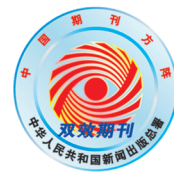


国际数据库 (EI, CA, FSTA, IC, JST) 收录期刊 国家自然科学基金资助重点学术期刊 中国科学引文数据库收录期刊
百种中国杰出学术期刊 中国精品科技期刊 中国权威学术期刊 中文核心期刊 中国科技核心期刊 中国农业核心期刊

食品科学

201917



中国出版政府奖期刊提名奖



ISSN 1002-6630
CN 11-2206/TS

FOOD SCIENCE

2019年第40卷第17期

半月刊

2019年9月15日出版



专注于 **生物酶制剂** 生产销售研发**41**年
CHINA LEADING **PANGBO ENZYME** ENZYME PRODUCER

新型与特种生物酶

α-半乳糖苷酶、核酸酶、脱氨酶
脂肪酶、乳糖酶、葡萄糖氧化酶
β-葡聚糖酶、单宁酶、几丁质酶等

食品加工酶制剂

木瓜蛋白酶、谷氨酰胺转氨酶(TG酶)
中性、碱性、酸性蛋白酶、风味酶
动物蛋白水解酶、嫩肉酶、酵母酶
植物蛋白水解酶、核酸酶、脱氨酶等

医药及保健品酶制剂

(特别推荐) 消化酶、乳糖酶
溶菌酶、脂肪酶、纤维素酶
淀粉酶、木瓜蛋白酶、胰蛋白酶
菠萝蛋白酶、胃蛋白酶等

ISSN 1002-6630



广西南宁庞博生物工程技术有限公司
GUANGXI NANNING PANGBO BIOLOGICAL ENGINEERING CO.,LTD

全国统一销售热线
0771-4868825



目次

食品

2019年 第40卷

基础研究

- 红茶菌发酵黄浆水的体外抗氧化活性·····唐思颢, 涂传海, 胡文秀, 董明盛*(1)
- 稻谷等温干燥-缓苏过程数值模拟及优化·····吴中华, 王珊珊, 董晓林, 赵丽娟, 张忠杰(7)
- 米糠酸败对米糠蛋白体外胃蛋白酶消化产物结构特征的影响·····吴伟, 何莉媛, 黄慧敏, 吴晓娟*, 林亲录(14)
- 植物乳杆菌B02012对酸面团小麦蛋白结构和
免疫特性的影响·····廖兰, 文晓艳, 陈林萍, 张风丽, 林维杰, 杨彦红, 陈雪芹, 张连岳, 倪莉*(22)
- 两种饲养方式下苏尼特羊肉的
氧化稳定性·····罗玉龙, 刘畅, 李文博, 王柏辉, 窦露, 杜瑞, 要铎, 赵丽华, 苏琳, 靳焯*(30)
- 腌腊鱼传统日晒干制过程中品质变化与香气形成·····顾赛麒, 唐锦晶, 周绪霞, 郑皓铭, 周洪鑫, 丁玉庭*(36)
- AMPK活性对宰后牛肉糖酵解、肌肉内环境
及品质的影响·····高永芳, 宫玉霞, 杨雅媛, 韩玲*, 余群力*, 朱跃明, 韩广星, 薄文喜(45)
- 不同温度对弓鲤鱼与弓鲑鱼乳酸盐代谢网络通量的影响·····袁帅, 庞广昌*(53)
- 基于模糊感官评价的大豆品种对豆浆加工品质影响分析·····金雪花, 郭顺堂, 陈辰, 栾晓燕, 张惠*(59)
- 兔皮胶原快速明胶化分子机制·····冯鑫, 苏现波, 马明思, 马良, 戴宏杰, 余永, 郭婷, 周鸿媛, 张宇昊*(65)
- 银耳多糖与结冷胶复配体系的流变及凝胶特性·····刘婷婷, 杨嘉丹, 曹宸瑀, 张艳荣*(72)
- 发光杆菌SN259发酵液中二苯乙烯类化合物的分离、
鉴定及体外抗氧化活性·····王保娟, 汪钰, 石丹姝, 席雪冬, 于志国*(79)
- 不同糯米/粳米共混体系凝胶化行为及年糕品质·····胡文轩, 陈洁*, 许飞, 陈玲(85)
- 粉蕉后熟过程中香气品质变化及其关键基因表达特性·····朱孝扬, 李秋棉, 罗均, 陈维信, 陆旺金, 李雪萍*(96)
- 卵形鲳鲹肌肉原料特性及食用
品质的分析与评价·····熊添, 吴燕燕*, 李来好, 林婉玲, 杨贤庆, 胡晓, 杨少玲(104)
- 柠檬醛对副溶血性弧菌的抑制作用·····郭都, 孙慧慧, 孙正, 孙怡, 夏效东, 石超*(113)
- 柠檬醛对酸腐菌线粒体形态和功能的影响·····刘淼, 陶能国, 许灵春, 吴育藩, 杨文嵩, 敬国兴*(121)
- 高湿度结合不同温度解冻对猪肉理化及
蛋白特性的影响·····朱明明, 彭泽宇, 鲁森, 马长明, 何鸿举, 王正荣, 马汉军, 康壮丽, 赵圣明(127)
- 不同海洋生物源肝素的理化性质及抗凝血活性·····杜振兴, 周斯仪, 钟赛意*, 陈观兰, 陈建平, 谌素华, 洪鹏志(134)
- 基于主成分分析与聚类分析的中、早熟桃品种
制汁品质评价·····张春岭, 刘慧, 刘杰超, 吕真真, 杨文博, 王力荣, 焦中高*(141)
- 红心火龙果热风干燥动力学模型及品质变化·····楚文靖, 盛丹梅, 张楠, 于艳, 张峰, 叶双双(150)

