集中的 "被引频次": 0

被引频次合计: 0

摘要: The diamondback moth (Plutella xylostella) is a destructive pest that severely compromises Chinese cabbage production. Infestations caused by this pest significantly reduce both yield and quality, making efficient and accurate detection crucial for cultivation management. To address the challenges of detecting small targets and extracting phenotypic features in complex environments, this study proposes SAFF-YOLO-a YOLO11-based pest detection algorithm specifically designed for diamondback moths in Chinese cabbage fields. First, the loss function was refined to enhance the model's learning capacity for pest samples, optimizing it for precision-driven bounding box regression. Second, Alterable Kernel Convolution (AKConv) was incorporated into the backbone network, strengthening feature extraction capabilities while reducing model parameters. Third, Single-Head Self-Attention (SHSA) was integrated into the C2PSA (Channel and Position Spatial Attention) module, enhancing the backbone network's feature processing efficacy. Fourth, the neck network employed Frequency-aware Feature Fusion (FreqFusion) as the upsampling operator, specifically designed for precise localization of densely distributed targets. Finally, the Feature Auxiliary Fusion Single-Stage Head (FASFFHead) detection module was implemented to boost multi-scale target detection adaptability. Experimental results demonstrate that SAFF-YOLO achieved detection metrics of 90.7% precision, 89.4% recall, and 92.4% mAP50 for diamondback moths in Chinese cabbage, representing improvements of 7.4%, 8.0%, and 8.4% respectively over YOLO11. With only 7.3 million parameters and computational cost of 12.8 GFLOPs, this corresponds to 60.1% and 40.7% reductions compared to the baseline model. These results confirm an optimal balance between model lightweighting and high detection accuracy. Under complex field conditions characterized by small and densely distributed targets, severe background interference, and intense illumination, SAFF-YOLO consistently demonstrates robust detection capabilities, effectively reducing both false negative and false positive rates while maintaining high operational robustness. This research provides a practical solution for real-time diamondback moth detection in field-grown Chinese cabbage.

文献类型: Article

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输出日期: 2025-10-01

第 23 条

标题: STABILITY ANALYSIS OF FLAT-ELLIPTICAL GREENHOUSE SKELETON CONSIDERING INITIAL GEOMETRICAL IMPERFECTIONS

作者: Xie, HY (Xie, Hengyan); Wei, CX (Wei, Cunxing); Zheng, X (Zheng, Xin); Xu, WB (Xu, Wenbao)

Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计: 0

摘要: This study investigates the nonlinear stability of flat-elliptical greenhouse skeletons under wind loads, accounting for initial imperfections. A finite element model was developed in ABAQUS, with nonlinear buckling analysis conducted via the arc-length method. Eigenvalue buckling analysis identified imperfection modes, and the impact of imperfection amplitudes on bearing capacity was assessed. Results showed that increasing imperfection amplitude decreased the ultimate bearing capacity, with a 461.2 N·m2 capacity at L/300, and 520.26 N·m2 at L/800. Initial imperfections notably influenced yield stages. This study demonstrates that considering initial imperfections provides a more accurate assessment of the skeleton's stability under extreme loads.

文献类型: Article

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研究方向: Agriculture

输出日期: 2025-10-01

第 24 条

标题: DESIGN AND TESTING OF A WINGED SUBSOILER SHOVEL FOR STRIP MINIMUM-TILLAGE DEEP LOOSENING FERTILISER MACHINE

作者: Xu, SC (Xu, Shi-cheng); Tao, GX (Tao, Gui-xiang); Yi, SJ (Yi, Shu-juan); Wang, S (Wang, Song); San, YH (San, Yu-hang)

Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计: 0

摘要: To address issues such as soil compaction, plough layer damage, and hardpan formation caused by long-term use of rotary tillage and conventional ploughing, a winged subsoiler shovel was designed based on the soil characteristics of the black soil region in Northeast China. A mechanical contact model between the subsoiler shovel and soil was established to identify the design factors affecting the operational quality of the shovel. Using discrete element simulation technology, a shovel-soil interaction model was constructed. Through a quadratic regression rotational orthogonal design test, the effects of shovel structural parameters on soil disturbance area were determined. Taking the maximization of soil disturbance area as the objective, the shovel parameters were optimized. The optimal parameter combination was obtained as follows: shovel tip entry angle of 21 degrees, wing inclination angle of 28 degrees, and wing width of 104 mm, resulting in a maximum soil disturbance area of 1699.80 cm2. A bench verification test was subsequently conducted, showing an actual soil disturbance area of 1666.08 cm2. The test results were consistent with the simulation optimization results, confirming that the optimal parameter combination meets operational requirements and satisfies agronomic needs for deep loosening.

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研究方向: Agriculture

第 25 条

标题: ESTABLISHMENT AND VALIDATION OF A THEORETICAL MODEL FOR SINGLE LONGITUDINAL AXIAL FLOW THRESHING AND SEPARATION OF MILLET

作者: Zhang, JH (Zhang, Jun-hui); Zhao, L (Zhao, Lin); Yi, SJ (Yi, Shu-juan); Zhang, DM (Zhang, Dong-ming); Zhang, X (Zhang, Xin)

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摘要: The influence of the device's structure and operating parameters, along with the material properties of millet, on threshing and separation performance forms the theoretical basis for designing and researching a single longitudinal axial flow threshing and separation device specifically adapted to millet. Therefore, a theoretical model for grain threshing and separation in a single longitudinal axial flow threshing device was established based on variable mass theory. To validate the theoretical model, single-factor tests were conducted on the feeding rate, rotational speed, and water content of Longgu 31 millet. The error analysis between the experimental and calculated values indicates that within a moisture content range of 17.14% to 32.93%, feeding rates varying from 1 to 3 kg/s, and rotational speeds ranging from 700 to 1000 r/min, the R-squared values consistently exceed 0.97. This indicates an excellent fit of the theoretical model. The theoretical model will serve as a valuable reference for the design and investigation of the single longitudinal axial flow separation device.

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文献类型: Article

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研究方向: Agriculture

第 26 条

标题: PADDY RICE POROSITY PREDICTION BASED ON SNAKE ALGORITHM

OPTIMIZED SUPPORT VECTOR REGRESSION

作者: Zhang, ZQ (Zhang, Zhi-Qi); Wan, L (Wan, Lin); Che, G (Che, Gang); Wang, HC (Wang, Hong-Chao); Pan, H (Pan, Heng); Wang, S (Wang, Shuo)

Web of Science 核心合集中的 **"被引频次"**: 0

被引频次合计: 0

摘要: During the paddy rice drying process, the uneven spatial distribution of pore spaces within drying chambers poses a significant challenge to accurate porosity characterization and results in inefficient energy utilization. To address this issue, this study proposes a porosity prediction model based on Support Vector Regression (SVR), aimed at effectively monitoring porosity variations during drying and enhancing energy efficiency. Using MATLAB based image processing, the porosity of paddy rice was quantitatively extracted. A Response Surface Methodology (RSM) was then employed to analyze the influence of geometric characteristics, moisture content, and grain bulk height on porosity during drying. To further improve the predictive performance, the SVR model was optimized using the Snake Optimizer (SO) algorithm. The resulting SO-SVR model was evaluated against porosity values derived from image analysis. Experimental results demonstrate that the SO-SVR model achieves high accuracy, with a Root Mean Square Error (RMSE) of 0.0095 and a coefficient of determination ($R2$) of 0.9913. Compared to standard SVR and BP neural network models, the proposed model reduces RMSE by 0.0867 and 0.1663, and increases $R2$ by 0.0449 and 0.1102, respectively. These findings indicate that the SO-SVR model provides a reliable and efficient approach for predicting paddy rice porosity during drying, offering valuable support for energy-saving and intelligent drying system design.

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文献类型: Article

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研究方向: Agriculture

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第 **1** 条

标题: Lightweight drought recognition model based on feature extraction of soybean multispectral images

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Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计**:** 0

摘要: Drought is an important stress factor restricting soybean's high yield and high quality. Rapid detection of soybean drought conditions is of great significance for scientific cultivation management and drought-resistant variety breeding. In view of the complex and diverse phenotypes of soybean canopy, the existing recognition algorithms have high feature dimensions and large amount of calculation, which are difficult to meet the requirements of lightweight models for portable devices to identify soybean drought. Thus, a lightweight soybean drought recognition model based on feature extraction and one-dimensional convolutional neural network is proposed in this paper. Firstly, the multispectral image of soybean canopy was taken as the research object, and ReliefF feature selection method was applied to extract 14 feature vectors from the original 37 phenotypic indicators calculated from soybean canopy image, and the correlation coefficient $R2$ reached 0.886. Finally, based on the selected dataset of soybean canopy phenotypic features, a seven-layer one-dimensional convolutional neural network was constructed to achieve a lightweight recognition model for soybean canopy drought (ReliefF_Conv), with an accuracy of 95.67 % and a inference time of only 0.000009 s. Compared with Back Propagation(BP), Radial Basis Function Network(RBF), Random Forest(RF), Support Vector Machine(SVM), Long Short-Term Memory(LSTM) and MobileNet models, the accuracy of the proposed model is increased by 14.42 %, 8.17 %, 5.05 %, 1.92 %, 14.42 % and 14.42 %, respectively. Compared with the full-variable model (OD_Conv), the accuracy of the proposed model is increased by 9.16 %, the training parameters were reduced by 64.2 %, and the inference efficiency has also increased by 70 %. The results achieved rapid detection of drought traits of soybean, and could provide basis and reference for water-saving irrigation and precise decision-making in drought-resistant varieties breeding, environmental regulation and scientific management.

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文献类型**:** Article

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研究方向: Automation & Control Systems; Chemistry; Computer Science; Instruments & Instrumentation; Mathematics

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第 2 条

标题: Spectral Wavelength Selection Method Based on Improved Particle Swarm Optimization Idea and Simulated Annealing Strategy

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摘要: Wavelength selection (WS) is an effective means to address the presence of many uncorrelated and collinear variables in high-dimensional spectral data that seriously influence the modeling accuracy and efficiency. Aiming to address too many wavelength variables selected by particle swarm optimization algorithm (PSO) and its premature convergence, this paper proposes a novel spectral WS approach-iPSOSA-based on the improved PSO idea and simulated annealing algorithms (SA) strategy. iPSOSA applies the velocity and position update ideas of PSO to the guided shift evolution process of the binary bits with the value of "1" in the particle and integrates with the perturbation strategy of the SA Metropolis acceptance criterion. It effectively solves the premature convergence of PSO and overcomes the low efficiency of the SA evolution, which has high efficiency in WS. By evaluating the modeling performance of different intelligent WS methods using two public spectral datasets from soil and maize, it was found that the iPSOSA outperforms the full-spectrum and other three comparative algorithms. The best iPSOSA partial least squares regression models for soil organic matter and maize moisture contents have excellent regression performance, with the validation set's coefficient of determination higher than 0.98, relative root mean squared error lower than 1.50%, and residual predictive deviation higher than 8.00. iPSOSA presents better comprehensive performance in WS than traditional intelligent algorithms in terms of modeling performance, variable dimensionality, and searching efficiency, providing a new solution for obtaining high correlation wavelength variables in the spectral modeling process.

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研究方向: Automation & Control Systems; Chemistry; Computer Science; Instruments & Instrumentation; Mathematics

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Biochemistry & Molecular Biology

第 1 条

标题: Mechanistic insights into chlorogenic acid and caffeic acid as novel juvenile hormone antagonists

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摘要: The search for eco-friendly alternatives to conventional chemical insecticides has intensified due to environmental concerns and pest resistance. Juvenile hormone antagonists (JHANs), which disrupt insect development and reproduction with minimal toxicity to vertebrates, offer a promising avenue for sustainable pest management. In this study, a preliminary screening using a juvenile hormone response region (JHRR)-driven luciferase reporter assay in Drosophila Kc cells found that Polygonum aviculare extract exhibited notable JHAN activity among crude extracts from various plants tested. Guided by literature-reported constituents of P. aviculare, we further identified chlorogenic acid and caffeic acid as potent JHANs. Both compounds inhibited Methoprene-induced JHRR activity and disrupted the interaction between the JH receptor Methoprene-tolerant (Met) and its coactivator Taiman (Tai) in a dose-dependent manner. Mechanistic studies demonstrated that chlorogenic acid and caffeic acid possibly compete with Methoprene for binding to the PAS-B domain of Met, preventing the Methoprene-stimulated association of Met with the chaperone protein Hsp83. This inhibition, in turn, blocks the nuclear translocation of Met and

downstream Kr-h1 expression. In vivo assays demonstrated that chlorogenic acid or caffeic acid treatment induced precocious metamorphosis in Ostrinia furnacalis larvae and suppressed ovarian development in adults, mimicking JH depletion. These findings highlight the potential of P. aviculare extracts as a sustainable source of JHANs for integrated pest management, offering a novel mechanism-based approach to reduce reliance on synthetic insecticides.

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文献类型: Article

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研究方向: Biochemistry & Molecular Biology; Entomology; Physiology

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第 2 条

标题: Genistein supplementation alleviates bone damage by regulating gut microbiota composition and metabolism in obesity and estrogen decline

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摘要: Postmenopausal women face an elevated risk of osteoporosis due to decreased estradiol secretion. Obesity is also a prevalent disease during menopause, but the impact on bone health is understudied. Genistein (GEN) is a soy-derived isoflavone that has beneficial effects on a variety of age-related diseases, but the exact role of GEN in bone health in hypoestrogenism and obesity-induced stress remains to be elucidated. This study employed an ovariectomized (OVX) mouse model subjected to a high-fat diet to simulate postmenopausal obesity and investigate the effects of GEN intake on bone metabolism. Bone mass alterations and metabolic function were evaluated using micro-CT imaging, biochemical markers, and histopathological staining. The homeostasis of the bone matrix was further assessed through primary bone marrow cell differentiation assays, western blotting, and quantitative real-time PCR (qRT-PCR). Additionally, intestinal barrier protein expression, 16S rRNA gene sequencing, and untargeted metabolomics were

integrated to examine GEN's impact on gut structure, microbiota composition, and fecal metabolic profiles. Our findings indicated that diet-induced obesity (DIO) exacerbated OVX-induced osteopenia in mice, whereas GEN supplementation significantly mitigated bone loss and restored balanced differentiation among osteoblasts, adipocytes, and osteoclasts. Furthermore, GEN improved metabolic abnormalities associated with obesity. It also preserved intestinal barrier integrity by maintaining tight junction proteins and mucus levels, thereby reducing systemic inflammation. The results of 16s rDNA gene sequencing showed that GEN alleviated intestinal microbiota dysbiosis and increased the abundance of beneficial bacteria g-Dubosiella and g-Blautia in feces. Moreover, metabolomics analysis showed that GEN intervention could alleviate lipid peroxidation and promote primary bile acid biosynthesis. In conclusion, long-term intake of GEN can regulate gut microbiota composition and metabolism, maintain intestinal barrier function, ameliorate pathological metabolic abnormalities, and ultimately prevent obesity and estrogen hypoestrogenic-induced osteopenia. These findings provide novel insights into how GEN intake and soy diet prevent osteoporosis.

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研究方向: Biochemistry & Molecular Biology; Food Science & Technology

第 3 条

标题: α-Glucan rich polysaccharide fraction obtained from rhizomes of Kaempferia parviflora (black ginger) exhibits immunostimulatory activity in RAW264.7 cells

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摘要: This study investigated the structural characteristics and immunostimulatory activities of polysaccharides, primarily composed of alpha-glucan, isolated from the rhizomes of Kaempferia parviflora (black ginger), with a focus on F2 using RAW264.7 cells. The extracted and purified polysaccharides yielded two fractions, F1 and F2. The primary components of these fractions included carbohydrates (84.47 f 4.33 and 45.69 f 2.26%), protein (2.72 f 0.21% and 29.14 f 0.60%), and sulfates (8.89 f 0.23 and 23.47 f 1.72%), with glucose being the dominant monosaccharide (98.7 f 0.38 and 77.5 f 0.28%), followed by arabinose (0.5 f 0.02 and 9.8 f 0.44%) and galactose (0.2 f 0.01 and 7.6 f 0.25%), along with minor amounts of rhamnose, xylose, and mannose. F2 is rich in alpha-glucans with a predominant-*4)-Glc-(1-* linkage, typical of unbranched glucan chains. It has a highly branched structure with (1-*)-, (1-* 4), (1-* 2), (1-* 6), (1-* 2,3), and (1-* 3)-linked glucopyranose residues, arabinose, galactose, and rhamnose linkages. The F2 fraction significantly increased NO production and upregulated macrophage surface receptor expression, thereby activating the NF-kappa B and MAPK signaling pathways. The study confirms that the immunostimulatory activity observed in K. parviflora rhizomes is primarily due to the polysaccharide component, suggesting its potential as a natural immunotherapeutic agent.

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研究方向: Biochemistry & Molecular Biology; Chemistry; Polymer Science

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Biodiversity & Conservation

第 1 条

标题: Artificial light at night alters morphology, phenology, and reproductive capacity in an annual herb☆

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摘要: The rapid global expansion of artificial light at night (ALAN) has spurred growing interest in its ecological impact on plant life. However, the effects of low-intensity ALAN on plants in their natural habitats remain largely unexplored, particularly in relation to how morphological and phenological changes influence plant fitness. We

conducted a field experiment using the annual herbaceous plant Elsholtzia densa as a model species to assess the effects of ALAN on plant morphology, reproductive phenology, and reproductive capacity. The results show that ALAN increased the specific leaf area and elongated the top inflorescences, but it resulted in a reduction of secondary branches and a decrease in the proportion of individuals with undeveloped top inflorescences. Additionally, ALAN induced a shift in biomass allocation toward the above-ground parts of plants. It also accelerated the onset of budding, blooming, fruiting, and seed maturity by 3.4 to 6.2 days and caused a decrease in the number of fruity inflorescences. These findings suggest that ALAN can significantly affect plant morphology, reproductive timing, and potentially the fitness of plants. While ALAN induces potentially adaptive changes in leaf area and biomass allocation, it may also disrupt plant-pollinator interactions and negatively impact plant reproductive capacity.

