

9

2017

第38卷 总第310期
2017年5月 (半月刊)

ISSN 1005-6521
CN 12-1231/TS

食品研究与开发®

SHIPINYANJIUYUKAIFA FOOD RESEARCH AND DEVELOPMENT

- ◆ 中文核心期刊
- ◆ 中国科技核心期刊 (中国科技论文统计源期刊)
- ◆ RCCSE 中国核心学术期刊 (A)
- ◆ 天津市一级期刊

- ◆ 《中国核心期刊 (遴选) 数据库》收录期刊
- ◆ 万方数据——数字化期刊群全文上网
- ◆ 中文科技期刊数据库收录期刊
- ◆ 《中国期刊网》收录期刊
- ◆ 中国期刊全文数据库 (CJFD) 全文收录

- ◆ 美国《化学文摘》收录期刊
- ◆ 英国《食品科技文摘》(FSTA) 收录期刊
- ◆ 英国国际农业与生物科学研究中心 (CABI) 收录期刊
- ◆ 《乌利希期刊指南》收录期刊



利民调料

利民调料

品质保证 良心制造



首批QS生产许可准入企业
重合同、守信誉单位
质量信誉和信用3A企业
放心食品工程经营试点单位
天津市食品安全示范企业



和我们 一起调味

健康生活吧

食品行业核心刊物

- ◆中文核心期刊
- ◆中国科技核心期刊(中国科技论文统计源期刊)
- ◆RCCSE中国核心学术期刊(A)
- ◆中文科技期刊数据库收录期刊
- ◆万方数据—数字化期刊群全文上网
- ◆《中国核心期刊(遴选)数据库》收录期刊
- ◆《中国期刊网》收录期刊
- ◆中国期刊全文数据库(CJFD)全文收录
- ◆《乌利希期刊指南》收录期刊
- ◆美国《化学文摘》收录期刊
- ◆英国国际农业与生物科学研究中心(CABI)收录期刊
- ◆英国《食品科技文摘》(FSTA)收录期刊

《食品研究与开发》

2017年9期(半月刊)

主 管:天津食品集团有限公司

主 办:天津市食品研究所有限公司

天津市食品工业生产力促进中心

主 编:赵志广

编辑部主任:王 琦

编辑部副主任:赵 义 佟永薇

编辑出版:《食品研究与开发》编辑部

发 行:《食品研究与开发》编辑部

创刊年份:1980年

出版日期:每月10日、20日

地 址:天津市静海区静海经济开发区南区
科技路9号

邮 编:301609

电话/传真:022-59525671, 59525673

网 址: <http://www.tjfood.com.cn>

电子信箱: tjfood@vip.163.com

ISSN 1005-6521
CN 12-1231/TS

发行范围:国内外公开发行

国内订阅:全国各地邮局或本编辑部

邮发代号:6-197

国外发行:中国国际图书贸易总公司

国外发行代号:M8089

广告经营许可证号:1201044000116

印 刷:天津中铁物资印业有限公司

地 址:天津市河东区十四经路2号

国内定价:30元/册

国外定价:18美元/册

本刊已许可在中国知网、“万方数据—数字化期刊群”、中文科技期刊数据库、《中国核心期刊(遴选)数据库》、《中国期刊网》、中国期刊全文数据库(CJFD)、美国《化学文摘》、《乌利希期刊指南》及其系列数据库产品中以数字化方式复制、汇编、发行、信息网络传播本刊全文。以上杂志社著作权使用费与本刊稿酬一并支付。作者向本刊提交文章发表的行为即视为同意本刊上述声明。

Contents

— 基础研究

芭蕉芋淀粉热力学特性和体外消化性的研究

..... 付婧超,李晚磊,王玉娟,李丹(1)

柠檬酸酯化对原淀粉和预糊化淀粉性能的影响 周中凯,杨蕊,申晓钰(5)

肉苁蓉超声真空干燥的动力学研究 巩鹏飞,赵庆生,赵兵(10)

不同地区黑木耳多酚提取及抗氧化活性的研究

..... 苏伟,简素平,陈钢,于化泓,黄立山(14)

DPPH法测定茄叶斑鸠菊不同极性部位的抗氧化活性

..... 史资,陈新,刘梁(19)

不同季节翠玉品种3大茶类生化成分及抗氧化活性研究

..... 潘顺顺,赖幸菲,孙伶俐,黎秋华,向丽敏,孙世利(22)

香青菜不同溶剂提取物抗氧化活性研究

..... 王罗玲,沈雪林,李亚峰,陈春许,史泰龙,王桃云(28)