食品工程

- 不同均质工艺处理对巴氏杀菌乳脂肪球膜蛋白质组成的影响·····张瑞明, 刘梦霞, 王祎, 刘晓辉, 于景华*(156)
- 黑果枸杞花色苷纳米颗粒的制备及其对氧化低密度脂蛋白诱导的人脐静脉融合细胞
氧化损伤的保护作用·····冉林武, 米佳, 禄璐, 陈菲, 罗青, 李晓莺, 闫亚美*, 曹有龙, 黄庆荣*(162)
- 高压均质对脂质体囊泡特性和稳定性的影响·····邵克东, 赵苏茂, 杨紫恒, 毛立科, 高彦祥, 袁芳*(169)
- 微流化对豆乳粉蛋白结构及溶解性的影响·····李良, 周艳, 王冬梅, 樊金源, 吴长玲,
朱颖, 李杨, 江连洲, 王中江*, 范志军*(178)

科 学

目 次



第17期 总第606期

双螺杆挤压对玉米重组米理化特性及品质特性的影响 谢 天, 孙洪蕊, 康立宁*, 李凤林*, 田志刚, 刘香英(183)
高压静电场预处理对花生芽活性物质及抗氧化能力的影响 张 茜, 郑雅莹, 李 妍, 江正强, 刘海杰*(190)

营养卫生

甜菜红素对小鼠体内抗氧化及
免疫调节的作用 包晓玮, 韩海霞, 杜光明, 魏辰业, 朱 璇, 任 薇, 曾兰君, 张亚涛(196)
大豆分离蛋白-杏鲍菇多糖共价结合物对RAW264.7
细胞的免疫调节作用 吴怡亮, 仲 磊, 马 宁, 裴 斐, 马高兴, 胡秋辉*(202)
高通量测序技术研究不同喂养和分娩方式对不同月龄
婴幼儿肠道菌群的影响 杨 莉, 葛武鹏*, 梁秀珍, 张 静, 王西宁, 张 雪, 崔秀秀, 龚 胜(208)
Anti-fatigue Effect of Glutathione in Mice and
Its Underlying Mechanisms NIU Zhenzhen, GUO Yaoyao, ZHAO Xinling, JIN Hong, GONG Yanling*(216)
Effects of Quercetin, Kaempferol, and Rutin on High-Fructose and High-Fat Diet Induced Metabolic
Syndrome in Rats LI Bowen, ZHAO Liang, WANG Yong, ZHAO Nan, JI Baoping, CHENG Qian*, ZHOU Feng*(223)