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<div align="center">

Cell Biology

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第 1 条

标题:Lactiplantibacillus plantarum promotes lactoferrin synthesis and secretion in bovine mammary epithelial cells through STAT3 and AP-1 transcription factor pathways

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摘要: Probiotics can support the immune function of dairy cows and contribute to the synthesis of milk components in mammary gland tissue. Bovine lactoferrin (bLF) possesses immune-regulating and nutritional properties; however, the impact of probiotics on bLF remains unclear. This study aimed to investigate whether probiotics can enhance the synthesis and secretion of bLF in the mammary gland, with a particular focus on the specific mechanisms by which Lactiplantibacillus plantarum (L. plantarum) regulates bLF. Primary bovine mammary epithelial cells (BMECs) were cultured in six-well plates and treated with various types of probiotics. The expression of bLF was evaluated using quantitative real-time PCR (qRT-PCR), Western blot, and enzyme-linked immunosorbent assay (ELISA). The expression of transcription factors associated with the bLF promoter region, specifically, was analyzed through qRT-PCR and Western blot. Lacticaseibacillus rhamnosus (L. rhamnosus), Streptococcus thermophilus (S. thermophilus), Bifidobacterium (Bifido.), and L. plantarum upregulated bLF gene and protein expression to varying extents, with L. plantarum exhibiting the most pronounced effect. Furthermore, L. plantarum was found to regulate the expression of phosphorylated STAT3 and AP-1. These findings indicate that probiotics can influence the expression of bLF in mammary gland tissue. Additionally, L. plantarum modulates the production of bLF via the STAT3 and AP-1 transcription factor pathways.

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Chemistry

第 1 条

标题: Amyloid fibrillation of different ratios of 7S/11S soy protein: comparison of fibril structural characteristics and analysis of the potential for preparing high-internal-phase emulsions

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摘要: Amyloid fibrils from soybean 7S and 11S proteins can improve emulsion stability by creating a bridge-like structure at the oil-water interface. To clarify the structural features and potential for stabilising highinternal-phase emulsions of 7S/11S protein amyloid fibrils in varying proportions, more investigation is necessary. This study examined the properties of various emulsion types with oil contents of 30 % and 85 %, as well as the characteristics of amyloid fibrils of different proportions of 7S/11S soybean protein (1:0, 0:1, 1:1, 2:1, and 1:2). The 7S/11S ratio of 2:1 had the highest fibrils beta-sheet content (51.40 %), the highest ThT fluorescence intensity and the strongest fibrils-forming ability. After amyloid fibrillation treatment, emulsions made with different amounts of 7S/11S soy protein showed improved stability compared to the control group. Additionally, amyloid fibrils consisting of 85 % of oil emulsion had superior characteristics than those of 30 %. The emulsion's EAI and ESI initially increased and subsequently decreased as 7S percentage increased. When the 7S/11S soybean protein ratio was 2:1, the emulsion had the highest viscoelasticity, EAI (89.72 m2/g) and ESI (78.96 min) were the highest, and the smallest particle size (90.9 nm) and lowest TSI values, indicating that the 7S/11S soybean protein amyloid fibrils have excellent potential for preparing high-internal-phase emulsion. This study offers a theoretical foundation for employing soy protein in high internal phase emulsions and for comprehending the structure of the various 7S and 11S protein components from soy amyloid fibrils.

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第 2 条

标题: Rapid detection of maize seed germination using near-infrared spectroscopy combined with Gaussian process regression

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摘要: The germination rate of maize seeds is a critical indicator for ensuring high-quality sowing and suitability for food processing. To address the limitations of traditional germination tests, a rapid and non-destructive evaluation method based on near-infrared (NIR) spectroscopy combined with Gaussian Process Regression (GPR) was developed. Various spectral data preprocessing techniques were applied, and a hybrid kernel function integrating Gaussian and Linear kernels was constructed. Particle Swarm Optimization (PSO) was used to optimize the kernel parameters. The PSO-GPR model achieved excellent performance, with determination coefficients (R^2) of 1.000 and 0.9899 for the training and validation sets, respectively. The root mean square errors (RMSE) were 0.0059 and 0.0033, and the residual predictive deviation (RPD) reached 9.3, outperforming PLSR and SVM models. This study provides a novel strategy for the non-destructive evaluation of crop seed quality and contributes to developing smart agricultural practices.

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研究方向: Chemistry; Food Science & Technology; Nutrition & Dietetics

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第 3 条

标题: Metal-Organic Framework-Remodeled Gut Microbiota Alleviates Colonic Inflammation via Selective Modulation of Roseburia intestinalis

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摘要: Inflammatory bowel disease (IBD) is marked by severe colonic inflammation and oxidative stress-induced tissue damage, often accompanied by gut microbiota dysbiosis. Probiotics have recently been recognized as promising therapeutic agents for IBD. Herein, we examined the modulatory effects of orally administered metal-organic framework (MOF) nanozyme MOF-818 on gut microbiota in a mouse model of IBD. Oral treatment with MOF-818 significantly alleviated IBD symptoms, reduced intestinal oxidative damage, and favorably altered the gut microbiota composition. Notably, MOF-818 selectively enhanced the proliferation of Roseburia intestinalis (R. intestinalis). Further analyses showed that MOF-818 significantly upregulated bacterial division-related genes (ftsZ, ftsE) in R. intestinalis while genes associated with ATP synthesis (atpA, atpD) were also highly expressed, boosting energy production to support rapid cell division and proliferation. These findings underscore the biofunctional role of MOF-818 as an active modulator of the gut microflora rather than a passive therapeutic agent, which highlights its significant synergistic potential with probiotics and lays a theoretical foundation for the future application of MOF-based materials in combination with probiotics.

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研究方向: Chemistry; Science & Technology - Other Topics; Materials Science

输出日期: 2025-10-01

第 4 条

标题: Non-destructive origin identification of millet based on the combination of NIRS and improved WOA-based feature wavelength selection

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摘要: To achieve the non-destructive identification of millet origin, near-infrared spectroscopy was used to collect the raw spectral data of the millet. Considering the issues of high-dimensional redundancy and spectral peak overlap in near-infrared spectral data, feature wavelengths were selected using the Competitive Adaptive

Reweighted Sampling (CARS) algorithm, the Uninformative Variable Elimination (UVE) algorithm, and the Whale Optimization Algorithm (WOA), resulting in 26, 158, and 123 feature wavelengths, respectively. To further improve feature extraction effectiveness, strategies such as chaotic mapping were integrated into the Whale Optimization Algorithm (IWOA), reducing the selected feature wavelengths from 123 to 27 variables. Meanwhile, to improve model accuracy, the Crown Pig Optimization (CPO) algorithm was combined with the Least Squares Support Vector Machine (LSSVM) to construct the CPO-LSSVM model for millet origin identification. Experimental results showed that, after wavelength selection, both the LSSVM model and the CPO-LSSVM model exhibited better identification performance than the full-spectrum models. Among them, the model based on the IWOA feature wavelength selection combined with CPO-LSSVM exhibited the best performance, achieving an accuracy of 99.03%, with precision, recall, and F1 score all reaching 99.20%; compared with the full-spectrum LSSVM model, these metrics improved by 21.67%, 19.86%, 21.88%, and 20.87%, respectively. In addition, the effectiveness of the proposed IWOA feature wavelength selection method and CPO-LSSVM model was validated on public datasets. The research results demonstrate that the IWOA algorithm, while selecting an effective number of wavelengths, also improves the model's performance. The CPO-LSSVM model can rapidly and accurately identify the origin information of millet, achieving precise traceability of the millet's provenance while simultaneously providing a new reference for the origin identification of other agricultural products.

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第 5 条

标题: A nondestructive and rapid method for in situ measurement of crude fat content in soybean grains

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摘要: Sample heterogeneity compromises near-infrared (NIR) accuracy for crude fat content (CFC) in soybeans, traditionally requiring destructive grinding. Existing methods lack real-time nondestructive alternatives. We hypothesized that Raman-NIR fusion via an enhanced machine learning framework could enable precise, nondestructive CFC quantification. An enhanced broad learning system (EBLS) integrating NIR and Raman spectra was developed. The EBLS achieved accuracy comparable to destructive methods (RSQ > 0.92), outperformed existing grain-level techniques, and reduced moisture interference versus standalone NIR. Statistical validation confirmed no significant differences from national standards (95 % confidence). This multimodal spectral fusion paradigm allows real-time CFC analysis during soybean transactions and adaptive industrial parameter optimization, addressing preprocessing-free measurement needs.

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第 6 条

标题: Discrimination of different varieties of rice in Wuchang area based on E-nose and HS-SPME-GC-O-MS

作者: Qian, LL (Qian, Lili); Chen, MM (Chen, Mingming); Song, Y (Song, Yan); Zhang, T (Zhang, Tao); Liu, XQ (Liu, Xingquan); Zhou, GX (Zhou, Guoxin); Liu, HY (Liu, Hongyan); Zuo, F (Zuo, Feng)

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摘要: This study aimed to discriminate between different varieties of rice from the Wuchang region using a combination of electronic nose (E-nose), headspace solid-phase microextraction-gas chromatography-olfactometry-mass spectrometry (HS-SPME-GC-O-MS), and chemometric analysis. Six rice varieties (Wuyoudao No. 4 (WC54), Longyang No. 11 (LY11), ZhongKefa No. 5 (ZKF5), Dongnong No. 425 (DN425), Longyang No. 16 (LY16) and Suijing No. 18 (SJ18)) were analyzed to identify key volatile compounds and aroma-active substances. The electronic nose provided initial differentiation, particularly by the 5 th, 14 th, and 11 th sensors), which showed significant differences in their response strength between ZKF5 and LY16. Furthermore, 148 differential volatile compounds (VIP > 1) were identified by HS-SPME-GC-MS, and aldehydes and alkanes were the most significant contributors to the aroma profiles. Meanwhile, orthogonal partial least squares-discriminant analysis (OPLS-DA) further confirmed the distinctiveness of each rice variety based on their volatile compounds ((RY)-Y-2 = 0.991, Q(2) = 0.900). Additionally, GC-O analysis revealed 36 aroma-active compounds, with WC54 exhibiting the highest aroma intensity, characterized by fruity and creamy notes. The study successfully differentiated WC54 from other varieties, providing a robust method for protecting geographical indication products and ensuring consumer rights.

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第 1 条

标题: Evolution mechanism of thermo-mechanical properties and microstructure of foamed cement regulated by water-based drilling cuttings content

作者: Huang, LD (Huang, Lidi); Che, JR (Che, Jieran); Jiang, W (Jiang, Wei); Li, XY (Li, Xingyu); Li, Q (Li, Qing); Fan, SJ (Fan, Shijie); Liu, YD (Liu, Yandong)

Web of Science 核心合集中的 **"被引频次":** 0

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摘要: Characterized by high water content, complex residual drilling fluid components, and stable mineral phases, water-based drilling cuttings (WDC) present significant environmental disposal challenges while also holding great potential for resource utilization. This study systematically examined the effects of different WDC replacement ratios (0 %, 5 %, 10 %, 15 %, 20 %, and 25 %) on the pore structure, 28-day compressive strength, water absorption, softening coefficient, and thermal conductivity of foamed cement (FC). Additionally, multiple technical methods including X-ray diffraction (XRD) and scanning electron microscopy (SEM) were employed to analyze the physicochemical properties of WDC and explore the microstructural evolution that influences the material's macroscopic performance. The results showed that WDC incorporation effectively lowered the dry density and thermal conductivity of the FC, thereby improving its insulation properties. Conversely, this also caused a decrease in compressive strength and an increase in water absorption. Importantly, the study identified an optimal balance among these competing properties at a WDC content of 20 %. At this ratio, the samples achieved a dry density of 752.2 kg/m3 , a compressive strength of 3.27 MPa, a thermal conductivity of 0.160 W center dot m-1 center dot K-1 , a 48-hour water absorption of 31.44 %, and a softening coefficient of 0.61. Fitting curves between porosity and compressive strength, water absorption, and thermal conductivity quantitatively revealed the relationships between pore characteristics and key performance factors. Microstructural analysis revealed that WDC, through its specific mineral composition, influenced the porosity and compactness of the cement matrix, thereby determining the material's mechanical and thermal properties. This research provides a foundation for developing a low-cost, low-carbon solution for the resource utilization of WDC.

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第 2 条

标题: The impact of information technology on the progress of ideological and political education

作者: Ma, SX (Ma, Sanxi)

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摘要: The use of information technology (IT) in today's classrooms is crucial due to the very rapid pace at which technological developments are created. Information technology provides a unique set of possibilities in the field of political and ideological education for grabbing students' interest, encouraging critical thinking, and generating knowledgeable citizens. However, choosing the best information technology-enabled solution is a challenging challenge, especially for companies like Central Universities. To properly address this challenge, it is essential to establish a rigorous assessment system that considers a multitude of state characteristics, such as authenticity, resource efficiency, inclusiveness, and ethical values. Using the q-ROFS environment and the ENTROPY and WASPAS techniques, our study demonstrates a contemporary approach to tackling this important problem. Therefore, Central University and other similar institutions will benefit from this integration by receiving accurate data and practical solutions to the challenges of technology integration, which they can then handle in a precise and firm way. In this opening section, we lay the framework for a substantial investigation into the ways in which our proposed paradigm has the potential to revolutionize political and ideological education in the contemporary digital era.

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研究方向: Engineering

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第 3 条

标题: DEM-CFD coupling simulation and optimization of an air-pressure high-speed precision seed-metering device for maize delta-row dense plantings

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Web of Science 核心合集中的 **"被引频次":** 0

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摘要: High-speed operation and dense plantings operation are important research directions of precision seeding technology. The shape of maize seeds is irregular, the seeds are staggered and the seed spacing is small under the dense plantings mode of the delta-row, and the seeding performance of the seed-metering device is poor at highspeed operation. In order to solve this problem, an air-pressure high-speed precision seed-metering device with double cavities and double plates interlaced and synchronous rotation was put forward. The delta-row index (DRI) was defined as one of the evaluation indexes to quantitatively evaluate the seeding effect of the seedmetering device in the simulation test and the bench test. The coupling of discrete element method and computational fluid dynamics (DEM-CFD) simulation was used to explore the process of delta-row formation in the seed-filling zone and seed-cleaning zone of the seed-metering device, and the effects of seed type, seedclearing angle, chamber pressure and operating speed on the DRI, qualified index (QI), multiple index (MI) and seedless index (SI) were analysed by single-factor experiment. Based on the single-factor experiment, the regression model between the seed-clearing angle, the chamber pressure, the operating speed and the seedmetering performance was obtained by using the Box-Behnken experimental design method, and the optimal working parameter combination was determined and verified by experiments. The reliability of the simulation test, the auxiliary seed-filling effect of the groove and the rationality of the definition of the DRI are verified by the bench test. The results showed that the optimal combination of working parameters was seed-clearing angle of 2.6 degrees, chamber pressure of 3.475 kPa and operating speed of 11.12 km center dot h-1 and the parameter combination was

verified by simulation tests to have the DRI of 95.00 %, the QI of 98.35 %, the MI of 0.82 %, and the SI of 0.82 %. The relative errors (RE) between the bench verification test and simulation test were 0.07 % for the DRI, 0.09 % for the QI, 12.01 % for the MI, and 17.86 % for the SI, which were basically consistent with the optimization results and could meet the high-speed precision seeding requirements of the maize delta-row dense plantings mode.

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第 4 条

摘要: To address the challenges of low density, loose structure, high utilization costs, and inadequate molding effects of corn straw char under ambient temperature and pressure conditions, this study investigated the utilization of waste soybean powder (WSP) as a binder to produce biochar pellets via ultrasonic-assisted processing. A single-factor experiment was initially conducted to assess the effects of key variables. Subsequently, a Central Composite Rotatable Design (CCRD) was employed to evaluate the individual and interactive effects of these variables, in which pellet density and durability served as response indicators. Regression models for both responses were developed and validated using analysis of variance (ANOVA). The results indicated that, at a 0.05 significance level, the mixing ratio of corn straw char to

WSP and molding pressure had highly significant effects on pellet density, while pelleting time had a significant effect and ultrasonic power had no significant influence. All four factors significantly affected pellet durability, and their interactions were further analyzed. The optimal conditions were a mixing ratio of 45%, pelleting time of 33 s, an ultrasonic power of 150 W, and a molding pressure of 5 MPa, yielding pellets with a density of 1140.41 kg/m3 and a durability of 98.54%. These results demonstrate that WSP is an effective binder for the ultrasonic-assisted fabrication of biochar pellets.

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第 5 条

标题: Research on Compound Fault Diagnosis of Bearings Using an Improved DRSN-GRU Dual-Channel Model

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Web of Science 核心合集中的 "被引频次": 6

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摘要: In practical engineering, noise often contaminates the fault signals of rolling bearings, making it difficult to accurately diagnose compound faults. To tackle this challenge, this article introduces a rolling bearing compound fault diagnosis model using an enhanced dual-channel deep residual shrinking network (DRSN)-GRU structure. The model improves the soft threshold function of the residual shrinkage building unit (RSBU), creating the progressive RSBU (PRSBU) module. It constructs a DRSN channel for initial feature extraction, while the gated recurrent unit (GRU) is integrated with convolutional pooling layers to form the GRU channel, designed for extracting linear features. By using a dual-channel connection approach, the model

minimizes potential information loss or error accumulation that can occur in a single model structure. In the recognition module, a multilabel classification framework is established to identify compound faults. Experimental results show that, under strong noise conditions, the improved DRSN-GRU significantly outperforms the standard DRSN-GRU and other models, achieving 91.2% accuracy while effectively decoupling and recognizing compound faults.