即食型乳酸菌菌粉改善肠道健康的研究

..... 冯丽莉,王华,王世杰,李兴峰,朱宏(34)

黑枸杞不同溶剂提取物抗氧化活性

..... 崔施展,谢晓亮,贾东升,李荣乔,温春秀,刘灵娣,韩进现(38)

葡萄糖对提取过程中大豆分离蛋白性质的影响 王天宇(41)

— 分离提取

甘蔗汁多酚氧化酶的提取研究 林波,郑凤锦,方晓纯,孙健,陈赶林(46)

响应面法优化巴旦木总黄酮提取工艺研究 梁鹏举,姜建辉,陈敏(50)

响应面法优化竹豆淀粉提取工艺 康欣月,王立梅,齐斌(55)

贝母粗多糖的4种类型树脂纯化

..... 张华,冉黄桥,杨能,颜复林,王亚坪,周浓(61)

响应面法优化金柚核中类柠檬苦素的提取工艺

..... 张声源,邹浩元,杨宇辉,周铭,陈一村,罗铝铿,李春泉,聂华(65)

响应面法优化提取竹屑多糖的工艺研究 许子竞,舒群威,罗树常(70)

龙眼壳黄酮的纯化工艺研究 王俊,韩淑琴,李志锐,吕平(74)

响应面法优化枸杞水溶性蛋白提取工艺

..... 于士婷,尹翌秋,孙天霞,张丽轩,王敏,赵大庆,王思明(79)

酶-微波联用法提取枸杞总黄酮 孙昊,牛红军,王芄(85)

超声波提取野玫瑰色素及体外抗氧化性分析 石秀花(90)

微波辅助法提取枇杷叶多糖的工艺研究 周芳,吴建丽,郝红英,张强(95)

— 研发与工艺

木犀草素分子印迹聚合物的制备及吸附性能研究

..... 仝海娟,左卫元,史兵方,陈盛余,李媚(98)

3种粗杂粮混合粉馒头最佳工艺配方的研究

..... 魏春红,郭道博,包智颖,宋雪建,贾建,周亚楠,李志江,翟爱华,曹龙奎(103)

决明子枸杞金银花复合饮料的研制 孙军涛,肖付刚,王思琦(108)

红萝卜西红柿复合蔬菜汁饮料的加工工艺研究

..... 侯小歌,赖颖,胡炳义,田丰收,徐志刚,王克广(112)

超声波和微波处理对缩短红葡萄酒陈酿期的对比

..... 崔艳,吕文,付荣霞,黄宗海(118)

生物酶法提取黄秋葵果实黄酮工艺优化研究 王维婷,曹宏杰,郭淑,程安玮,刘超,孙金月(122)

银耳红枣山楂复合果酱的研制 刘长姣,于果,陈宇飞,孟宪梅(127)

基于粉末直接压片技术开发多肽螯合钙片 张玮,郭耀华,周昱恒,马俪珍(131)

猕猴桃全果发酵干酒的澄清技术及稳定性研究 徐洲,朱文优,尹礼国,张超,魏琴(137)

姜味天使蛋糕的研发 黄武营,范青娜,彭珩,陈蔚辉(142)

多指标综合评分法优选参颗粒制备工艺 王莲,肖继椿,田焱,王岚,杨博涵,张荣泉,任倩倩(145)

羊肚菌发酵豆渣生产多糖及其功能性的研究 姚珩,朱慧,陈野,李书红(149)

咖啡浓缩液常温化保存研究 黄大芬,熊文惠,刘子圆(153)

— 标准与检测

肉及肉制品中牦牛源性成分的PCR鉴别 段庆梓,尚柯,张彪,张玉,王巍,梁恒兴(157)

直接法测定大米中的汞含量 马晓凤,陆源(161)

高效液相色谱法检测运动食品中的纳他霉素 王亚君(164)

— 生物工程

一株纤维素高产菌株的鉴定及发酵条件优化 葛含静,杨苗苗(168)

葡萄糖、乳酸钠对丙酸杆菌生长的影响 郑丽雪,郭晨,刘荟,王立梅,齐斌(172)

黑皮鸡枞菌固体培养基的优化 徐兵,张玉琴,冀宏(175)

— 营养保健

刺五加、枸杞子配伍对糖尿病模型小鼠降血糖作用的研究 李晶,魏健(179)

葡萄籽原花青素提取物对糖尿病小鼠的保护作用 王芳,王俊,胡博,任美萍(183)

— 质量安全

11种蔬菜中亚硝酸盐含量稳定性研究 张遼,姚晓瑜,王昌钊,王文瑞,付骋宇,乔冠华(188)