包装贮运

模拟物流条件下温度变化对大菱鲆品质的影响 尚菲菲, 李婷婷*, 杨亚茹, 于海凤, 王当丰, 谢 晶, 励建荣*(234)
不同质量分数NaCl和CaCl₂盐溶液解冻对金枪鱼品质的影响 余文晖, 王金锋, 谢 晶*(240)
不同冷冻方式对淡水鱼品质的影响 周俊鹏, 朱 萌, 章 蔚, 汪 兰, 石 柳, 张 毅, 黄 煌, 熊光权*,
刘文锦, 李 新, 乔 宇, 丁安子, 廖 李(247)
纳他霉素处理对鲜切双孢菇褐变的抑制机理 徐冬颖, 顾思彤, 周福慧, 陈 晨, 姜爱丽*, 胡文忠*(255)
肉桂醛熏蒸处理对香菇采后抗氧化能力及多胺的影响 钱霄晨, 蔺凯丽, 黄 琦, 温小礼, 姜天甲*, 郑小林(263)
壳聚糖/姜黄素/γ-聚谷氨酸可食性复合膜的制备及对培根和火腿的保鲜效果 李天密, 屈思佳, 韩俊华*(270)
ε-聚赖氨酸和L-抗坏血酸处理对鲜切菠菜品质的影响 郁 杰, 谢 晶*(277)

专题论述

葡萄酒中的酚类物质II: 辅色效应与生物活性研究进展 赵 旭, 张欣珂, 陈新军, 张珊珊, 何 非*(284)
鱼类内脏蛋白的开发和应用研究进展 郑子懿, 李 琳*, 苏 丹, 李光辉(295)
运动性疲劳的机制与大豆多肽对其调控的研究进展 吴良文, 陈 宁*(302)
酿酒小曲中功能微生物的研究进展 王春晓, 唐佳代, 吴鑫颖, 周鸿翔, 邱树毅*(309)
天然可食性壁材虫胶在功能组分微囊化中的应用研究进展 黄 雪, 张 慧, 彭舒悦, 赵 萌*, 方亚鹏(317)
菊粉调节能量代谢紊乱机制的研究进展 胡 婷, 李 键, 张 玉, 王洪伟, 赵 欣, 丁阳平, 索化夷*(325)
抗冻肽的研究进展及其在食品工业的应用前景 陈 旭, 蔡茜茜, 汪少芸*, 杨傅佳, 吴金鸿(331)
超声声学效应在果蔬酚类化合物提取中的研究进展 王鹏旭, 成传香, 马亚琴*, 张 震, 贾 蒙(338)
纳米颗粒在侧流免疫层析技术中的应用研究进展 田亚晨, 王淑娟, 马 兰, 谢曼曼, 许东坡,
刘 程, 丁承超, 郭 亮, 方水琴, 王 翔, 邱景璇, 董庆利, 刘 箐*(348)
鸡蛋贮藏期细菌污染及其对蛋品质影响的研究进展 陈力力, 申田宇, 刘 金, 陈 欢, 张立钊(357)