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Environmental Sciences& Ecology

第 1 条

标题: Coupling coordination relationship between forestry industry development and the ecological environment: evidence from the Northeast region of China

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来源出版物: FRONTIERS IN ENVIRONMENTAL SCIENCE 卷: 13 文献号: 1604533 **DOI:** 10.3389/fenvs.2025.1604533 **Published Date:** 2025 JUL 24

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摘要: The Chinese economy is entering a new era of high-quality development, and promoting high-quality development has become an inevitable requirement for maintaining healthy economic development and adhering to the laws of economic development. As an essential component of China's modern economic construction, the high-quality development of the forestry industry will serve as a meaningful way to transform traditional and emerging driving forces and accelerate the construction of ecological civilization. However, as the development of the forestry industry mainly relies on forest resources, the continuous consumption of these resources will inevitably impact the environment, leading to contradictions between the industry's development and ecological preservation. Therefore, taking the Northeast region as an example, this paper applies the coupling coordination degree model to calculate the coupling coordination relationship between the development of the forestry industry and the ecological environment in Northeast China from 2011 to 2022. This

analysis holds important practical significance for promoting coordination between the development of the forestry industry and the ecological environment in the region. The results indicate that, first, the development of the forestry industry and the ecological environment promote, influence, and constrain each other. Second, from 2011 to 2022, there is still a specific gap between the development of the forestry industry and the ecological environment in Northeast China, although both have reached a state of benign coordination. Third, during this period, only Liaoning Province exhibited a relationship between the development of the forestry industry and the ecological environment that included antagonism, adaptation, coupling, and imbalance, while the other two provinces showed no signs of imbalance. Based on the above findings, the Northeast region can promote the coupling coordinated development of the forestry industry and the ecological environment by restructuring the forestry industry transformation model, rationally developing and utilizing forest resources, advocating for clean production projects, and promoting low-carbon economic development.

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Food Science & Technology

第 1 条

标题: Combined use of near infrared spectroscopy and chemometrics for the simultaneous detection of multiple illicit additions in wheat flour

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Web of Science 核心合集中的 "被引频次": 0

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摘要: The safety and quality of wheat flour, a staple in daily life, directly affect people's health. The illegal use of additives such as azodicarbonamide, talcum and gypsum powders can lead to serious health risks. Traditional detection methods are time-consuming and unsuitable for routine screening, creating an urgent need for rapid, non-destructive techniques. To identify multiple illicit additives within wheat flour, a simultaneous detection model for three additives-azodicarbonamide, talcum and gypsum powders-was constructed using nearinfrared spectroscopy and chemometrics methods. The model combines long short-term memory network (LSTM) data dimensionality reduction with partial least squares to detect multiple illicit additives in wheat flour. The Bayesian optimization algorithm was used to optimize the LSTM parameters. Compared to regression models built with competitive adaptive reweighted sampling and genetic algorithm for feature wavelength selection, the performance improved significantly, enhancing generalization capability. The validation set's coefficients of determination were 0.9828, 0.9771, 0.9765, with root mean square errors of 0.0008 %, 0.2915 %, 0.2822 %, and residual prediction errors of 7.4067, 6.4020, and 6.2159, respectively. Combining near-infrared spectroscopy with LSTM dimensionality reduction and partial least squares enables quick, simultaneous detection of various illicit additives in wheat flour, providing a novel approach for efficient and precise inspection.

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研究方向: Food Science & Technology

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第 2 条

标题: Structural properties and functional analysis of soluble dietary fiber polysaccharides from rice husk: Effects on oxidative stress management and apoptosis in human colorectal adenocarcinoma cells

作者: Quan, ZG (Quan, Zhigang); Chen, MM (Chen, Mingming); Zhang, DJ (Zhang, Dongjie)

摘要: To improve the utilization rate and added value of rice husks, a highly bioactive soluble dietary fiber polysaccharide fraction (RHSDF-1-II) was purified using anion exchange and gel chromatography. The configuration of RHSDF-1-II and its protective effect against oxidative stress-induced damage in Caco-2 cells were explored. The molecular weight of RHSDF-1-II was 43.077 kDa, and it mainly comprised arabinose, rhamnose, galactose, glucose, and mannose. Its skeleton comprised -*2)-alpha-D-Manp-(1-*, -*6)-alpha-D-Manp-(1-*, -*2,6)-alpha-D-Galp-(1-*, and -*6)-alpha-D-Glcp-(1-*, which were interconnected to constitute the primary strand. The first branch mainly comprised alpha-D-Manp-(1 -* connected to the O-3 and O-6 positions of -*3,6)-beta-D-Glcp-(1-*, and the second branch comprised alpha-D-Glcp-(1-*. Both branches were linked to the O-2 position of the sugar residue -*2,6)-alpha-DGalp-(1-*. RHSDF-1-II was found to reduce the damage caused by H2O2 to Caco-2 cells through the antioxidant defense system, markedly reduce the accumulation of reactive oxygen species, inhibit apoptosis and the formation of malondialdehyde, and increase the intracellular antioxidant enzyme activity. Collectively, RHSDF-1-II can increase the antioxidant levels of Caco-2 cells through the Keap1-Nrf2/HO-1 and AKT/PI3K signaling pathways, thereby alleviating the cell damage caused by oxidative stress. These findings suggest that rice husk-derived SDF polysaccharides could serve as novel antioxidants in functional foods or medicines for treating oxidative stress-related diseases.

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研究方向: Food Science & Technology

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第 3 条

标题: Ultrasonic-assisted extraction, analysis and biological activities of

polysaccharide from white quinoa

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Web of Science 核心合集中的 **"被引频次":** 0

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摘要: The aim of this study was to investigate the optimal process conditions for the preparation of white quinoa polysaccharides and the bioactivity of white quinoa polysaccharides in vitro. This study used white quinoa as raw material and utilized ultrasound-assisted extraction to extract polysaccharides from white quinoa. The optimal extraction technology for white quinoa polysaccharides (WQP) was studied through response surface methodology (RSM) experiments. In addition, preliminary characterization of WQP and determination of their physicochemical properties were conducted. Determined the content of nutrients in WQP. The hypoglycemic, antioxidant, and lipid-lowering effects of WQP were evaluated by different in vitro experiments. The results showed that the yield of WQP was 2.11% under the optimal process. WQP inhibited alpha-glucosidase and alpha-amylase by 60.85% and 51.30%, respectively. The scavenging rates of center dot OH, DPPH, ABTS, and center dot O-2(-) radicals were 48.36%, 67.17%, 74.87%, and 61.26% respectively. In addition, WQP has some choline-binding ability. It also inhibited cholesterol lipase and pancreatic lipase by 49.76% and 80.57% respectively. The present study demonstrated the glucose-lowering, antioxidative and lipid-lowering effects of white quinoa polysaccharide in vitro.

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文献类型: Article; Early Access

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研究方向: Food Science & Technology

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第 4 条

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摘要: Elemental contents are effective fingerprints for Pu-erh tea's geographical traceability, which is crucial for consumer protection and sustainable development. Region and processing methods are key factors influencing the tea's elemental fingerprint. This study analyzed 28 elements in Pu-erh tea samples from three Yunnan production regions subjected to different processing stages in the year of 2023. The results show that significant regional differences were observed for 25 of the 28 elements. As, Li, Cu, Zn, and Cd contents vary significantly during processing. The contents of 27 elements (excluding Pb) are significantly influenced by the interaction between region and processing stage. Orthogonal partial least squares discriminant analysis (OPLS-DA) achieved good validation (Q2 = 0.946) and identified 18 key factors, while the original and cross-validation correct classification rates were 100% and 98.6%, respectively. Crucially, the robustness of the model was confirmed with 100% accuracy through an independent validation set from tea samples in the harvest year of 2024. This study confirms that the elemental contents of Pu-erh tea are mainly influenced by region rather than processing stage, and elemental analysis can trace the geographical origin of Pu-erh effectively, even when mixed with a differently processed tea.

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文献类型: Article

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研究方向: Food Science & Technology

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第 5 条

标题: Sulfated Polysaccharides of Potamogeton lucens as a Promising Immunostimulatory Agent in Activation of RAW264.7 and NK Cells

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摘要: Sulfated polysaccharides are naturally occurring biomacromolecules with complex structures and promising therapeutic effects, the mechanism of which remains to be fully understood. This study isolated a novel sulfated polysaccharide from Potamogeton lucens, followed by fractionation by a DAEA Sepharose FF column to assess its immunostimulatory effects on NK-92 and RAW264.7 cells. The primary components within the crude polysaccharides and fractions (PLF1, PLF2 and PLF3) were predominantly neutral sugars, with comparatively lower proportions of sulfate and uronic acids. The isolated polysaccharides exhibited a range of weight average molecular weights (M_w) from 488.7 to 918.9 x 10^3 g/mol. Polysaccharide composition included glucose, galactose, arabinose, rhamnose, mannose, and xylose units linked through various glycosidic linkages, including (1 -> 4)-Galp, (1 -> 6)-Galp, (1 -> 3)-Galp, (1 -> 3)-Arap, (1 -> 2,4)-Rhap, (1 -> 2)-Glcp and (1 -> 4)-Glcp residues. The PLF2 polysaccharide showed remarkable efficacy by activating RAW264.7 macrophage cells to synthesize NO, TNF-alpha, IL-1 beta and IL-6, while also activating NK-92 cells to synthesize TNF-alpha, INF-gamma, granzyme-B, perforin, NKG2D, and FasL via the NF-kappa B and MAPKs signaling pathways. Collective findings indicated that polysaccharides derived from P. lucens have the potential to serve as potent immunostimulatory compounds in functional foods, capable of eliciting responses in both RAW264.7 and NK cells.

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文献类型: Article

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研究方向: Food Science & Technology

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第 6 条

标题: Preventive regulation of cellular heat stress injury by mung bean polyphenols revealed by multi-omics analysis

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摘要: Based on the Caco-2 cell heat stress model, the study explored the heat stress preventive regulatory mechanisms of key polyphenol fractions in mung bean by metabolomics and transcriptomics association analysis. Results Mung bean polyphenol intervention before heat stress significantly reduced the elevated expression level of heat shock protein 70 (HSP70) caused by 39 degrees C temperature. At the metabolic level, mung bean polyphenols could play a role in heat stress regulation by alleviating oxidative stress damage. At the gene level, mung bean polyphenols showed regulation of cell proliferation, differentiation, and DNA damage, with DUSP6 and NEURL3 as key regulatory genes. The correlation analysis showed that nucleotide metabolism, and oxidative phosphorylation metabolism were the key

pathways in the regulation of mung bean polyphenols by heat stress. Then mung bean polyphenols can exert heat stress preventive activity through the regulation of cellular oxidative damage and energy metabolism. This study provides a good idea for the research and development of dietary intervention products for heat stress.

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研究方向: Food Science & Technology

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第 7 条

标题: Can correcting the market failures of credence goods promote corporate innovation? Evidence from compulsory food safety liability insurance

作者: Wang, YD (Wang, Yaodong); Wu, MG (Wu, Maoguo)

来源出版物: FRONTIERS IN SUSTAINABLE FOOD SYSTEMS 卷: 9 文献号: 1510759 **DOI:** 10.3389/fsufs.2025.1510759 **Published Date:** 2025 JUL 25

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摘要: Employing a staggered difference-in-differences design, this study examines the impact of China's Compulsory Food Safety Liability Insurance (CFSLI) policy on corporate innovation within the food industry. Empirical results demonstrate that CFSLI implementation significantly stimulated innovation among affected firms. This positive effect was heterogeneous, exhibiting greater magnitude in non-state-owned enterprises and firms operating in regions with higher levels of marketization. The core findings withstand a comprehensive battery of robustness checks. Investigation into the underlying mechanisms reveals that the policy primarily fosters innovation by alleviating financing constraints, augmenting R&D investment, and enhancing corporate risk-bearing capacity. Beyond stimulating innovation, the CFSLI policy also significantly enhanced the total factor productivity and overall performance of food companies. These findings collectively indicate that the CFSLI policy not only

facilitated the effective translation of innovation inputs into outputs but also supported broader corporate growth. This research contributes to the literature by providing novel empirical evidence on the innovation and productivity effects of mandatory liability insurance within the credence goods sector. It offers valuable insights for policymakers seeking to leverage institutional mechanisms, such as liability insurance, to promote innovation and development in analogous industries characterized by information asymmetry, including pharmaceuticals and medical services.

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研究方向: Food Science & Technology

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Genetics & Heredity

第 1 条

标题: Evaluation and genome-wide association study of saline-alkali tolerance in high-latitude rice resource populations

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摘要: Introduction China is the world's third largest saline-alkali land country, and the breeding of salt-tolerant rice varieties has always been a key focus of rice breeders. Screening and identifying salt-tolerant varieties and exploring related genes are essential for breeding.Methods In this study, 450 high-latitude resource populations were planted on natural saline-alkali soil for 2 years under 2 treatments. The comprehensive agronomic traits of the populations were evaluated. The principal component and cluster analyses were used to preliminarily group the phenotypes, and individual phenotypes were comprehensively scored and ranked to identify the

top 40 saline-alkali tolerant varieties each year.Results Notably, S321 and S19 were the most saline-alkali tolerant varieties each year. Genome-wide association studies identified one saline-alkali-related position near 6,636,119 bp on chromosome 8 and another near 23,311,931 bp on chromosome 11. Os08g0214233 and Os11g0604900 were the nearest genes from the identified positions, respectively. Gene annotation was used to further screen the polymorphic sites in the associated regions, identifying 17 and 48 genes with 593 variants, including 56 polymorphic sites located in exons.Discussion This study provided candidate gene loci for the fine mapping of saline-alkali tolerance genes and offered excellent resistant rice resources for the molecular improvement of varieties.

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研究方向: Genetics & Heredity

输出日期: 2025-10-01

Immunology

第 1 条

标题: Drosophila melanogaster as a model system for studying the effects of porcine rotavirus on intestinal immunity

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摘要: Introduction Drosophila melanogaster is a quintessential model organism that has been used in many scientific studies. The intestinal immune response of flies is a critical component of their innate immune system. Given that flies primarily consume decaying organic matter, harmful microorganisms present in their food can enter the intestine, leading to frequent infections by exogenous pathogens. When these pathogens are introduced into the intestinal environment, a cascade of immune responses is triggered within the intestinal tissue, aimed at preserving the integrity of the intestinal barrier and ensuring the proper physiological functions of the gut. Porcine rotavirus (PoRV) is a key pathogen that causes diarrhea in pigs, and PoRV infection can significantly reduce piglet survival rates.Methods In this study, wild-type flies were orally administered PoRV to establish an effective intestinal damage animal model, and a detailed investigation of the antiviral immune defense mechanism in the fly intestine was performed.Results and Discussion Our study revealed that PoRV infection caused a reduction in the survival rate of flies and an increase in intestinal epithelial cell death. Concurrently, PoRV infection significantly promoted the proliferation and differentiation of intestinal cells, contributing to the maintenance of intestinal homeostasis. After the activation of JAK/STAT signaling in the intestines of infected Drosophila, there was an increase in the levels of reactive oxygen species (ROS). This elevation was concomitant with the release of antimicrobial peptides (AMPs), which play a crucial role in pathogen clearance. Additionally, we identified substantial aggregation of hemocytes in the midgut. The composition of the intestinal microbiota also underwent changes, potentially playing a role in intestinal immune defense. Moreover, PoRV can evade clearance via the RNA interference (RNAi) pathway. In summary, PoRV infection in the fly intestine activates multiple immune defense mechanisms to eliminate the pathogen, offering a theoretical basis for PoRV prevention and control.

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Medical Laboratory Technology

第 1 条

标题: Target recycling amplification (TRA) combined with multiple strand displacement amplification (SDA) for sensitive detection of Epstein-Barr virus microRNA

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摘要: Objectives: Epstein-Barr virus (EBV) infection is strongly associated with the development of nasopharyngeal carcinoma. However, existing diagnostic methods based on EBV antibodies and plasma DNA exhibit insufficient sensitivity and specificity for early detection. This study aimed to overcome this limitation by developing a highly sensitive and specific method for detecting the EBV-encoded biomarker microRNA miR-BART6-3p. Methods: We designed a probe (EB4) containing a C-rich sequence, a restriction endonuclease half-recognition site, a G-rich stem-loop structure, and a target recognition domain. Based on this probe, an isothermal fluorescence platform was developed by integrating target recycling amplification (TRA) with strand displacement amplification (SDA). The detection mechanism relies on miR-BART6-3p initiating a polymerase-endonuclease cycle, which generates G-quadruplex structures and target-like DNA. The fluorescence signal is produced when Thioflavin T (ThT) binds to these G-quadruplexes. The sensitivity, specificity, and anti-interference capability of the method were systematically evaluated. Results: The assay exhibited a broad linear detection range for miR-BART6-3p, spanning from 1 pM to 100 nM, with an ultra-low detection limit of 0.143 pM, thereby demonstrating significantly enhanced sensitivity compared to conventional methods. The assay also displayed high specificity, effectively differentiating targets with single-base mismatches. Clinical evaluation using serum samples revealed markedly elevated fluorescence signals in EBV-positive patients relative to healthy controls. Furthermore, the platform exhibited strong anti-interference capability, ensuring reliable performance under complex biological conditions. Conclusions: This study successfully developed a one-step, single-probe method for detecting EBV miRNA (miR-BART6-3p) with high sensitivity and

specificity. The TRA-SDA platform provides operational simplicity, high interference resistance, and superior diagnostic performance. This innovative approach shows great clinical application prospects as a molecular diagnostic tool for the early detection of nasopharyngeal carcinoma.