— 专题论述

超声波辅助提取类胡萝卜素研究进展 金思,马空军(192)

诱变育种方法在霉菌中的应用 熊进,黄魁英,曹丁,甘祥武,陈琼(198)

茶叶功能食品的开发现状及发展趋势 廖璐(202)

荔枝速冻保鲜技术研究进展 伍志权,李唯正,何鑫平,方孝贤,陈汉明(206)

食物中食源性病原菌检测技术研究进展 周威,胡梁斌,李红波,张浩,莫海珍(213)

国内外对膳食反式脂肪酸的研究概况 王邱(217)

食品中农、兽药最大残留限量检测方法的选用 袁晓鹰,宋卫得,惠希东,张永春,肖忠玉,李兴业,李健(222)

广告

天津市利民调料有限公司 封面、封底

亚洲生鲜配送展 封二

2017 第二十一届中国烘焙展览会 封三

补白

四讲四有 18, 54, 107, 141

四个意识 33, 84, 201

社会主义核心价值观 37, 102

欢迎订阅 2017 年《食品研究与开发》 49, 60, 136, 187

Periodical Name:

Food Research And Development

Organization in Charge:

Tianjin Food Group Co., Ltd.

Sponsored by:

Tianjin Food Research Institute Co., Ltd.,
Tianjin Food Industry Productivity
Promotion Center

Chief Editor: ZHAO Zhi-guang

Managing Editor: WANG Qi

Edited&Published by:

Editorial Department of *Food Research
And Development* Journal

Distributed by:

Editorial Department of *Food Research
And Development* Journal

Publication Date:

The 10th, 20th of Every Month

Address:

No. 9 Keji Road, Tianjin Jinghai
Economic Development Area(South
District), Tianjin, China

Postcode: 301609

Tel/Fax: +86 22 59525671

Website:

http://www.tjfood.com.cn

E-mail: tjfood@vip.163.com

Domestic Standard Serial Number:

ISSN 1005-6521

CN 12-1231/TS

Distributed Range:

Domestic and Oversea

Domestic Distributed by:

Domestic Post Bureau or Editorial
Department of *Food Research And
Development* Journal

Issue Code:6-197

Oversea Distributed by:

China International Book Trading
Corporation

Oversea Code:M8089

Advertising Licence Code:

1201044000116

Printed by:

China(Tianjin)Railway Materials
Printing Co.,Ltd.

Printed Address:

No.2, Shi Si Jing Lu, Hedong Dist.,
Tianjin, China

Domestic Price: RMB 30 per Issue

Oversea Price: US \$ 18 per Issue

FOOD RESEARCH AND DEVELOPMENT

Semimonthly(Sum 310) Vol. 38, No. 9. May 2017. First Published in 1980

Contents

Basic Studies

- Study on Thermodynamic Properties and *in vitro* Digestion of Canna Starch
..... FU Jing-chao, et al (1)
- Effect of Citric Acid Esterification on the Properties of the Raw Starch and Pre-paste
Starch ZHOU Zhong-kai, et al (5)
- Study on Ultrasonic-Vacuum Drying Dynamics of *Cistanche deserticola* Slices
..... GONG Peng-fei, et al (10)
- Extraction and Antioxidant Activity of Polyphenols from *Auricularia auricular* from
Different Regions SU Wei, et al (14)
- Antioxidant Capacity of Different Polar Parts from the *Vernonia solanifolia* Benth by
DPPH Method SHI Zi, et al (19)
- Research on the Chemical Components and the Antioxidant Activities of Cuiyu Green
Tea, Oolong Tea and Black Tea in Spring, Summer and Autumn
..... PAN Shun-shun, et al (22)
- Study on the Antioxidant Activity of Different Extracts from *Brassica chinensis* L.
..... WANG Luo-ling, et al (28)
- The Study of the Improvement of Intestinal Health by Instant Type *Lactobacillus*
Powder FENG Li-li, et al (34)
- Antioxidant Activity of Extracts from Different Solvents of Black Wolfberry
..... CUI Shi-zhan, et al (38)
- Effect of the Addition of Glucose on the Properties of Soybean Protein Isolate during
Extraction WANG Tian-yu (41)