**Basic Research**

- Antioxidant Activity of Fermented Soy Whey with Kombucha Consortium.....TANG Sijie, TU Chuanhai, HU Wenxiu, DONG Mingsheng* (1)
- Numerical Simulation and Optimization of Isothermal
Drying-Tempering Process for Paddy.....WU Zhonghua, WANG Shanshan, DONG Xiaolin, ZHAO Lijuan, ZHANG Zhongjie (7)
- Effect of Rice Bran Rancidity on Structural Characteristics of *in Vitro*
Pepsin Digest of Rice Bran Protein.....WU Wei, HE Liyuan, HUANG Huimin, WU Xiaojuan*, LIN Qinlu (14)
- Impacts of *Lactobacillus plantarum* B02012 on Gluten Structure and Immunoreactivity in Sourdough.....LIAO Lan, WEN Xiaoyan,
CHEN Linping, ZHANG Fengli, LIN Weijie, YANG Yanhong, CHEN Xueqin, ZHANG Lianye, NI Li* (22)
- Effects of Two Feeding Patterns on Oxidation Stability of Sunit Sheep Meat.....LUO Yulong, LIU Chang, LI Wenbo,
WANG Bohui, DOU Lu, DU Rui, YAO Duo, ZHAO Lihua, SU Lin, JIN Ye* (30)
- Quality Change and Aroma Formation in Cured Fish during Traditional Sun Drying Processing.....GU Saiqi, TANG Jinjing,
ZHOU Xuxia, ZHENG Haoming, ZHOU Hongxin, DING Yuting* (36)
- Effect of Adenosine Monophosphate-Activated Protein Kinase (AMPK) Activity on Glycolysis, Intramuscular Environment and
Quality of Beef during Postmortem Aging.....GAO Yongfang, GONG Yuxia, YANG Yayuan, HAN Ling*,
YU Qunli*, ZHU Yueming, HAN Guangxing, BO Wenxi (45)
- Effects of Different Temperatures on Lactate Metabolic Network Flux in
Bow-Bound Carp and Bow-Bound Catfish.....YUAN Shuai, PANG Guangchang* (53)
- Soymilk Processing Properties of Soybean Varieties
Based on Fuzzy Sensory Evaluation.....JIN Xuehua, GUO Shuntang, CHEN Chen, LUAN Xiaoyan, ZHANG Hui* (59)
- Molecular Mechanism of Rapid Gelatinization of Rabbit Skin Collagen.....FENG Xin, SU Xianbo, MA Mingsi, MA Liang,
DAI Hongjie, YU Yong, GUO Ting, ZHOU Hongyuan, ZHANG Yuhao* (65)
- Rheological and Gelling Properties of *Tremella fuciformis* Polysaccharide and
Gellan Gum Mixtures.....LIU Tingting, YANG Jiadan, CAO Chenyu, ZHANG Yanrong* (72)
- Isolation, Identification and Antioxidant Activity of Stilbene Derivatives from Fermentation Broth of
Photobacterium temperata SN259.....WANG Baojuan, WANG Yu, SHI Danshu, XI Xuedong, YU Zhiguo* (79)
- Effects of Different Glutinous and Japonica Rice Blends on Gelation Behavior and
Quality of Rice Cake.....HU Wenxuan, CHEN Jie*, XU Fei, CHEN Ling (85)
- Evolution of Aroma Components and Key Gene Expression during Postharvest Ripening of
Banana (*Musa ABB Pisang Awak*).....ZHU Xiaoyang, LI Qiumian, LUO Jun, CHEN Weixin, LU Wangjin, LI Xueping* (96)
- Material Characteristics and Eating Quality of
Trachinotus ovatus Muscle.....XIONG Tian, WU Yanyan*, LI Laihao, LIN Wanling, YANG Xianqing, HU Xiao, YANG Shaoling (104)
- Antimicrobial Activity of Citral against *Vibrio parahaemolyticus*.....GUO Du, SUN Huihui, SUN Zheng, SUN Yi, XIA Xiaodong, SHI Chao* (113)
- Effect of Citral on Mitochondrial Morphology and Function in
Geotrichum citri-aurantii.....LIU Miao, TAO Nengguo, XU Lingchun, WU Yufan, YANG Wenhao, JING Guoxing* (121)
- Effect of High-Humidity Thawing under Different Temperatures on Physicochemical Characteristics and
Protein Properties of Frozen Pork.....ZHU Mingming, PENG Zeyu, LU Sen, MA Changming, HE Hongju,
WANG Zhengrong, MA Hanjun, KANG Zhuangli, ZHAO Shengming (127)
- Physicochemical Properties and Anticoagulant Activity of Heparin from
Different Marine Organisms.....DU Zhenxing, ZHOU Siyi, ZHONG Saiyi*, CHEN Guanlan, CHEN Jianping, CHEN Suhua, HONG Pengzhi (134)
- Evaluation of Juice Quality of Mid-Early Ripening Peach Varieties Based on Principal Component
Analysis and Cluster Analysis.....ZHANG Chunling, LIU Hui, LIU Jiechao, LÜ Zhenzhen, YANG Wenbo, WANG Lirong, JIAO Zhonggao* (141)
- Hot-Air Drying of Red-Fleshed Pitaya: Kinetic Modelling and
Quality Changes.....CHU Wenjing, SHENG Danmei, ZHANG Nan, YU Yan, ZHANG Feng, YE Shuangshuang (150)