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研究方向: Medical Laboratory Technology

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Microbiology

第 1 条

标题: Heat Shock Protein 70 in Cold-Stressed Farm Animals: Implications for Viral Disease Seasonality

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摘要: The seasonal patterns of viral diseases in farm animals present significant challenges to global livestock productivity, with cold stress emerging as a potential modulator of host-pathogen interactions. This review synthesizes current knowledge on the expression dynamics of heat shock protein 70 (HSP70) in farm animals under

cold-stress conditions and its potential roles as (1) a viral replication facilitator and (2) an immune response regulator. This review highlights cold-induced HSP70 overexpression in essential organs, as well as its effects on significant virus life cycles, such as porcine epidemic diarrhea virus (PEDV), porcine reproductive and respiratory syndrome virus (PRRSV), and bovine viral diarrhea virus (BVDV), through processes like viral protein chaperoning, replication complex stabilization, and host defense modulation. By integrating insights from thermophysiology, virology, and immunology, we suggest that HSP70 serves as a crucial link between environmental stress and viral disease seasonality. We also discuss translational opportunities targeting HSP70 pathways to break the cycle of seasonal outbreaks, while addressing key knowledge gaps requiring further investigation. This article provides a framework for understanding climate-driven disease patterns and developing seasonally adjusted intervention strategies.

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Nutrition & Dietetics

第 1 条

标题: Conjugation of Pea Peptides and D-Xylose via Maillard Glycosylation and Its Functionality to Antagonize Alcohol-Induced Liver Injury in Zebrafish

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摘要: Background: In this study, the preparation of pea glycopeptides based on the Maillard glycosylation pathway (PPH-M) and its antagonistic mechanism against alcoholic liver injury in zebrafish were studied. Results: The results showed that the conjugation of D-xylose significantly improved the antioxidant activity of pea protein

hydrolysates (PPHs). The structural characterization indicated that PPH was successfully covalent binding to D-xylose, which was mainly manifested as a stretching vibration change in Fourier transform infrared spectroscopy (FTIR) and molecular size increase. Scanning electron microscopy (SEM) and zeta potential also confirmed the covalently bound of the two. In addition, a model of alcohol-induced liver injury in zebrafish was established. Through the intervention of different doses of PPH-M, it was found that the intervention of PPH-M could significantly increase superoxide dismutase (SOD) activity, reduce malondialdehyde (MDA) content, aspartate aminotransferase (AST), and alanine aminotransferase (ALT) activity, and significantly improve alcohol-induced liver injury in zebrafish. The protective effect of PPH-M was also confirmed by liver pathology and fluorescence microscopy. Finally, reverse transcription-polymerase chain reaction (qRT-PCR) results indicated that PPH-M could significantly regulate the expression level of antioxidant-related mRNA. PPH-M could also regulate the expression of the Keap1/Nrf2 signaling pathway and up-regulated glutathione synthesis signaling pathway to antagonize alcohol-induced liver injury in zebrafish. Conclusion: This study revealed the mechanism of PPH-M antagonized alcoholic liver injury and laid a theoretical foundation for its development as functional foods.

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Oncology

第 1 条

标题: Ethyl β-carboline-3-carboxylate targets PRDX5/c-Jun axis for novel therapeutic strategy against cervical cancer

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摘要: Objective Cervical cancer remains a significant global health challenge, with conventional therapies often proving inadequate due to treatment resistance and adverse effects. This study investigates the therapeutic potential of ethyl beta-carboline-3-carboxylate (beta-CCE) in cervical cancer and elucidates its molecular mechanism through peroxiredoxin 5 (PRDX5) modulation.MethodsWestern blot assay were performed to asses the expression of protein levels; The cellular and mitochondrial ROS and mithochondrial membrane potential were observed with fluorescence microscopy; Bioinformatics analysis were used to check the expression levels of PRDX5 and JUN family proteins and prognosis analysis in cervical cancer; Transcriptome analysis was performed to analyse the gene expression levels between mock and shPRDX 5 cells; Serum TNF-alpha and INF-gamma levels were detected by ELISA kits; HE staining analysis were performed to check the organ histopathological changes in mice.ResultsThis effect is mediated through activation of the MAPK signaling cascade, particularly involving P38, ERK, and JNK pathways. Notably, beta-CCE treatment promotes apoptosis through c-Jun up-regulation, with PRDX5 knockdown enhancing this effect while its overexpression provides protection. In xenograft mouse models, beta-CCE treatment significantly suppressed tumor growth and enhanced anti-tumor immune responses, particularly in PRDX5-depleted conditions, without apparent systemic toxicity. The therapeutic efficacy was evidenced by reduced tumor volume (65.3%) and elevated levels of immunological markers (IFN-gamma and TNF-alpha).ConclusionThese findings establish PRDX5 as a critical therapeutic target in cervical cancer and demonstrate beta-CCE potential as a novel treatment strategy through its dual mechanism of direct tumor cell apoptosis and immune response modulation. Our study provides compelling evidence for the development of PRDX5-targeted therapies using beta-CCE as a promising therapeutic agent for cervical cancer treatment.

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研究方向: Oncology; Endocrinology & Metabolism

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Pharmacology & Pharmacy

第 1 条

标题: Synthesis and evaluation of scutellarein derivatives with improved neuroprotective activity and aqueous solubility

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摘要: Oxidative stress caused cell damage is considered the primary pathogenic mechanism of cerebral ischemiareperfusion injury (CIRI). Scutellarein is a natural flavonoid compound with excellent antioxidant and antiinflammatory activities, which could be developed as a promising neuroprotective agent, but its poor water solubility limits its clinical application. To improve the water solubility of scutellarein and enhance its activity further, phosphate or phosphonate groups was introduced, thus six scutellarein derivatives were designed and synthesized. The water solubility and

neuroprotective effects of these derivatives were evaluated. Among them, compound 12b exhibited more potent cytoprotective effect and water solubility than the lead compound scutellarein. Mechanism studies revealed that compound 12b could prevent H2O2 induced neuronal apoptosis, significantly decrease ROS generation, reduce MDA and elevate SOD levels in a dose-dependent manner. Furthermore, western blot assay disclosed that compound 12b could activate Nrf2 and increase the expression of its downstream genes HO-1 in a concentration-dependent manner, thus displaying potent neuroprotective activity. In summary, the phosphonate derivative 12b not only has excellent water solubility but also superior cytoprotective activity, making it a promising neuroprotective agent worthy of further development.

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文献类型: Article

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研究方向: Pharmacology & Pharmacy

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第 2 条

标题: Isoquercitrin: From natural source to clinical candidate - Synthesis, pharmacology, and metabolic safety

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来源出版物: FITOTERAPIA 卷: 185 文献号: 106766 **DOI:** 10.1016/j.fitote.2025.106766 **Published Date:** 2025 SEP

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摘要: Isoquercitrin (ISQ, C21H20O12) is a typical flavonoid compound characterized by a C6-C3-C6 backbone structure. It is widely distributed across various plant

families, including Fabaceae, Poaceae, and Solanaceae, and can be obtained through standardized extraction processes. Modern pharmacological studies have demonstrated that ISQ exhibits extensive pharmacological activities and exerts significant therapeutic effects on diseases affecting the circulatory, nervous, metabolic, and musculoskeletal systems. In this review, a systematic literature search was conducted using the Web of Science, Google Scholar, ScienceDirect, and PubMed databases for publications from 2015 to the present. Based on predefined inclusion criteria, 1694 articles were screened, and 117 studies were ultimately included for systematic analysis. This study comprehensively evaluates the pharmacological mechanisms, toxicity, synthetic methods, and pharmacokinetic properties of ISQ. Several studies have shown that ISQ exerts its multifaceted biological effects through modulation of key biological processes. Mechanistically, ISQ regulates JAK/STAT3 signal transduction, activates the Nrf2/ARE antioxidant pathway, and suppresses NF-kappa B-mediated inflammatory responses. Furthermore, it concurrently modulates AMPK-mediated energy metabolism, PI3K/Akt-dependent cell survival, and Wnt-associated developmental pathways. These coordinated mechanisms collectively contribute to its anti-inflammatory, antioxidant, metabolic regulatory, and tumor-suppressive properties. The compound selectively induces programmed cell death in cancer cell lines such as A549, AGS, and Huh7 through a cell type-dependent cytotoxic mechanism. Analysis of the pharmacokinetic characteristics of ISQ has indicated low oral bioavailability, suggesting the necessity for formulation improvement. Additionally, this study explores potential research directions and the clinical translation pathways of ISQ. This review comprehensively summarizes the latest research advances in ISQ, encompassing its natural sources, synthetic approaches, pharmacological activities, metabolic pathways, and toxicological profiles.

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第 1 条

标题: Identification and Evolution of Salt-Tolerant Genes in Weedy Rice Through High-Throughput Resequencing

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Web of Science 核心合集中的 **"被引频次":** 0

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摘要: Weedy rice, a wild relative of cultivated rice, is highly stress-resistant and proliferates in paddy fields. In this study, 353 weedy rice accessions were analyzed to identify salt-tolerance genes using population evolution analysis, phenotypic screening, genome-wide association studies (GWAS), transcriptome analysis, haplotype characterization, gene knockout experiments, and Na+ and K+ ion flux assays. Population structure analysis classified the accessions into six distinct groups. Three salt-tolerant accessions-HW131, HW136, and HW119-were identified based on leaf rolling degree (LRD), leaf withering degree (LWD), chlorophyll content (ChlC), and nitrogen content (NC) traits. GWAS and transcriptome data pinpointed LOC_Os06g39270 and LOC_Os06g11860 as candidate salt-tolerance genes. Haplotype analysis and qPCR confirmed two major haplotypes: AHap2 and BHap1. A 2-bp deletion (TC) at position 818 bp in LOC_Os06g11860 was associated with severe salt sensitivity (phenotypic grade 7), whereas the wild-type exhibited strong tolerance (grade1). Knockout mutants exhibited significantly increased Na+ and K+ flux across mesophyll cell membranes compared to wild-type plants, validating LOC_Os06g11860 (OsERFH1) as a crucial salt-tolerance gene. This study provides novel genetic insights into salt-stress adaptation in weedy rice, paving the way for breeding enhanced salt-tolerant varieties.

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研究方向: Plant Sciences

输出日期: 2025-10-01

第 2 条

标题: Whole-Genome Analysis and Growth-Promoting Mechanism of Klebsiella pneumoniae YMK25 from Maize Rhizobacteria

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Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计: 0

摘要: Plant growth-promoting rhizobacteria (PGPR) are microorganisms that enhance plant growth through various mechanisms. In the context of global agriculture, which faces fertilizer dependency and environmental pollution, developing eco-friendly microbial fertilizers has become crucial for enhancing agricultural sustainability. To identify highly effective PGPR, we isolated 102 bacterial strains from maize rhizosphere soil using the dilution plating method. The strains were screened for growth-promoting abilities using functional media, resulting in the selection of strain YMK25 for its exceptional capabilities in nitrogen fixation, solubilization of inorganic and organic phosphorus, indole-3-acetic acid (IAA) production, and siderophore production. Strain YMK25 produced IAA at a concentration of 80.49 +/- 0.68 mu g/mL and exhibited a relative siderophore expression level of 43.68%. Morphological analysis, 16S rDNA gene sequence analysis, and whole-genome sequencing confirmed that strain YMK25 is Klebsiella pneumoniae. Whole-genome analysis revealed a total genome length of 5,115,280 bp, a GC content of 57.61%, and it contained 4746 coding genes. Gene annotation results indicated genes involved in siderophore synthesis, phosphatase activity, and other plant growth-promoting functions, which align with the verified characteristics of strain YMK25. Furthermore, this strain exhibited significant metabolic capabilities. The pot experiment demonstrated that strain YMK25 promotes maize plant growth and assists in nutrient fixation in these plants. In conclusion, strain YMK25 is a high-quality PGPR with substantial potential for application in agricultural production, presenting promise for

widespread use in sustainable agriculture.

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研究方向: Plant Sciences

输出日期: 2025-10-01

第 3 条

标题: Pearl Bodies as a Potential Source of Secondary Transmission of Papaya Leaf Distortion Mosaic Virus in Carica papaya

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Web of Science 核心合集中的 **"被引频次":** 0

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摘要: Pearl bodies are small, pearl-like structures found on the surfaces of many tropical and subtropical plant species, including Carica papaya L., that serve as a nutritious food source for arthropods, helping plants defend against herbivores. This study investigated the role of pearl bodies in viral accumulation and transmission, focusing on papaya plants infected with papaya leaf distortion mosaic virus (PLDMV),

a destructive pathogen threatening papaya production. Viral analysis of pearl bodies from PLDMV-infected plants confirmed the presence of viral particles, genomic RNA, and coat protein, with quantitative real-time reverse transcriptase PCR showing significant viral RNA accumulation. These findings suggest that pearl bodies act as reservoirs for PLDMV. Infectivity tests demonstrated that ruptured pearl bodies from infected plants effectively transmitted PLDMV to healthy plants via mechanical inoculation. The fragility of stalks and cell surfaces of pearl bodies facilitates their detachment or rupture during mechanical activities, potentially releasing virus-laden contents into the environment. This poses a significant risk of contamination for agricultural tools, equipment, and personnel, contributing to secondary transmission. This study emphasizes the importance of recognizing pearl bodies as an overlooked source of viral spread, highlighting the need for careful handling and targeted management strategies to reduce virus transmission risks in papaya cultivation. This is the first report of pearl bodies' involvement in virus transmission, which provides novel insights into virus epidemiology and disease management in papaya cultivation and other crops with pearl bodies.

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第 4 条

标题: GhostConv+CA-YOLOv8n: a lightweight network for rice pest detection based on the aggregation of low-level features in real-world complex backgrounds

作者: Li, F (Li, Fei); Lu, Y (Lu, Yang); Ma, Q (Ma, Qiang); Yin, SX (Yin, Shuxin); Zhao, R (Zhao, Rui)

来源出版物: FRONTIERS IN PLANT SCIENCE **卷:** 16 **文献号:** 1620339 **DOI:** 10.3389/fpls.2025.1620339 **Published Date:** 2025 AUG 13

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摘要: Deep learning models for rice pest detection often face performance degradation in real-world field environments due to complex backgrounds and limited computational resources. Existing approaches suffer from two critical limitations: (1) inadequate feature representation under occlusion and scale variations, and (2) excessive computational costs for edge deployment. To overcome these limitations, this paper introduces GhostConv+CA-YOLOv8n, a lightweight object detection framework was proposed, which incorporates several innovative features: GhostConv replaces standard convolutional operations with computationally efficient ghost modules in the YOLOv8n's backbone structure, reducing parameters by 40,458 while maintaining feature richness; a Context Aggregation (CA) module is applied after the large and medium-sized feature maps were output by the YOLOv8n's neck structure. This module enhance low-level feature representation by fusing global and local context, which is particularly effective for detecting occluded pests in complex environments; Shape-IoU, which improves bounding box regression by accounting for target morphology, and Slide Loss, which addresses class imbalance by dynamically adjusting sample weighting during training were employed. Comprehensive evaluations on the Ricepest15 dataset, GhostConv+CA-YOLOv8n achieves 89.959% precision and 82.258% recall with improvements of 3.657% and 11.59%, and the model parameter reduced 1.34%, over the YOLOv8n baseline while maintaining a high mAP (94.527% vs. 84.994% baseline). Furthermore, the model shows strong generalization, achieving a 4.49%, 5.452%, and 3.407% improvement in F1-score, precision, and recall on the IP102 benchmark. This study bridges the gap between accuracy and efficiency for in field pest detection, providing a practical solution for real-time rice monitoring in smart agriculture systems.

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第 5 条

标题: Optimize the farming system to improve the physical and chemical properties of soil in Northeast China, thereby increasing maize yield

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摘要: Northeast China's black soil region faces soil fertility decline, inadequate straw usage, and low maize yields. To address these issues, we conducted a two-year field experiment. The seven treatments comprised rotary ridge tillage (Con), no-tillage (T1), straw return + no-tillage (T2), deep-plowing straw return + ridge tillage (T3), deep-plowing straw return + flat tillage (T4), straw crushing and return + ridge tillage (T5), and straw crushing and return + flat tillage (T6). We examined the impact of various tillage methods on the structure of soil water-stable aggregates, soil nutrients, enzyme activity, and maize yield. The findings indicated that from 2021 to 2022, the soil macroaggregate content in the T4 considerably increased by 23.52% compared to the Con. Compared to Con, T4 significantly increased the mean weight diameter (MWD) and geometric mean diameter (GMD), enhancing soil fertility. Additionally, T4 reduced bald tip length while boosting the 100-Kernels weight by 24.01%, ultimately increasing maize yield by 13.62%. Consequently, deep-plowing straw return + flat tillage significantly enhanced soil structure, augmented soil fertility, and elevated maize production, rendering it the most appropriate tillage strategy for this region.