Separation and Extraction

- The Extraction of Polyphenol Oxidase from Sugarcane Juice
..... LIN Bo, et al (46)
- Optimization of Extraction Technique of Total Flavonoids from *Amygdalus communis*
L. Seed Kernel via Response Surface Methodology
..... LIANG Peng-ju, et al (50)
- Optimization of Extraction Technology of Starch from Bamboo Bean by Response
Surface Methodology KANG Xin-yue, et al (55)
- Crude Polysaccharide in *Fritillaria* Purified by Four Types of Resin
..... ZHANG Hua, et al (61)
- Optimization of Extraction Process for Limonins from Gold Pomelo Seeds by Response
Surface Methodology ZHANG Sheng-Yuan, et al (65)
- Optimization of the Extraction Technique of Bamboo Chip Polysaccharide by Response
Surface Methodology XU Zi-jing, et al (70)
- Study on Purification of Longan Shell Flavonoids
..... WANG Jun, et al (74)
- Optimization of Water-soluble Protein Extraction Technology of Wolfberry by
Response Surface Methodology YU Shi-ting, et al (79)
- Study on Extraction of Total Flavonoids in *Lycium barbarum* L. with the Enzyme-
microwave Extraction Method SUN Hao, et al (85)

- Ultrasonic Extraction of Wild Rose Pigment and *in vitro* Antioxidant Activity Analysis SHI Xiu-hua (90)
 Study on the Extraction Technology of Polysaccharides from Loquat Leaves by Microwave ZHOU Fang, et al (95)

Research and Process

- The Study on Prepared of Luteolin Molecularly Imprinted Polymers and Its Adsorption Performance TONG Hai-juan, et al (98)
 Study of Three Kinds of Coarse Powder Steamed Buns Optimum Formula WEI Chun-hong, et al (103)
 Development of A Composite Beverage of Cassia Seed, Wolfberry and Honeysuckle SUN Jun-tao, et al (108)
 Study on Processing Technology of Compound Vegetable Beverage Made from Red Radish and Tomato HOU Xiao-ge, et al (112)
 Comparison of Ultrasound and Microwave Treatment on Shortening Aging on Lees of Red Wine CUI Yan, et al (118)
 Optimization of Bio-enzyme Method for Flavones Extraction from Okra Fruit WANG Wei-ting, et al (122)
 Development on Compound Jam of *Jujube* Tremella and Haw LIU Chang-jiao, et al (127)
 Manufacture of Calcium Peptide Chelate Pellets by Direct All-powder Compression Method ZHANG Wei, et al (131)
 Study on the Clarification Technology and Stability of Kiwi Dry Wine through Whole Fruit Fermentation XU Zhou, et al (137)
 Study on the Processing Technology of Ginger-angel Cake HUANG Wu-ying, et al (142)
 Optimization of the Preparation Technology of Jingshen Granules with the Multiple Guidelines Grading Method WANG Lian, et al (145)
 Utilization of Soybean Curd Residue for Polysaccharides Production by *Morchella esculenta* and Evaluation of the Functional Properties YAO Heng, et al (149)
 Study on the Preservation of Coffee Concentrate in Room Temperature HUANG Da-su, et al (153)

Standard and Detection

- PCR Identification of Yak in Meat and Meat Products DUAN Qing-zi, et al (157)
 Determination of Mercury in Rice by Direct Method MA Xiao-feng, et al (161)
 Determination of Natamycin in Sports Food by HPLC WANG Ya-jun (164)

Bioengineering

- Identification and Fermentation Conditions Optimizing of A High-yield Bacterial Cellulose-producing Strain GE Han-jing, et al (168)
 Effects of Sodium Lactate and Glucose on the Growth of *Propionibacterium freudenreichii* CS1420 ZHENG Li-xue, et al (172)
 The Optimization of Solid Medium of the *Termitomyces albuminosus* XU Bing, et al (175)

Nutrition and Health

- Effect of Compatibility of *Acanthopanax senticosus* and Chinese Wolfberry Fruit on Reducing Blood Sugar in Diabetic Model Mice LI Jing, et al (179)
 Protective Effect of Grape Seed Proanthocyanidin Extract on Diabetic Mice Induced by Streptozotocin WANG Fang, et al (183)

Quality Safety

- Study on Stability of the Nitrite Content in 11 Kinds of Vegetables ZHANG Lin, et al (188)

Special Topic Discussion

- Research Progress in Ultrasound-Assisted Extraction of Carotenoids JIN Si, et al (192)
 The Application of Mutation Breeding Method in the Mould XIONG Jin, et al (198)
 The Development Status and Trend of Tea Functional Food LIAO Jun (202)
 Research Advances in Quick-freezing Preservation Technique of Litchi WU Zhi-quan, et al (206)
 Advances in Detection of Foodborne Pathogens in Food ZHOU Wei, et al (213)
 The Domestic and Foreign Research Situation of Dietary Trans Fatty Acid WANG Qiu (217)
 The Selection and Application of Test Method for the Maximum Residue Limits of Pesticides and Veterinary Drugs in Food YUAN Xiao-ying, et al (222)