Food Engineering

- Effects of Different Homogenization Processes on Fat Globule Membrane
Protein Composition of Pasteurized Milk.....ZHANG Ruiming, LIU Mengxia, WANG Yi, LIU Xiaohui, YU Jinghua* (156)
- Preparation of Anthocyanin-Loaded Nanoparticles from *Lycium ruthenicum* Murr. and Its Protective Effect on Oxidative Damage of
EAhy926 Cells Induced by Oxidized Low-Density Lipoprotein.....RAN Linwu, MI Jia, LU Lu, CHEN Fei, LUO Qing, LI Xiaoying,
YAN Yamei*, CAO Youlong, HUANG Qingrong* (162)
- Effect of High-Pressure Homogenization on Vesicle Characteristics and
Stability of Liposomes.....TAI Kedong, ZHAO Sumao, YANG Ziheng, MAO Like, GAO Yanxiang, YUAN Fang* (169)



- Effect of Microfluidization on Protein Structure and Solubility of Soymilk Powder LI Liang, ZHOU Yan, WANG Dongmei, FAN Jinyuan, WU Changling, ZHU Ying, LI Yang, JIANG Lianzhou, WANG Zhongjiang*, FAN Zhijun* (178)
- Effect of Twin-Screw Extrusion on Physicochemical Properties and Quality Characteristics of Corn Flour XIE Tian, SUN Hongrui, KANG Lining*, LI Fenglin*, TIAN Zhigang, LIU Xiangying (183)
- Effect of High-Voltage Electrostatic Field on Bioactive Components and Antioxidant Activity of Peanut Sprouts ZHANG Qian, ZHENG Yaying, LI Yan, JIANG Zhengqiang, LIU Haijie* (190)

Nutrition and Hygiene

- Antioxidant Activity and Immunomodulatory Effect of Betalain in Mice BAO Xiaowei, HAN Haixia, DU Guangming, WEI Chenye, ZHU Xuan, REN Wei, ZENG Lanjun, ZHANG Yatao (196)
- Immunoregulatory Effect of Soybean Protein Isolate-*Pleurotus eryngii* Polysaccharide Conjugate on RAW264.7 Cells WU Yiliang, ZHONG Lei, MA Ning, PEI Fei, MA Gaoxing, HU Qiuhui* (202)
- Effects of Feeding and Delivery Modes on Intestinal Flora of Infants of different Ages Investigated by High-Throughput Sequencing YANG Li, GE Wupeng*, LIANG Xiuzhen, ZHANG Jing, WANG Xining, ZHANG Xue, CUI Xiuxiu, GONG Sheng (208)
- Anti-fatigue Effect of Glutathione in Mice and Its Underlying Mechanisms NIU Zhenzhen, GUO Yaoyao, ZHAO Xinling, JIN Hong, GONG Yanling* (216)
- Effects of Quercetin, Kaempferol, and Rutin on High-Fructose and High-Fat Diet Induced Metabolic Syndrome in Rats LI Bowen, ZHAO Liang, WANG Yong, ZHAO Nan, JI Baoping, CHENG Qian*, ZHOU Feng* (223)