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文献类型: Article

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研究方向: Plant Sciences

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第 6 条

标题: Exogenous Brassinosteroids Enhance Host Resistance to Rhizoctonia solani Through Reactive Oxygen Species Homeostasis and Photosynthesis Improvement in Oryza sativa

作者: Chu, KJ (Chu, Kejin); Dong, JJ (Dong, Jiejing); Li, HY (Li, Hongyu); Zhao, CJ (Zhao, Changjiang)

来源出版物: PHYTOPATHOLOGY **DOI:** 10.1094/PHYTO-10-24-0322-R **Early Access Date:** AUG 2025 **Published Date:** 2025 AUG 1

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摘要: Brassinosteroids (BRs) are essential in regulating plant growth and development and response to stress. However, there are few reports on the mechanism of BRs regulating rice resistance to necrotrophic fungus. In this study, rice seedlings were pretreated with BR hormone and its synthetic inhibitor brassinazole and inoculated with Rhizoctonia solani to analyze the reactive oxygen species (ROS), photosynthetic indices, and expression of phytohormone signal components and defense-related genes in rice leaves during pathogen infection. BR treatment significantly decreased the lesion area, increased the activity of antioxidant enzymes and the content of antioxidant substances, and decreased the contents of superoxide anions, hydrogen peroxide, and malondialdehyde. At the same time, BR treatment enhanced the photosynthetic pigment content and Fv/Fm (maximum photochemical quantum yield of PSII) value of rice seedlings. In addition, BR treatment can cause high expression of endogenous BR synthesis and decomposition genes and signal transduction genes, cooperate with salicylic acid, and antagonize jasmonic acid signal gene expression. The structural equation analysis of tested indices uncovered first that a high BR level stimulated the BR signal transduction pathway to regulate photosynthesis and ROS homeostasis through ROS signaling, thereby enhancing the resistance of rice seedlings to R. solani. This study provides theoretical guidance for the application of BR analog chemical regulators.

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文献类型: Article; Early Access

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研究方向: Plant Sciences

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第 7 条

标题: Exploring the Metabolic Pathways of Melon (*Cucumis melo* L.) Yellow Leaf Mutants via Metabolomics

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来源出版物: PLANTS-BASEL 卷: 14 期: 15 文献号: 2300 **DOI:** 10.3390/plants14152300 **Published Date:** 2025 JUL 25

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摘要: A yellow leaf mutant named 'ZT00091' was discovered during the cultivation of the melon variety 'ZT091'. An analysis of the leaf ultrastructure revealed that the chloroplasts of 'ZT00091' were significantly smaller than those of 'ZT091', with irregular shapes, blurred contours, and no starch granules. Metabolomic analysis revealed 792 differentially abundant metabolites between 'ZT00091' and 'ZT091', with 273 upregulated and 519 downregulated. The Kyoto Encyclopedia of Genes and Genomes (KEGG) results indicated that the differentially abundant metabolites were enriched mainly in the carotenoid pathway. qRT-PCR was used to analyze key genes in the carotenoid pathway of melon. Compared with those in 'ZT091', the genes promoting carotenoids and lutein in 'ZT00091' were significantly upregulated, which may explain the yellow color of 'ZT00091' leaves. Significant differences in the chlorophyll contents (chlorophyll a, chlorophyll b, and total chlorophyll) and carotenoid contents were found between 'ZT00091' and 'ZT091', indicating that the yellowing of melon leaves is related to changes in the carotenoid and chlorophyll contents. This study provides a theoretical basis for research on the molecular mechanism of melon yellowing.

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文献类型: Article

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第 8 条

标题: UAV-Based Automatic Detection of Missing Rice Seedlings Using the PCERT-DETR Model

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摘要: Due to the limitations of the sowing machine performance and rice seed germination rates, missing seedlings inevitably occur after rice is sown in large fields. This phenomenon has a direct impact on the rice yield. In the field environment, the existing methods for detecting missing seedlings based on unmanned aerial vehicle (UAV) remote sensing images often have unsatisfactory effects. Therefore, to enable the fast and accurate detection of missing rice seedlings and facilitate subsequent reseeding, this study proposes a UAV remote-sensing-based method for detecting missing rice seedlings in large fields. The proposed method uses an improved PCERT-DETR model to detect rice seedlings and missing seedlings in UAV remote sensing images of large fields. The experimental results show that PCERT-DETR achieves an optimal performance on the self-constructed dataset, with an mean average precision (mAP) of 81.2%, precision (P) of 82.8%, recall (R) of 78.3%, and F1-score (F1) of 80.5%. The model's parameter count is only 21.4 M and its FLOPs reach 66.6 G, meeting real-time detection requirements. Compared to the baseline network models, PCERT-DETR improves the P, R, F1, and mAP by 15.0, 1.2, 8.5, and 6.8 percentage points, respectively. Furthermore, the performance evaluation experiments were carried out through ablation experiments, comparative detection model experiments and heat map visualization analysis, indicating that the model has a strong detection performance on the test set. The results confirm that the proposed model can accurately detect the number of missing rice seedlings. This study provides accurate information on the number of missing seedlings for subsequent reseeding operations, thus contributing to the improvement of precision farming practices.

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文献类型: Article

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研究方向: Plant Sciences

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Robotics

第 1 条

标题: Advances in Path-Planning Algorithms for Agricultural Robots

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来源出版物: JOURNAL OF FIELD ROBOTICS **DOI:** 10.1002/rob.70023 **Early Access Date:** JUL 2025 **Published Date:** 2025 JUL 31

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摘要: With the rapid advancement of intelligent technologies, the application of robots in agriculture has expanded significantly. Path planning, a critical technology for the autonomous navigation of agricultural robots, has emerged as a key research direction. This paper classifies path-planning algorithms into four categories: traditional classical algorithms, modern intelligent bionic algorithms, sampling-based planning algorithms, and machine learning algorithms. It systematically examines the concepts and characteristics of each algorithm type, evaluates their suitability across various agricultural environments, compares their convergence speeds and computational efficiencies, and discusses potential improvement strategies. The analysis reveals that traditional classical algorithms offer high precision and stability in structured farmland environments but lack dynamic adaptability. Modern intelligent bionic algorithms enhance path robustness in complex terrains through group collaboration and global optimization mechanisms, yet they face challenges with slow convergence and parameter sensitivity; sampling-based planning algorithms excel in obstacle avoidance within unstructured, dynamic scenarios, but the quality of the generated paths depends heavily on the sampling strategy; machine learning algorithms enable environment-adaptive decision-making through data-driven approaches, though they require substantial labeled data and significant computing resources. Further comparisons suggest that path-planning algorithms' future development trend will involve integrating multiple algorithms' strengths and leveraging advanced technologies such as artificial intelligence, cloud computing, and

edge computing to improve adaptability, real-time performance, and intelligent decision-making capabilities in complex agricultural environments. This paper provides theoretical support and practical guidance for research on path planning for agricultural robots and offers new insights for accelerating the development of modern agriculture.

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文献类型: Review; Early Access

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研究方向: Robotics

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<div align="center">

Science & Technology - Other Topics

</div>

第 1 条

标题: Energy retrofits of Venlo-type greenhouses in the severe cold region using active and passive energy-saving technologies

作者: Li, B (Li, Bo); Shi, YN (Shi, Yannan); Jiang, W (Jiang, Wei); Zhang, K (Zhang, Kuan); Liu, GL (Liu, Gongliang); Yang, RT (Yang, Ruitong); Guo, W (Guo, Wei); Wang, FC (Wang, Fucheng); Li, D (Li, Dong)

来源出版物: ENERGY FOR SUSTAINABLE DEVELOPMENT **卷:** 88 **文献号:** 101791 **DOI:** 10.1016/j.esd.2025.101791 **Published Date:** 2025 OCT

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摘要: This research focuses on Venlo-type greenhouses (VG) in severe cold regions, where active and passive energy-saving technologies are employed to decrease energy consumption. By adding photovoltaic (PV) panels on its southern roof, we transformed into a rooftop photovoltaic Venlo-type greenhouse (PVG), and 49 cases were formed by changing the number of glass layers, filling different types of gases, and adjusting the thickness of the gas layer. The energy consumption of the retrofit cases was finely simulated by EnergyPlus software, and calculated carbon emission reduction (CER), retrofit cost (RC), and payback period (PP). A research employing an entropy weight method was conducted to assess the energy-saving rate (ESR), CER, RC, and PP across different retrofit scenarios. Through comprehensive evaluation, we selected the optimal case. The results demonstrated that the optimal energy-saving retrofit case with the highest comprehensive score is a triple-layer glass PVG (Tc9) with an ESR of 59.91 %, CER of 32,748.45 kg, and a recovery

period of 3.12 years, using a 9 mm Krypton gas interlayer. The research's findings provide a dependable and unbiased theoretical foundation for energy saving retrofit of VG, which can promote the development of the VG and PVG.

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文献类型: Article

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研究方向: Science & Technology - Other Topics; Energy & Fuels

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第 2 条

标题: Multi-Channel Graph Convolutional Network for Evaluating Innovation Capability Toward Sustainable Seed Enterprises

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Web of Science 核心合集中的 **"被引频次":** 0

被引频次合计: 0

摘要: The innovation capability of seed enterprises reflects their core competitiveness and serves as a vital foundation for sustainable agricultural development and modernization. Therefore, evaluating this capability is of great importance. However, existing evaluation methods primarily focus on internal enterprise attributes, overlooking the complex inter-enterprise relationships and lacking sufficient feature fusion capabilities to capture latent information. To address these limitations, this paper proposes a Multi-Channel Graph Convolutional Network (MGCN) model that integrates enterprise attributes with three types of relational graphs. The model adopts a multi-channel architecture for feature extraction and employs a gated attention mechanism for cross-graph feature fusion, jointly considering node features and relation information to improve prediction accuracy. Experimental results

demonstrate that MGCN achieves an average accuracy of 83.59% under five-fold cross-validation, outperforming several mainstream models such as Random Forest and traditional GCN. Case studies further reveal that MGCN not only captures key features of individual enterprises but also leverages features and label distribution from neighboring enterprises, facilitating more context-aware classification decisions. In conclusion, the MGCN model provides an effective method for the intelligent evaluation of innovation capability in seed enterprises and supports the formulation of sustainable strategic plans at both the national and enterprise level.

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输出日期: 2025-10-01

第 3 条

标题: Study on the driving mechanisms of spatiotemporal nonstationarity of vegetation dynamics in Heilongjiang Province

作者: Chen, WD (Chen, Weidong); Shi, L (Shi, Lei)

来源出版物: SCIENTIFIC REPORTS 卷: 15 期: 1 文献号: 28844 **DOI:** 10.1038/s41598-025-14182-x **Published Date:** 2025 AUG 7

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摘要: Heilongjiang Province, a key ecological barrier in Northeast China, is crucial for regional ecosystem stability. Previous vegetation index research in this region primarily focused on annual or growing-season scales, without comprehensive comparisons of seasonal and interannual variations. This study addresses this gap by analyzing spatiotemporal vegetation dynamics and their driving forces in Heilongjiang

Province using MODIS data (2000-2021). The findings reveal: (1) Analysis of MODIS-derived Fractional Vegetation Cover (FVC) from 2000 to 2021 revealed decreasing trends in spring, autumn, and winter, alongside an increasing summer trend. Spatially, FVC was higher in the northwest, central, and southeast regions, indicating significant heterogeneity. (2) Theil-Sen trend and Hurst exponent analyses indicated a declining annual FVC trend in 61.8% of the area, with 54.7% projected for continued future decline. A centroid shift model showed an overall westward FVC movement, except in spring. Coefficient of variation analysis demonstrated highest FVC stability in summer and lowest in winter. The global Moran's I index indicates that FVC exhibits a highly spatially concentrated distribution. Local Moran's I analysis primarily reveals two clustering patterns: "high-high" and "low-low" aggregations.(3) Random Forest SHAP analysis identified altitude, land cover type, evapotranspiration (ET), and slope as primary factors influencing FVC. Furthermore. The geographical detector analysis demonstrates that the interactions among factors strengthen their overall impact on FVC.

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第 4 条

标题: Research on high-quality development path of strategic emerging enterprises enabled by innovation

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摘要: Promoting the high-quality development of strategic emerging enterprises is an inevitable approach to building a strong nation, and innovation serves as the critical engine providing core momentum for such development. From the perspective of complex causal effect analysis, this article selects 176 A-share listed companies in strategic emerging industries from 2012 to 2023 as samples and employs a combination of methods including NCA, multi-period fsQCA, and empirical regression

analysis to distill practical pathways for innovation-driven high-quality development in these enterprises. The research findings are summarized as follows: (1) There is no single necessary condition for achieving high-quality development in strategic emerging enterprises; rather, it is the result of the synergistic interaction among technological innovation, talent innovation, and policy innovation. (2) Technological innovation has consistently played a pivotal role across all periods, with R&D investment identified as a key factor driving high-quality development. Other contributing factors also exhibit heterogeneous effects within the configurations of each period. (3) Four distinct configuration paths for high-quality development emerge across the three periods: the technology-dominant type, the "technology and talent" dual-driven type, the "technology and policy" dual-driven type, and the comprehensive innovation type. This study leverages complex causal effect analysis to offer scientific insights to relevant policymakers and enterprise managers, thereby facilitating the high-quality development of strategic emerging enterprises.

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Thermodynamics

第 1 条

标题: Numerical investigation of secondary flow-induced heat transfer enhancement mechanisms and near-wall flow structures in helical groove tubes

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来源出版物: APPLIED THERMAL ENGINEERING 卷: 279 文献号: 128002 DOI: 10.1016/j.applthermaleng.2025.128002 Published Date: 2025 NOV 15 子辑: F

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摘要: To thoroughly investigate the effectiveness of secondary flow in enhancing heat transfer and to fill the gap in quantitative relationships between the secondary flow

intensity (Se) and parameters such as helical groove tube geometry and energy-efficiency indicators, this study examines helical groove tubes in a novel vapor-phase rotating shell-and-tube heat exchanger using computational fluid dynamics (CFD) simulations. The absolute vortex magnitude ($|omega(z)|$), mean absolute vortex flux ($J(z)$) and Se are systematically correlated, and the relationships between Se and both heat-transfer performance and pressure-drop characteristics are elucidated to reveal the physical mechanisms by which secondary flow intensifies heat transfer. A data-driven analysis further probes the nonlinear coupling among Se, geometric parameters of the helical groove tube (inner diameter $d(in)$, groove depth e, and pitch p), Reynolds number (Re), and Prandtl number (Pr), leading to the development of an empirical model centered on Se. Results demonstrate that Se effectively characterizes secondary flow within the helical groove tube and captures the vortex-main-flow thermal coupling mechanism. The helical rib structure induces vortices that generate secondary flow, disrupting pure thermal diffusion and making convective heat transfer the dominant mechanism of thermal exchange. Strong correlations are found between Re and Se (the correlation coefficient of 0.8528) and between Pr and Se (the correlation coefficient of 0.8337), while geometric parameters $d(in)$, e, and p exert highly significant influences on Se ($p < 0.0001$). The empirical Se model yields fitting parameters a = 0.0835, m=1.5555, and n = 0.7757, with a normalized coefficient of determination (R^{-2}) of 0.9811, a root-mean-square error (RMSE) of 0.0600, and a mean absolute error (MAE) of 0.0700. These findings provide a theoretical basis and quantitative data to support the optimization of heat-exchanger tube geometry based on Se for improved heat-transfer performance in applied thermal-engineering applications.

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研究方向: Thermodynamics; Energy & Fuels; Engineering; Mechanics

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Veterinary Sciences

第 1 条

标题: Oral supplementation with <i>Lactobacillus fermentum</i> MC018 improves intestinal health, immune response, and growth performance of Zi geese infected with

<i>Escherichia coli</i> XH197291

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Web of Science 核心合集中的 **"被引频次":** 0

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摘要: **Introduction:** Escherichia coli infection causes severe diarrhea, decreases growth performance, and increases mortality of poultry, which imposes a significant economic burden on the poultry industry and severely limits its growth. **Methods:** Here, to investigate the effects of Lactobacillus on the intestinal health, immune response, and growth performance of E. coli-infected goslings, we established a geese model infected with an Stx2f gene-carrying E. coli strain and analyzed the probiotic characteristics of three Lactobacillus isolates obtained from the cecum of healthy geese. In an in vivo study, Zi geese were administered daily gavage of L. johnsonii MC006, L. salivarius MC013, or L. fermentum MC018 (10^9 CFU/mL) from 1 d of age for 21 d, followed by treatment with E. coli XH197291 gavage (10^9 CFU/mL) on day 8. **Results:** The results showed that E. coli XH197291-infected geese exhibited depression, intestinal damage, reduced average daily gain, increased feed conversion ratio, and 100% diarrhea incidence within 48 h post-infection. Remarkably, among the three Lactobacillus isolates, L. fermentum MC018 showed the potential to function as a probiotic because of its ability to resist acid and bile degradation, antibacterial effect, and adhesion property. Notably, oral supplementation containing L. fermentum MC018 alleviated diarrhea and intestinal histological lesions, reduced E. coli counts in both ileum and rectum, increased the population of lactic acid bacteria, and improved the growth performance of E. coli-infected geese. Geese treated with L. fermentum MC018 gavage had higher serum diamine oxidase ($p < 0.01$) and IgM ($p < 0.05$) levels than those in the model group. L. fermentum MC018 reduced the levels of IL-1 beta, IL-6, and TNF-alpha in intestinal tissues following E. coli infection. Compared to L. salivarius MC013, L. fermentum MC018 increased the levels of ZO-1 in the duodenum and Claudin-1 in the ileum. **Discussion:** These findings suggest that L. fermentum MC018 is a promising probiotic strain for use as a potential alternative to antibiotics for controlling avian colibacillosis.

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研究方向: Veterinary Sciences

输出日期: 2025-10-01

第 2 条

标题: Metabolomic evidence of bovine leukemia virus regulation on ferroptosis in bovine mammary epithelial cells

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Web of Science 核心合集中的 **"被引频次":** 0

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摘要: Bovine leukemia virus (BLV) is a globally prevalent pathogen that can cause enzootic bovine leukosis (EBL), which reduces dairy cows' immunity, interferes with mammary antimicrobial defense capabilities, and exacerbates clinical mastitis. However, the specific mechanisms by which these effects occur remain incompletely understood. Ferroptosis, an iron-dependent non-apoptotic cell death mechanism, exhibits dual roles in viral infections. In this study, wild-type BLV and a miRNA-deficient mutant strain (BLV-Delta miRNA) were used to infect bovine mammary epithelial cells in vitro, combined with non-targeted metabolomics to investigate BLV-regulated ferroptosis evidence. The results shown that BLV significantly elevated levels of unsaturated fatty acid, interferes with vitamin B6 metabolism. Suggest that BLV promote ferroptosis in mammary epithelial cells through unsaturated fatty acid biosynthesis and vitamin B6 metabolism pathways, potentially involving BLV-encoded miRNAs. This research provides a theoretical foundation for identifying novel BLV pathogenic targets and prevention strategies.

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文献类型: Article

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研究方向: Veterinary Sciences

输出日期: 2025-10-01

第 3 条

标题: Liproxstatin-1 improves boar sperm quality during <i>in vitro</i> liquid preservation at 17°C, associated with reduction of oxidative stress and ferroptosis markers

作者: Li, Y (Li, Yang); Liu, X (Liu, Xue); Cheng, Y (Cheng, Ye); Li, JC (Li, Jingchun); Zhou, YL (Zhou, Yuling); Guo, Q (Guo, Qing)

来源出版物: FRONTIERS IN VETERINARY SCIENCE 卷: 12 文献号: 1611661 **DOI:** 10.3389/fvets.2025.1611661 **Published Date:** 2025 JUL 31

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摘要: Objective The plasma membrane of boar sperm is notably enriched in polyunsaturated fatty acids (PUFAs). During extended liquid storage of boar semen at 17 degrees C, reactive oxygen species (ROS) derived from lipid peroxidation progressively accumulate within sperm cells. Concurrently, the onset of ferroptosis is initiated by the disruption of intracellular redox homeostasis, characterized by an imbalance between the production and elimination of lipid-derived ROS. This study aims to investigate whether the ferroptosis inhibitor Liproxstatin-1 (Lip-1) protects boar sperm quality during 17 degrees C liquid preservation by ameliorating oxidative stress and regulating ferroptosis markers.Method Various concentrations of Lip-1 were added to the modified Modena extender, and sperm motility and kinetic parameters were assessed using the CASA system, which facilitated the identification of the optimal Lip-1 concentration. Subsequently, the integrity of the acrosome, plasma membrane, and mitochondrial membrane potential (MMP) of sperm was examined in both the control group and the optimal of Lip-1 group. Additionally, the antioxidant capacity and lipid peroxidation levels of the sperm were evaluated. Furthermore, the ferroptosis inducer Erastin (Era) was utilized to investigate whether Lip-1 could regulate oxidative stress and ferroptosis markers to enhance the liquid preservation efficiency of boar semen at 17 degrees C.Result Various concentrations of Lip-1 were added to the modified Modena extender, and the results indicated that,

compared to the control group, 0.2 mu M of Lip-1 significantly enhanced sperm motility and kinetic parameters. Additionally, a concentration of 0.2 mu M Lip-1 significantly enhanced sperm quality, which included improvements in the integrity of the sperm plasma membrane and acrosome, antioxidant capacity, and MMP. Additional, additional tests revealed that Lip-1 can significantly reduce markers of sperm lipid peroxidation during the room temperature preservation of boar semen, including C11-bodipy, MDA, LPO, and improved ferroptosis-related protein GPX4. Furthermore, the ferroptosis inducer Era was utilized, and the results demonstrated that 0.2 mu M Lip-1 significantly alleviated the sperm damage induced by Era.Conclusion The results of this study indicated that Lip-1 significantly enhanced the liquid preservation efficiency of boar semen at 17 degrees C associated with ameliorating oxidative stress and regulating ferroptosis markers, providing both theoretical and practical references for improving the liquid preservation of boar semen.

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研究方向: Veterinary Sciences

输出日期: 2025-10-01

第 4 条

标题: Dietary supplementation with soluble corn fiber improved fecal score, microbiota, and SCFAs in dogs

作者: Liang, DH (Liang, Donghui); Zhao, S (Zhao, Shuai); Yin, GN (Yin, Guoan)

来源出版物: FRONTIERS IN VETERINARY SCIENCE 卷: 12 文献号: 1599213 **DOI:** 10.3389/fvets.2025.1599213 **Published Date:** 2025 MAY 20

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摘要: Introduction: Soluble corn fiber, a safe dietary fiber with prebiotic properties, has been put to several applications in human daily life. However, studies on its use in pet food are scarce. This study was conducted to investigate the effects of SCF on microbial diversity, SCFAs and fecal quality in canines. Methods: Twenty adult dogs were divided into four groups, including the control group (CON) and three groups fed diet supplemented with 0.1% (SCF1), 0.5% (SCF2), or 1% (SCF3) SCF for 21 days. Results: Fecal scores of the group fed 1% SCF were the closest to the ideal state.

alpha-diversity analysis showed the Chao1 index in the SCF2 and SCF3 groups was significantly higher ($p < 0.05$) than in the CON group, indicating an increase in colony abundance. beta-diversity analysis showed no significant structural difference among groups ($p > 0.05$). Microbial diversity analysis showed the addition of SCF to the diets increased the relative abundance of Bacteroidota and Blautia and decreased the relative abundance of Firmicutes, [Ruminococcus]_gnavus_group, and Prevotellaceae_Ga6A1_group; 1% SCF the relative abundance of Prevotella and Blautia ($p < 0.05$), and the content of acetic acid, valeric acid, and isobutyric acid ($p < 0.05$) and significantly decreased the content of butyric acid ($p < 0.05$). Conclusion: Dietary supplementation with SCF improves the fecal condition, modulates microbiota composition, enhances the levels of acetic acid, valeric acid, and isobutyric acid, and decreases the level of butyric acid in dogs, with optimal effects observed for 1% supplementation.

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Affiliations: Heilongjiang Bayi Agricultural University

3 EI 收录情况

（2025.08.07-2025.10.01）

3.1 EI Compendex

EI 索引库共收录我校教师发表的 114 篇文献，文献详细题录信息如下。

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1. Advances in Path-Planning Algorithms for Agricultural Robots

Gao, Yanpeng (School of Engineering, Heilongjiang Bayi Agricultural University, Daqing, China); Jiang, Qingyu; Wang, Ming;

Dong, Xiaowei

Source: Journal of Field Robotics, 2025 Article in Press

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

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2. Non-destructive origin identification of millet based on the combination of NIRS and improved WOA based feature wavelength selection

Gao, Peng (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319,

China); Wang, Na; Lu, Yang; Liu, Jinming; Hou, Rui; Du, Xinyue; Hao, Yingying

Source: Analytical Methods, v 17, n 33, p6672-6683, August 21, 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

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3. Response of soil organic carbon to maize stovers returning to in farmland diverse main maize producing areas based on meta-analysis (基于 Meta 分析的不同玉米主产区土壤有机碳含量对秸秆还田的响应)

Ji, Yanke (Key Laboratory of Comprehensive Utilization of Crop Straw and Black Soil Protection of Ministry of Education,College of Resource and Environmental, Jilin Agricultural University, Changchun; 130118, China); Yan, Li; Zhu, Jianfei; Liu, Ming

Source: Nongye Gongcheng Xuebao/Transactions of the Chinese Society of Agricultural Engineering, v 41, n 12, p 95-106, June 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

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4. DEM-CFD coupling simulation and optimization of an air-pressure high-speed precision seed metering device for maize delta-row dense plantings

Sun, Wensheng (College of Engineering, Heilongjiang Bayi Agricultural University, Daqing;

163319, China); Yi, Shujuan; Qi, Hailong; Li, Yifei; Dai, Zhibo; Zhang, Yupeng; Yuan, Jiasha; Wang, Song

Source: Powder Technology, v 466, December 2025

Database: Compendex

Data Provider: Engineering Village

5. Early Detection of Northern Corn Leaf Blight Using Hyperspectral Images Combined With One Dimensional Convolutional Neural Networks (高光谱图像结合一维卷积神经网络的玉米大斑病早期识别)

Lu, Yang (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China);Gu, Fu-Qian; Gu, Ying-Nan; Xu, Si-Yuan; Wang, Peng

Source: Guang Pu Xue Yu Guang Pu Fen Xi/Spectroscopy and Spectral Analysis, v 45, n 8, p 2302-2310, August 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

6. A method of rice yield prediction based on the QRBILSTM-MHSA network and hyperspectral image

Lu, Yang (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China);Li, Peilin; Wang, Peng; Li, Tongyao; Li, Gongfa

Source: Computers and Electronics in Agriculture, v 239, December 2025

Database: Compendex

Data Provider: Engineering Village

7. The impact of information technology on the progress of ideological and political education

Ma, Sanxi (School of Marxism, Heilongjiang Bayi Agricultural University, Daqing, China)

Source: Journal of Computational Methods in Sciences and Engineering, 2025 Article in Press

Database: Compendex

Data Provider: Engineering Village

8. Ultrasonic-assisted extraction, analysis and biological activities of polysaccharide from white quinoa

Zang, Yanqing (College of Food Science, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing, China); Chuang, Yingying; Wang, Changyuan; Cao, Yang

Source: Journal of Food Science and Technology, 2025 Article in Press

Database: Compendex

Data Provider: Engineering Village

9. α-Glucan rich polysaccharide fraction obtained from rhizomes of Kaempferia parviflora (black ginger) exhibits immunostimulatory activity in RAW264.7 cells

Li, ChangSheng (College of Food Science, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing; 163319, China);Kou, Fang; Uthamapriya, Rajavel Arumugam; Rajasekar, Periyannan; Hwang, Jeong Seon; Prabhu, Narayanasamy Marimuthu; Lee, Dong-Jin; Palanisamy, Subramanian; You, SangGuan; Kim, Jin-Chul

Source: International Journal of Biological Macromolecules, v 319, August 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

10. Determination of 16 phthalate esters by gas chromatography-barrier discharge ionization detector

Jia, Pengyu (National Coarse Cereals Engineering Research Center, Daqing; 163319, China); Chen, Shuang; Sun, Rui; Li, Liangyu; Zhang, Liyuan; Yan, Yan

Source: Chinese Journal of Analysis Laboratory, v 44, n 7, p 1083-1089, 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

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11. Research Progress of the Biosynthesis, Abiotic Stress Regulation and Physiological Functions in Plant Polyphenols (植物多酚的生物合成、非生物胁迫调控与生理功能研究进展)

Tai, Zhenjia (College of Food, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Wang, Xinhui; Song, Xuejian; Li, Zhiming; Zhang, Dongjie; Li, Zhijiang

Source: Science and Technology of Food Industry, v 46, n 15, p 425-434, August 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

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12. Microwave treatment modulates in vitro dynamic gastrointestinal migration of sorghum polyphenols and influences gut microbiota metabolism

Xu, Lei (College of Food Science, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing; 163319, China); Dai, Lingyan; Yao, Di; Hu, Yuyuan; Zhao, Wenhong; Song, Xuejian; Li, Zhijiang

Source: Food Research International, v 221, December 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

13. Dynamic regulation of mung bean globulin amyloid fibrillation by Gallic acid: Structural and functional insights

Jiang, Peng (College of Food Science, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing; 163319, China); Xu, Qingpeng; Zhang, Shu; Fu, Tianxin; Diao, Jingjing; Li, Zhijiang; Wang, Changyuan

Source: Food Research International, v 221,December 2025

Database: Compendex

Data Provider: Engineering Village

14. Characterization of the YCjN ABC Transporter in Escherichia coli: Role in Maltose and Ethidium Bromide Transport

Wang, Yanhong (College of Life Science and Biotechnology, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Xu, Beibei; Abdelazez, Amro; Abdel-motaal, Heba; Liu, Qingpeng; Han, Lu; Yang, Ming; Wang, Wenzhao; Abd El-Aziz, Mohamed A.; Alshehry, Garsa; Algarni, Eman; Aljumayi, Huda

Source: Molecular Biotechnology, 2025 Article in Press

Database: Compendex

Data Provider: Engineering Village

15. Structural properties and functional analysis of soluble dietary fiber polysaccharides from rice husk:Effects on oxidative stress management and apoptosis in human colorectal adenocarcinoma cells

Quan, Zhigang (College of Food Science, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Chen, Mingming; Zhang, Dongjie

Source: Food Research International, v 221, December 2025

Database: Compendex

Data Provider: Engineering Village

16. Preparation of mung bean antioxidant peptides and the mechanism by which they improve intestinal inflammation in Drosophila

Wang, Xiao Chun (College of Food Science, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Jiang, Yingjun; Wang, Changyuan

Source: Food Research International, v 221, December 2025

Database: Compendex

Data Provider: Engineering Village

17. Maximizing computation rate for NOMA-based WPT-MEC with user cooperation under nonlinear EH model

Duan, Yunge (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Liu, Zhenbo; Fu, Shuang

Source: Computer Networks, v 271, October 2025

18. Preparation and characterization on a dual-layer slow-release urea fertilizer coated using ethylcellulose and phosphoric acid-carbamate di-esterified starch-based chitosan hydrogel

Gu, Shijia (College of Chemistry and Chemical Engineering, Qiqihar University, Qiqihar; 161006, China); Zhang, Wenzhi; Tan, Xiaoxiao; Wang, Peng; Shi, Zhichun; Lv, Jun; Zhao, Ming; Dong, Guohua

19. Effect of Toughening-Enzyme Modification on the Structure and Properties of Sorghum Starch (韧化-酶改性对高粱淀粉结构与性质的影响)

Ma, Hongda (College of Food Science, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Yao, Jiaxin; Liu, Shijie; Wang, Yashi; Li, Zhijiang; Zhang, Hongwei

20. Effects of ventilation pipe deflectors on cattle manure composting efficiency and microbial community dynamics (风管加设导流板对牛粪堆肥效果和微生物群落的影响)

Shi, Bo (College of Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Cheng, Qiongyi; Shen, Yujun; Zhang, Dongli; Ding, Jingtao; Zhou, Haibin; Cheng, Hongsheng; Wang, Yue

21. Virtual network embedding on multi-cloud infrastructure using hierarchical reinforcement learning and heuristic approaches

Parajuli, Anukul (Department of Computer Science and Engineering, Indian Institute of Technology Madras, Chennai, India); Sivalingam, Krishna M.

22. Performance analysis of a UAV-integrated RIS-aided MRR-FSO system utilizing wavelength and time diversity techniques

AbdElKader, Amr G. (Faculty of Engineering, Alexandria University, Alexandria; 21544, Egypt); Allam, Ahmed; Kato, Kazutoshi; Shalaby, Hossam M. H.

Source: Photonic Network Communications, v 50, n 1, August 2025

Database: Compendex

Data Provider: Engineering Village

23. Design and modeling of half-subtractor using plasmonic waveguides for high-computational applications

Swarnakar, Sandip (Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Andhra Pradesh, Guntur; 522302, India); Preethi, Chagalamarri Guru; Nandini, Boggarapu Geetha; Keerthana, Nallabolu Lakshmi; Suchitra, Kallamadi; Muduli, Arjuna; Sreevani, Alluru; Kumar, Santosh

Source: Photonic Network Communications, v 49, n 3, June 2025

Database: Compendex

Data Provider: Engineering Village

24. Effects of receiver diversity on bit error rate of underwater optical wireless communication systems in weak oceanic turbulence

Gökçe, Muhsin Caner (Department of Electrical and Electronics Engineering, TED University, Ziya Gökalp Cad. No: 47-48, Kolej Çankaya, Ankara; 06420, Turkey); Baykal, Yahya; Ata, Yalçın

Source: Photonic Network Communications, v 50, n 2, October 2025

Database: Compendex

Data Provider: Engineering Village

25. An optimized up to 16-user and 160 Gbps dual cascaded optical modulators PON-based power combined array fiber Bragg grating and pre-distortion device for 5th G system

Jalal, Sirwan Kareem (Department of Computer Technical Engineering, Al-Qalam University College, Kirkuk, Iraq); Yousif, Raghad Zuhair; Al-Mukhtar, Firas H.; Kareem, Shahab Wahhab

Source: Photonic Network Communications, v 49, n 1, February 2025

Database: Compendex

Data Provider: Engineering Village

26. Pointing error influence on the performance of dual-hop radio frequency/wireless optical communication system over Nakagami-m/Fisher-Sn

edecor turbulence channels

Rani, Rekha (Department of ECE, Delhi Technological University, Delhi, New Delhi, India); Lakshmanan, M.; Mandpura, AnupKumar; Jayanthi, N.