Packaging, Storage and Transportation

- Effect of Temperature Change on Quality of Turbot (*Scophthal musmaximus*) under Simulated Logistics Conditions SHANG Feifei, LI Tingting*, YANG Yaru, YU Haifeng, WANG Dangfeng, XIE Jing, LI Jianrong* (234)
- Effects of Thawing in NaCl and CaCl₂ Solutions at Different Concentrations on the Quality of Frozen Tuna YU Wenhui, WANG Jinfeng, XIE Jing* (240)
- Effect of Different Freezing Methods on the Quality of Freshwater Fish ZHOU Junpeng, ZHU Meng, ZHANG Wei, WANG Lan, SHI Liu, ZHANG Yi, HUANG Huang, XIONG Guangquan*, WU Wenjin, LI Xin, QIAO Yu, DING Anzi, LIAO Li (247)
- Inhibitory Mechanism of Natamycin on Browning of Fresh-Cut *Agaricus bisporus* XU Dongying, GU Sitong, ZHOU Fuhui, CHEN Chen, JIANG Aili*, HU Wenzhong* (255)
- Effect of Cinnamaldehyde Fumigation on Antioxidant Capacity and Polyamines in Shiitake Mushroom QIAN Xiaochen, LIN Kaili, HUANG Qi, WEN Xiaoli, JIANG Tianjia*, ZHENG Xiaolin (263)
- Preparation of Chitosan/Curcumin/ γ -Polyglutamic Acid Edible Composite Film and Its Preservative Effect on Bacon and Sausage LI Tianmi, QU Sijia, HAN Junhua* (270)
- Effects of ϵ -Polylysine and L-Ascorbic Acid on the Quality of Fresh-Cut Spinach YU Jie, XIE Jing* (277)

Reviews

- Phenolics in Wines II: Progress in Research on Copigmentation and Bioactivities ZHAO Xu, ZHANG Xinke, CHEN Xinjun, ZHANG Shanshan, HE Fei* (284)
- Recent Progress in Development and Application of Proteins from Fish Viscera ZHENG Ziyi, LI Lin*, SU Dan, LI Guanghui (295)
- Progress in Understanding the Mechanism of Exercise-Induced Fatigue and Its Regulation by Soybean Peptide WU Liangwen, CHEN Ning* (302)
- Progress in Research of Functional Microbes in Xiaoqiu, a Chinese Traditional Fermentation Starter for Liquor and Rice Wine WANG Chunxiao, TANG Jiadai, WU Xinying, ZHOU Hongxiang, QIU Shuyi* (309)
- Recent Progress in the Application Shellac as a Natural Edible Wall Material in the Microencapsulation of Functional Ingredients HUANG Xue, ZHANG Hui, PENG Shuyue, ZHAO Meng*, FANG Yapeng (317)
- Progress in the Understanding of the Mechanism by Which Inulin Regulates Energy Metabolism Disorders HU Ting, LI Jian, ZHANG Yu, WANG Hongwei, ZHAO Xin, DING Yangping, SUO Huayi* (325)
- Recent Progress and Application Prospects of Antifreeze Peptides in Food Industry CHEN Xu, CAI Xixi, WANG Shaoyun*, YANG Fujia, WU Jinhong (331)
- A Literature Review of Ultrasonic Effects in Extraction of Phenolic Compounds from Fruits and Vegetables WANG Pengxu, CHENG Chuanxiang, MA Yaqin*, ZHANG Zhen, JIA Meng (338)
- Recent Progress on Nanoparticles in Lateral Flow Immunochromatographic Strip TIAN Yachen, WANG Shujuan, MA Lan, XIE Manman, XU Dongpo, LIU Cheng, DING Chengchao, GUO Liang, FANG Shuiqin, WANG Xiang, QIU Jingxuan, DONG Qingli, LIU Qing* (348)
- Current Status of Bacterial Contamination during Egg Storage and Its Effect on Egg Quality CHEN Lili, SHEN Tianyu, LIU Jin, CHEN Huan, ZHANG Lizhao (357)