Source: Photonic Network Communications, v 49, n 2, April 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

27. Photonic approach to multi-band dual-chirp microwave waveform generation with improved time bandwidth product

Zhao, Hongshi (School of Computer Information Management, Inner Mongolia University of Finance and Economics, Hohhot;010070, China); Yang, Jialing; Zhang, Zengping

Source: Photonic Network Communications, v 49, n 3, June 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

28. Dual hop Malaga underwater wireless optical communication system with pointing errors for IoUT

Chauhan, Dushyant Singh (Department of ECE, Delhi Technological University, Delhi; 102045, India); Kaur, Gurjit; Kumar, Dinesh

Source: Photonic Network Communications, v 49, n 1, February 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

29. Navigating transient content: PFC caching approach for NDN-based IoT networks

Kumar, Sumit (Department of Computer Science and Engineering, Thapar Institute of Engineering and Technology, Patiala; 147004, India); Tiwari, Rajeev

Source: Pervasive and Mobile Computing, v 109, April 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

30. Three-dimensional spectrum coverage gap map construction in cellular networks: A non-linear estimation approach   (*Open Access*)

Mostafa, Ahmed Fahim (The American University in Cairo, New Cairo; 11835, Egypt); Abdel-Kader, Mohamed; Gadallah, Yasser

Source: Pervasive and Mobile Computing, v 106, January 2025

Open Access type(s): All Open Access, Hybrid Gold

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc

31. Edge AIoT-based agricultural recommendation platform to improve humus productivity in vermicomposting processes

V., Juan M. Núñez (BISITE Research Group, University of Salamanca, Edificio Multiusos I+D+I Salamanca, Salamanca; 37007, Spain); Flórez, Sebastián López; Corchado, Juan M.; De la Prieta, Fernando

Source: Pervasive and Mobile Computing, v 112, August 2025

Database: Compendex

Data Provider: Engineering Village

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32. Lightweight secure key establishment to create a secure channel between entities in a crowdsourcing environment

Nikooghadam, Mahdi (Department of Computer Engineering, Amirkabir University of Technology, Tehran, Iran); Shahriari, Hamid Reza

Source: Pervasive and Mobile Computing, v 112, August 2025

Database: Compendex

Data Provider: Engineering Village

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33. Blockchain-Inspired Trust Management in Cognitive Radio Networks with Cooperative Spectrum Sensing

Mahvash, Mahsa (Department of Computer Engineering, University of Isfahan, Isfahan, Iran); Moghim, Neda; Mahdavi, Mojtaba; Amiri, Mahdieh; Shetty, Sachin

Source: Pervasive and Mobile Computing, v 106, January 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

34. Enhanced hybrid prototype for few-shot class-incremental gait recognition in multi-activity scenarios using wearable sensors

Lin, Chao (College of Computer Science and Cyber Security, Chengdu University of Technology, Chengdu; 610059, China); Mei, Zhanyong; Mao, Linlong; Mei, Zijie

Source: Pervasive and Mobile Computing, v 112, August 2025

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2025 Elsevier Inc.

35. Efficiently linking LoRaWAN identifiers through multi-domain fingerprinting

Pélissier, Samuel (University of Lyon, INSA-Lyon, Inria, CITI Lab, Lyon, France); Mishra, Abhishek Kumar; Cunche, Mathieu; Roca, Vincent; Donsez, Didier

Source: Pervasive and Mobile Computing, v 112, August 2025

Database: Compendex

Data Provider: Engineering Village

36. LiteFlex-YOLO:A lightweight small target detection network for maritime unmanned aerial vehicles

Tang, Peng (School of Electronic and Information Engineering, University of Science and Technology Liaoning, Liaoning, Anshan; 114051, China); Zhang, Yong

Source: Pervasive and Mobile Computing, v 111, June 2025

Database: Compendex

Data Provider: Engineering Village

37. A black-box assessment of authentication and reliability in consumer IoT devices

Lazzaro, Sara (Università Mediterranea, Via dell'Università 25, Reggio Calabria; 89122, Italy); De Angelis, Vincenzo; Mandalari, Anna Maria; Buccafurri, Francesco

Source: Pervasive and Mobile Computing, v 110, May 2025

Database: Compendex

Data Provider: Engineering Village

38. Continual learning in sensor-based human activity recognition with dynamic mixture of experts

Rahman, Fahrurrozi (School of Computer Science, University of St Andrews, United Kingdom); Schiemer, Martin; Sanabria, Andrea Rosales; Ye, Juan

Source: Pervasive and Mobile Computing, v 110, May 2025

Database: Compendex

Data Provider: Engineering Village

39. Trajectory prediction-based migration target selection method for vehicular network services

Peng, Chuan Ying (Xi'an University of Posts and Telecommunications, China); Yang, Wu Jun; Chang, Zhi Xian; Lv, Jin Ming; Guo, Juan

Source: Pervasive and Mobile Computing, v 110, May 2025

Database: Compendex

Data Provider: Engineering Village

40. EncCluster: Scalable functional encryption in federated learning through weight clustering and probabilistic filters   (*Open Access*)

Tsouvalas, Vasileios (Eindhoven University of Technology, De Zaale, Eindhoven; MB; 5600, Netherlands); Mohammadi, Samaneh; Balador, Ali; Ozcelebi, Tanir; Flammini, Francesco; Meratnia, Nirvana

Source: Pervasive and Mobile Computing, v108, March 2025

Open Access type(s): All Open Access, Hybrid Gold, Green

41. Hybrid elk herd green anaconda-based multipath routing and deep learning-based intrusion detection In MANET

Anugraha, Dr M. (Department of Computer Science and Engineering, Stella Mary's College of Engineering, Tamilnadu, Nagercoil; 629201, India); Ebenezer, Dr S. Selvin; Maheswari, Dr S.

Source: Pervasive and Mobile Computing, v 112, August 2025

42. Would you mind hiding my malware? Building malicious Android apps with StegoPack

Dell'Orco, Danilo (CNIT - National Inter-University Consortium for Telecommunications, Via del Politecnico, 1, Lazio, Rome; 0133, Italy); Bernardinetti, Giorgio; Bianchi, Giuseppe; Merlo, Alessio; Pellegrini, Alessandro

Source: Pervasive and Mobile Computing, v 111, June 2025

43. Octopus: Knapsack model-driven federated learning client selection in internet of vehicles

Xing, Ling (School of Information Engineering, Henan University of Science and Technology, Luoyang; 471023, China); Cui, Jingjing; Gao, Jianping; Deng, Kaikai; Wu, Honghai; Ma, Huahong

Source: Pervasive and Mobile Computing, v 111, June 2025

44. Unveiling user dynamics in the evolving social debate on climate crisis during the conferences of the parties

Martirano, Liliana (ICAR-CNR, Rende; 87036, Italy); La Cava, Lucio; Tagarelli, Andrea

Source: Pervasive and Mobile Computing,v 112, August 2025

45. A-BEE-C: Autonomous Bandwidth-Efficient Edge Codecast

Lim, Gyujeong (Department of Computer Science and Engineering, Korea University, Seoul, Korea, Republic of); Gil, Joon-Min; Yu, Heonchang

Source: Pervasive and Mobile Computing, v 112, August 2025

46. Investment-driven budget allocation and dynamic pricing strategies in edge cache network

Wang, Quyuan (Chongqing Key Laboratory of Intelligent Perception and Blockchain Technology, Chongqing Technology and Business University, Chongqing; 400067, China); Chen, Pengyang; Liu, Jiadi; Wang, Ying; Guo, Zhiwei

47. A novel middleware for adaptive and efficient split computing for real-time object detection   (*Open Access*)

Mendula, Matteo (Department of Computer Science and Engineering, University of Bologna, Italy); Bellavista, Paolo; Levorato, Marco; Contreras, Sharon Ladron de Guevara

Open Access type(s): All Open Access, Hybrid Gold

48. Minimizing communication-computing energy consumption for UAV assisted collaborative computing offloading

Li, Zhiqi (North China University of Technology, No. 5 Jinyuanzhuang Road, Shijingshan District, BeiJing; 100144, China); Wei, Qing; Bai, Wenle

49. Collective victim counting in post-disaster response: A distributed, power-efficient algorithm via BLE spontaneous networks   (*Open Access*)

Longo, Giacomo (DIBRIS, University of Genoa, Genoa, Italy); Cantelli-Forti, Alessandro; Russo, Enrico; Lupia, Francesco; Strohmeier, Martin; Pugliese, Andrea

Open Access type(s): All Open Access, Hybrid Gold

50. Climate smart computing: A perspective

Yang, Mingzhou (University of Minnesota, Twin Cities, Minneapolis; MN, United States);

Jayaprakash, Bharat; Ghosh, Subhankar; Jung, Hyeonjung Tari; Eagon, Matthew; Northrop, William F.; Shekhar, Shashi

Source: Pervasive and Mobile Computing, v 108, March 2025

Database: Compendex

Data Provider: Engineering Village

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51. HearDrinking: Drunkenness detection and BACs predictions based on acoustic signal

Wu, Yuan (School of Computer Science and Artificial Intelligence, Wuhan Textile University, Hubei, Wuhan; 430200, China); Zhao, Gaorong; Zhang, Likairui; Hu, Xinrong; Ding, Lei

Source: Pervasive and Mobile Computing, v 108, March 2025

Database: Compendex

Data Provider: Engineering Village

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52. Advancing user-space networking for DDS message-oriented middle ware: Further extensions

Bode, Vincent (Technical University of Munich, Boltzmannstrasse 3, Munich; 85748, Germany); Trinitis, Carsten; Schulz, Martin; Buettner, David; Preclik, Tobias

Source: Pervasive and Mobile Computing, v 107, February 2025

Database: Compendex

Data Provider: Engineering Village

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53. Load-balancing model using game theory in edge-based IoT network

Naaz, Zaineb (Department of Computer Science and Engineering, School of ICT, Gautam Buddha University, Greater Noida, India); Joshi, Gamini; Sharma, Vidushi

Source: Pervasive and Mobile Computing, v 109, April 2025

Database: Compendex

Data Provider: Engineering Village

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54. Designing from experience: on the adoption of chatbot conversational design practices by practitioners

Silva, Geovana Ramos Sousa (Department of Computer Science, University of Brasilia (UnB), DF, Brasília, Brazil); Canedo, Edna Dias

Source: Personal and Ubiquitous Computing, v 29, n 2, p 153-168, April 2025

Database: Compendex

Data Provider: Engineering Village

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55. Retraction Note: A systematic approach for COVID-19 predictions and parameter estimation (Personal and Ubiquitous Computing, (2023), 27, 3, (675-687), 10.1007/s00779-020-01462-8)

Srivastava, Vishal (Netaji Subhas Institute of Technology, Sector 3, Dwarka, New Delhi, India); Srivastava, Smriti; Chaudhary, Gopal; Al-Turjman, Fadi

Source: Personal and Ubiquitous Computing, v 29, n Suppl 1, p 1, February 2025

Database: Compendex

Data Provider: Engineering Village

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56. Self-disclosure to conversational AI: a literature review, emergent framework, and directions for future research   (*Open Access*)

Papneja, Hashai (Heider College of Business, Creighton University, Omaha; NE; 68178, United States); Yadav, Nikhil

Source: Personal and Ubiquitous Computing, v 29, n 2, p 119-151, April 2025

Open Access type(s): All Open Access, Hybrid Gold

Database: Compendex

Data Provider: Engineering Village

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57. A voting-based trustworthy distributed IoT attack detection model

Sharma, Priya (University School of Information & Communication Technology, Gautam Buddha University, Greater Noida, India); Sharma, Sanjay Kumar; Dani, Diksha

Source: Personal and Ubiquitous Computing, v 29, n 1, p 103-118, February 2025

Database: Compendex

Data Provider: Engineering Village

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58. Retraction Note: A secure remote health monitoring model for early disease diagnosis in cloud-based IoT environment (Personal and Ubiquitous Computing, (2023), 27, 3, (697-713), 10.1007/s00779-020-01475-3)   (*Open Access*)

Akhbarifar, Samira (Department of Computer Engineering, Science and Research Branch, Islamic Azad University, Tehran, Iran); Javadi, Hamid Haj Seyyed; Rahmani, Amir Masoud; Hosseinzadeh, Mehdi

Source: Personal and Ubiquitous Computing, v29, n Suppl 1, p 3, February 2025

Open Access type(s): All Open Access, Hybrid Gold

Database: Compendex

Data Provider: Engineering Village

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59. Retraction Note: Thermodynamic imaging calculation model on COVID-19 transmission and epidemic cities risk level assessment—data from Hubei in China (Personal and Ubiquitous Computing, (2023), 27, 3, (715-731), 10.1007/s00779-020-01478-0)

Pang, Sulin (School of Emergency Management/Institute of Finance Engineering, Jinan University, Guangzhou; 510632, China); Wu, Jiaqi; Lu, Yinhua

Source: Personal and Ubiquitous Computing, v 29, n Suppl 1, p 13, February 2025

60. Retraction Note: Research on mobile impulse purchase intention in the perspective of system users during COVID-19 (Personal and Ubiquitous Computing, (2023), 27, 3, (665-673), 10.1007/s00779-020-01460-w)

Zhang, Wei (School of Economics and Management, Xi'an University of Technology, Shaanxi, Xi'an; 710054, China); Leng, Xuemei; Liu, Siyu

61. Under the camera eye: effects of video-surveillance technology on users' performance and anxiety levels

Gamberini, Luciano (Department of General Psychology, University of Padova, Padua, Italy); Barattini, Roberto; Pluchino, Patrik; Orso, Valeria

62. Is privacy hopeless? Hopelessness and privacy concern

Heinrich, Matthew (Department of Mathematics, Analytics, and Technology College of Business and Technology, Rockhurst University, 1100 Rockhurst Road, Kansas City; MO; 64110, United States); Gerhart, Natalie

63. Edgelet computing: enabling privacy-preserving decentralized data processing at the network edge (*Open Access*)

Javet, Ludovic (Petrus Team, Inria, Saclay, France); Anciaux, Nicolas; Bouganim, Luc; Pucheral, Philippe

64. Does digitalization improve innovation performance of enterprises? —Evidence from Chinese manufacturing enterprises survey

Liu, Huanhuan (International Poverty Reduction Center in China, No.1 North Street,

Taiyanggong, Beijing; 100028, China)

Source: Personal and Ubiquitous Computing, v 29, n 1, p 1-13, February 2025

Database: Compendex

Data Provider: Engineering Village

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65. Intersection of machine learning and mobile crowdsourcing: a systematic topic-driven review

Chen, Weisi (School of Software Engineering, Xiamen University of Technology, Fujian, Xiamen; 361024, China); Hussain, Walayat; Al-Qudah, Islam; Al-Naymat, Ghazi; Zhang, Xu

Source: Personal and Ubiquitous Computing, v 29, n 1, p 77-101, February 2025

Database: Compendex

Data Provider: Engineering Village

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66. Retraction Note: Forecasting major impacts of COVID-19 pandemic on country-driven sectors: challenges, lessons, and future roadmap(Personal and Ubiquitous Computing, (2021), 27, (807–830),10.1007/s00779-021-01530-7)   (*Open Access*)

Kumar, Saket (Amity School of Engineering and Technology, Amity University Uttar Pradesh, Noida, India); Viral, Rajkumar; Deep, Vikas; Sharma, Purushottam; Kumar, Manoj; Mahmud, Mufti; Stephan, Thompson

Source: Personal and Ubiquitous Computing, v 29, n Suppl 1, p 9, February 2025

Open Access type(s): All Open Access, Hybrid Gold

Database: Compendex

Data Provider: Engineering Village

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67. User-trust centric lightweight access control for smart IoT crowd sensing applications in healthcare systems

Mahmood, Zahid (Department of Computer Science & IT, University of Kotli, Azad Jammu & Kashmir, Kotli, Pakistan); Ashraf, Zeeshan; Iqbal, Muddesar; Farooq, Beenish

Source: Personal and Ubiquitous Computing, v 29, n 1, p 31-44, February 2025

Database: Compendex

Data Provider: Engineering Village

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68. Retraction Note: Enhanced BB84 quantum cryptography protocol for secure communication in wireless body sensor networks for medical applications (Personal and Ubiquitous Computing, (2023), 27,3, (875-885), 10.1007/s00779-021-01546-z)

V, Anusuya Devi (Department of Computer Science and Engineering, National Engineering College, K.R.Nagar, Tamilnadu, Kovilpatti; 628503, India); V, Kalaivani

Source: Personal and Ubiquitous Computing, v 29, n Suppl 1, p 11, February 2025

Database: Compendex

69. Retraction Note: Study on the evolution of information sharing strategy for users of online patient community(Personal and Ubiquitous Computing, (2020), 27, (689–695), 10.1007/s00779-020-01464-6)

Zhu, Panpan (Institute of Economics and Management, Henan Agricultural University, Zhengzhou, China); Shen, Jiang; Xu, Man

70. Modular design and adaptive control of urban signalized intersections systems using synchronized timed Petri nets

Lamghari Elidrissi, Hajar (LISA Laboratory, Cadi Ayyad University, Marrakesh, Morocco); Nait Sidi Moh, Ahmed; Tajer, Abdelouahed

71. Fault-resilient Control Strategy for Cascaded Multilevel Inverters in Grid-connected PV Systems   (*Open Access*)

Nacef, Sabrina (Université de Bejaia, Faculté de Technologie, Laboratoire de Maîtrise des Énergies Renouvelables (LMER), Bejaia; 06000, Algeria); Babouri, Rabah; Ghedamsi, Kaci; Houari, Azzedine

72. Formation Control Design of Fixed-wing UAVs Based on Model Reference Adaptive Control   (*Open Access*)

Lantos, Bela (Department of Control Engineering and Information Technology, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Műegyetem rkp. 3., Budapest; H-1111, Hungary); Kimathi, Stephen

73. Analysis of Electrical Faults and Mitigation Strategies for Double-star Induction Machines

Hassaini, Fayçal (Université de Bejaia, Faculté de Technologie, Laboratoire de Maîtrise des Énergies Renouvelables (LMER), Bejaia; 06000, Algeria); Imaouchen, Yacine; Ait Ouaret, Samira Chekkal; Aouzellag, Djamal; Aissou, Said; Amirouche, Elyazid; Kennouche, Samir

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 2, p 122-136, 2025

Database: Compendex

Data Provider: Engineering Village

74. A Self-adapting Pixel Antenna - Substrate Lens System for Infrared Frequencies   (*Open Access*)

Shubbar, Mustafa (Department of Automation and Applied Informatics, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Műegyetem rkp. 3., Budapest; H-1111, Hungary); Rakos, Balázs

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 1, p 14-25, 2025

Open Access type(s): All Open Access, Gold

Database: Compendex

Data Provider: Engineering Village

75. Metamodel-based Optimization of Anisotropic Rotor Axial Flux Permanent Magnet Synchronous Motors (*Open Access*)

Nyitrai, Attila (Department of Power Electronics and Electric Drives, Széchenyi István University, Egyetem tér 1., Győr; H-9026, Hungary); Kuczmann, Miklós

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 1, p 89-98, 2025

Open Access type(s): All Open Access, Gold

Database: Compendex

Data Provider: Engineering Village

76. An Improved Design of UWB Slotted Antipodal Vivaldi Antenna for Through-wall Imaging (TWI) Systems

Ahmed, Sajjad (Faculty of Electrical and Electronic Engineering (FKEE), Universiti Tun Hussein Onn Malaysia (UTHM), Parit Raja, Johor, Batu Pahat; 86400, Malaysia); Joret, Ariffuddin; Katiran, Norshidah; Abbasi, Muhammad Inam; Khan, Fawad Salam

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 2, p 207-214, 2025

Database: Compendex

Data Provider: Engineering Village

77. Comparative Study between Common and Individual MPPT Controller Using Fuzzy Logic Control for Hybrid System (Photovoltaic/Wind Energy Conversion System)   (*Open Access*)

Bouguerra, Zahira (Department of Electromechanical Engineering, Faculty of Sciences and Technologies, University of Mohamed El Bachir El Ibrahimi, El-Anasser, P.O.B. 64, Bordj Bou Arreridj; 34030, Algeria)

Open Access type(s): All Open Access, Gold

Database: Compendex

Data Provider: Engineering Village

78. The Effect of Stator and Rotor Faults on the Dual-star Induction Motor Behavior

Imaouchen, Yacine (Université de Bejaia, Faculté de Technologie, Laboratoire de Génie Electrique Bejaia, Bejaia; 06000, Algeria); Ait Ouaret, Samira Chekkal; Aouzellag, Djamal; Ghedamsi, Kaci

Database: Compendex

Data Provider: Engineering Village

79. Numerical Study of the Optimal Position of Corona Wires in Two Types of ESP   (*Open Access*)

Fayyad, Moath Bani (Department of Electric Power Engineering, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Műegyetem rkp. 3., Budapest; H-1111, Hungary); Iváncsy, Tamás

Open Access type(s): All Open Access, Gold

Database: Compendex

Data Provider: Engineering Village

80. Numerical Simulation of the Thermal Behavior of a Lithium-ion Cell Pack with Various Thermal Dissipation Structure and the Addition of Phase Change Materials

El Houda Korbaa, Nour (Laboratory of Applied Power Electronics (LEPA), Department of Electrical Engineering, Faculty of Electrical Engineering, University of Sciences and Technology of Oran Mohamed-Boudiaf (USTOMB), El-Mnaouer, P. O. B. 1505, Bir El Djir, Oran; 31000, Algeria); El Bachir Ghribi, Mohammed; Bouchetata, Nadir; Belarbi, Ahmed Wahid; Bachir, Ghalem

Database: Compendex
Data Provider: Engineering Village

81. Enhancing Decision-making in Uncertain Domains through Optimized Fuzzy Logic Systems (*Open Access*)

Sekhi, Ihab (Institute of Information Science, Faculty of Mechanical Engineering and Informatics, University of Miskolc, Miskolc; H-3515, Hungary); Kovács, Szilveszter; Nehéz, Károly
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

82. Breaking Barriers in-Vivo THz Communication Analysis for Nano Networks in Human Tissues (*Open Access*)

Asi, Ban A. (Department of Computer Engineering, College of Engineering, University of Mosul, Al Majmoaa Street, Mosul; 41002, Iraq); Mahmood, Farhad E.; Najim, Nada I.
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

83. Optimal Power Flow Solution of Hybrid AC-DC Network Using Particle Swarm Method (*Open Access*)

Ghanemi, Nadir (Department of Electrical Engineering, Laboratory of Electrical Engineering, University of Constantine, 1, Route Ain Elbey, Constantine; 25000, Algeria); Labed, Djamel
Open Access type(s): All Open Access, Gold
Database: Compendex
Data Provider: Engineering Village

84. Implementation of Parallel Applications on Linear Systolic and Star Topologies by Using Multistage Omega Network (*Open Access*)

Alsaffar, Qusay Samir (National School of Electronics and Telecommunications of Sfax, University of Sfax, P.O.B. 1169, Sfax; 3029, Tunisia); Ayed, Leila Ben

85. Bandwidth Enhancement of a Current Sensing Trace by Adaptive Inverse Filtering (*Open Access*)

Hegedűs, Ákos Ferenc (Department of Artificial Intelligence and Systems Engineering, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Műegyetem rkp. 3., Budapest; H-1111, Hungary); Dabóczi, Tamás

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 2, p 198-206, 2025

86. Anti-interference Technology of Intelligent Communication Based on Improved GA and GWO (*Open Access*)

Gao, Dongjie (School of Mathematics and Statistics, Heze University, Heze; 274015, China)

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 1, p 1-13, 2025

87. Optimization of Bacterial Image Processing for Early Detection of Acute Respiratory Infection (ARI) Disease (*Open Access*)

Imron, Arizal Mujibtamala Nanda (Department of Electrical Engineering, Faculty of Engineering, Universitas Jember, Kalimantan Street No. 37, Bumi Tegalboto Campus, P. O. B. 159, East Java, Jember; 68121, Indonesia); Fitri, Zilvanhisna Emka; Putra, Alfian Pramudita

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 1, p 99-109, 2025

88. Mathematical Remodeling: Hierarchical Sensitivity Analysis Approach Based on Analysis of Finite Fluctuations

Sysoev, Anton (Department of Applied Mathematics, Institute of Computer Sciences, Lipetsk State Technical University, Moskovskaya str. 30, Lipetsk; RU-398070, Russia); Saraev, Pavel

Source: Periodica Polytechnica Electrical Engineering and Computer Science, v 69, n 2, p 188-197, 2025

89. Observer-based Implementation of Discrete Gabor Transform (*Open Access*)

Ország, Bence (Department of Artificial Intelligence and Systems Engineering, Faculty of Electrical Engineering and Informatics, Budapest University of Technology and Economics, Műegyetem rkp. 3., Budapest; H-1111, Hungary); Sujbert,

László

Open Access type(s): All Open Access, Gold

90. A New Hybrid Water Cycle Algorithm for Path Planning with Obstacle Avoidance for Indoor Assistant Autonomous UAV Navigation

Tenniche, Nesrine (Université de Bejaia, Faculté de Technologie, Laboratoire de Technologie Industrielle et de l'Information, Bejaia; 06000, Algeria); Mendil, Boubekeur

91. Prediction of maize crude fat content based on improved conditional mutual information maximization and SHAP analysis

Zhou, Haichao (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Da Qing; 163319, China); Ma, Xiaodan; Guan, Haiou; Yang, Jiao; Wei, Bingxue; Zhang, Yifei; Lu, Yuxin

92. Non-destructive origin identification of millet based on the combination of NIRS and improved WOA based feature wavelength selection

Gao, Peng (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Wang, Na; Lu, Yang; Liu, Jinming; Hou, Rui; Du, Xinyue; Hao, Yingying

93. Effects of pyrolysis pretreatment and addition of KMnO4 on the electrochemical properties of peanut shell modified carbon (热解预处理与 KMnO4 添加对花生壳改性炭电化学性能的影响)

An, Jiaming (Academy of Agricultural Planning and Engineering, Key Laboratory of Energy Resource Utilization from Agriculture Residue, Ministry of Agriculture and Rural Affairs, China Agricultural Waste of the Ministry of Agriculture and Rural Affairs, Beijing; 100125, China); Chen, Mingsong; Xing, Haohan; Li, Lijie; Li, Qingda; Cong, Hongbin; Fu, Jing

Source: Nongye Gongcheng Xuebao/Transactions of the Chinese Society of Agricultural Engineering, v 41, n 14, p 247-254, July 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

94. A method of rice yield prediction based on the QRBILSTM-MHSA network and hyperspectral image

Lu, Yang (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Li, Peilin; Wang, Peng; Li, Tongyao; Li, Gongfa

Source: Computers and Electronics in Agriculture, v 239, December 2025

Database: Compendex

Data Provider: Engineering Village

95. The impact of information technology on the progress of ideological and political education

Ma, Sanxi (School of Marxism, Heilongjiang Bayi Agricultural University, Daqing, China)

Source: Journal of Computational Methods in Sciences and Engineering, 2025 Article in Press

Database: Compendex

Data Provider: Engineering Village

96. Ultrasonic-assisted extraction, analysis and biological activities of polysaccharide from white quinoa

Zang, Yanqing (College of Food Science, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing, China); Chuang, Yingying; Wang, Changyuan; Cao, Yang

Source: Journal of Food Science and Technology, 2025 Article in Press

Database: Compendex

Data Provider: Engineering Village

97. Determination of 16 phthalate esters by gas chromatography-barrier discharge ionization detector

Jia, Pengyu (National Coarse Cereals Engineering Research Center, Daqing; 163319, China);

Chen, Shuang; Sun, Rui; Li,Liangyu; Zhang, Liyuan; Yan, Yan

Source: Chinese Journal of Analysis Laboratory, v 44, n 7, p 1083-1089, 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

98. Genome-wide identification of the SAM-dependent methyltransferase members and functional analysis of GmSAMMt30 in soybean (Glycine max) under salt-alkali stress

Zhang, Wenjing (Agricultural College, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing; 163319, China); Yu, Jinqi; He, Zitian; Guo, Jiaxuan; Huang, Changchao; Xu, Qingqing; Dong, Xianya; Yang, Ziyi; Chen, Beixi; Quan, Cheng; Li, Meiqing; Zhang, Qi; Du, Jidao

Source: Theoretical and Applied Genetics, v 138, n 9, September 2025

Database: Compendex

Data Provider: Engineering Village

99. Research Status and Progress of Forward Osmosis Technology in Fruit Juice Concentrate (正渗透技术在浓缩果汁中的研究现状及进展)

Xue, Jian (College of Food Science, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Jin, Limei; Sun, Qingrui; Sui, Shiyou; Pu, Nana

Source: Science and Technology of Food Industry, v 46, n 18, p 446-457, September 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

100. Screening, Genome Sequencing and Tolerance Mechanism Analysis of Bile Acid-resistant Pediococcus pentosaceus 32M07 (耐胆汁酸戊糖片球菌 32M07 筛选、基因组测序及其胆汁酸耐受机制的解析)

Hong, Qingping (National Coarse Cereals Engineering Research Center, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Di, Ziqing; Sun, Daqing; Du, Xinrui; Li, Hongfei; Yao, Yuxi; Ge, Xianglin

Source: Science and Technology of Food Industry, v 46, n 17, p 213-223, September 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

101. Effects of Mixed Fermentation with Rhizopus oryzae and Lactobacillus fermentum on the Structure and Functional Activity of Dietary Fiber in Rice Bran (米根霉和发酵乳杆菌混合发酵对米糠膳食纤维结构及功能活性的影响)

Wang, Kun (Food College of Heilongjiang Bayi Agricultural University, Daqing; 163000, China);

Pan, Yuxi; Zhang, Zhi; Hu, Hao; Tai, Mengdie; Li, Silu; Zhao, Jing; Qian, Lili; Zuo, Feng

Source: Science and Technology of Food Industry, v 46, n 17, p 240-251, 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

102. Unlocking sustainable biomass conversion: Enhanced cellulose de gradation by a mutant Trichoderma viride JC-1U7

Sun, Jiajia (College of Life Sciences, Northeast Forestry University, China); Guo, Ao; Tan, Lina; Wang, Xinyu; Zhang, Yu; Wang, Weihao; Zhang, Zhi; Liu, Jiansheng; Zhang, Shenglong

Source: Biomass and Bioenergy, v 203, December 2025

Database: Compendex

Data Provider: Engineering Village

103. A Diagnostic Method for Adzuki Bean Rust Based on an Improved E-DWT Algorithm and Deep Learning Model (基于改进 E-DWT 算法和深度学习模型的红小豆锈病诊断方法)

Fu, Qiang (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Guan, Hai-Ou; Li, Jia-Qi

Source: Guang Pu Xue Yu Guang Pu Fen Xi/Spectroscopy and Spectral Analysis, v 45, n 9, p2648-2657, September 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

104. Advances in the Preparation, Properties and Applications of Plant Protein-Cellulose Stabilized Emulsions

Zhu, Xiuqing (Key Laboratory of Food Science and Engineering of Heilongjiang Province, Provincial Engineering Laboratory of Green Food Processing and Storage, College of Food Engineering, Harbin University of Commerce, Harbin; 150028, China); Xuan, Xihuan; Guo, Ruqi; Liu, Simiao; Zhu, Ying; Wang, Ying; Zhao, Zili

Source: Shipin Kexue/Food Science, v 46, n 17, p 412-423, September 15, 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

105. AWABC-SVR methodology for swift moisture content assessment

Zhang, Yuting (Heilongjiang Bayi Agricultural University, Heilongjiang Province, Daqing City, China); Zhao, Xiaoyu; Zhao, Yue; Cai, Lijing; Tong, Liang; Zhai, Zhe

Source: Proceedings of SPIE - The International Society for Optical Engineering, v 13692, 2025, Fourth International Conference on Electronics Technology and Artificial Intelligence, ETAI 2025

106. Dynamic regulation of mung bean globulin amyloid fibrillation by Gallic acid: Structural and functional insights

Jiang, Peng (College of Food Science, Heilongjiang Bayi Agricultural University, Heilongjiang, Daqing; 163319, China); Xu, Qingpeng; Zhang, Shu; Fu, Tianxin; Diao, Jingjing; Li, Zhijiang; Wang, Changyuan

107. Optimization of Biochar Pellet Production from Corn Straw Char and Waste Soybean Powder Using Ultrasonic Vibration-Assisted Pelleting

Li, Wentao (College of Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Yin, Shengxu; Sui, Jianning; Luo, Lina

108. Improved Crayfish Optimization Algorithm for Solving Feature Selection Problem

Rao, Honghua (School of Electrical and Information Engineering, Northeast Petroleum University, Daqing; 163318, China); Jia, Heming; Shi, Xiaoming; You, Fangkai; Xue, Bowen; Du, Yilong

109. Numerical investigation of secondary flow-induced heat transfer enhancement mechanisms and near-wall flow structures in helical groove tubes

Wang, Shuo (College of Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Wan, Lin; Che, Gang; Wang, Hongchao; Du, Tingbo; Wang, Chaofan

110. Evolution mechanism of thermo-mechanical properties and microstructure of foamed cement regulated by water-based drilling cuttings co

ntent

Huang, Lidi (School of Civil Engineering and Architecture, Northeast Petroleum University, Fazhan Lu Street, Daqing; 163318, China); Che, Jieran; Jiang, Wei; Li, Xingyu; Li, Qing; Fan, Shijie; Liu, Yandong

Source: Process Safety and Environmental Protection, v 202, October 2025

Database: Compendex

Data Provider: Engineering Village

111. Maximizing computation rate for NOMA-based WPT-MEC with user cooperation under nonlinear EH model

Duan, Yunge (College of Information and Electrical Engineering, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Liu, Zhenbo; Fu, Shuang

Source: Computer Networks, v 271, October 2025

Database: Compendex

Data Provider: Engineering Village

112. Regulatory Effect of Equol on the Susceptibility to Metabolic Syndrome in Offspring of Rats with Gestational Diabetes Mellitus

Chu, Hangyu (College of Food, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Chi, Xiaoxing; Guo, Xiaoyan; Wang, Ying; Wang, Helin

Source: Shipin Kexue/Food Science, v 46, n 18, p 115-121, September 25, 2025

Language: Chinese

Database: Compendex

Data Provider: Engineering Village

113. Metal–Organic Framework-Remodeled Gut Microbiota Alleviates Colonic Inflammation via Selective Modulation of Roseburia intestinalis

Hu, Huijie (State Key Laboratory for Diagnosis and Treatment of Severe Zoonotic Infectious Diseases, Key Laboratory for Zoonosis Research, Ministry of Education, Institute of Zoonosis, College of Veterinary Medicine, Jilin University, Changchun;130062, China); Su, Xiaomin; Dong, Qing; Yuan, Shuai; Ding, Shaokang; Liu, Juxiong; Xu, Bin; Tu, Liqun; Liu, Xuanting; Cao, Yu; Wang, Xinyue; Yang, Guiying; Guo, Wenjin; Fu, Shoupeng; Chao, Daiyong

Source: ACS Nano, v 19, n 34, p 31107-31125, September 2, 2025

Database: Compendex

Data Provider: Engineering Village

114. Changes in Structural, Physicochemical, and Functional Properties of Germ Rice during Germination(胚芽米在发芽过程中结构、理化及功能特性的变化)

Lu, Lele (College of Food Science, Heilongjiang Bayi Agricultural University, Daqing; 163319, China); Shen, Qin; Liu, Shilin;Wang, Baijun; Lang, Shuangjing; Wang, Lidong; Wang, Changyuan