



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

《食品研究与开发》

2015年21期(半月刊)

主 管:天津二商集团有限公司

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:赵丽

副 主 编:蔡跃华

编辑部主任:王 琦

编辑部副主任:赵 义 佟永薇

广告部:陈 闯

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

网 址:<http://www.tjfrad.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:20元/册

国外定价:15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。

目 次

2015年11月 第36卷 第21期 总第274期

■ 基础研究

- 薏苡茎、叶提取液对肿瘤细胞增殖的抑制作用
..... 朱晓莹,林瑶,黄锁义,余珊(1)
- 微波解冻对芒果品质的影响 彭郁,赵金红,倪元颖(4)
- 秋刀鱼-20℃、-30℃和-50℃冻藏过程中品质变化
..... 王凤玉,曹荣,赵玲,任丹丹,刘淇,刘玉川(7)
- 桔梗多糖的抑菌性和抗氧化性研究
..... 杨晓杰,董亚楠,李娜,孙百良,王瑶,张晶(12)
- 不同澄清剂对苹果酒的影响 吴明霞,刘瑞芳,方小淋(15)
- 纳豆激酶对过度训练致大鼠胃溃疡干预效果的研究 张建伟(21)
- 超微桑叶粉对蛋糕保质期的影响及其机理研究 唐长波,刘臣(26)
- 超声波改性与MTGase诱导的大豆分离蛋白凝胶强度的研究
..... 田海娟,王蕾,张智宇(29)
- 富硒茶树菇的硒提取工艺及抗疲劳效果研究 程兆宇,房磊(33)

■ 分离提取

- 盐生植物翅碱蓬黄酮类物质及其抗氧化活性研究
..... 李岩,张亚卓,郭璐,王宇,王向红(38)
- 白术多糖的提取及其抗氧化活性的研究 吴铭,韩丹,郭立泉(42)
- 雪莲果叶黄酮的纯化工艺 陈红惠,刘芳,沈清清(45)
- 响应面法优化茶籽黄酮提取工艺条件 刘华鼎,李琼,叶勇(50)
- 紫菜多酚的超声波辅助提取工艺及其抗氧化作用
..... 蔡建秀,曾炜,陈姍龙,黄桂林(54)
- 木瓜蛋白酶对白茶浸提液中茶多酚含量的影响 赵文净,刘祖锋(60)
- 日照绿茶中 α -淀粉酶抑制剂提取工艺的研究
..... 王岩,王伟,薄力影,郭怡璠,裴世春,李欢,郑永杰(63)
- 均匀设计法优选仙茅多糖提取工艺的研究
..... 杜永华,蒲忠慧,魏琴,尹礼国,张萍,徐莉,张琪(66)
- 微波辐射提取工艺对茶色素提取率的影响研究 杜苏萌,白帅帅,汪敏(69)
- 水蜡果实色素的提取及色素性质的研究 余蕾(72)
- 西瓜番茄红素的超声波辅助提取研究 吴秋波(75)
- 黄芪粗多糖提取工艺的优化 郭会青,于俊美,田勤(78)

■ 食品研发

- 元蘑谷物膨化食品的最佳配方研究
..... 孔祥辉,张秋雪,王笑庸,韩冰,张介驰(81)
- 龙葵果醋饮料的研制 朱畅,李伟(86)
- 小米营养面包的研制 赵旭,马兰,张家成,鲍欢,孙小惠,陈凤莲(90)

■ 工艺技术

- 牡蛎酶解液的脱腥工艺研究 刘艳,段振华,蔡彦,胡冰洋(95)
- 四川小吃酸辣粉的加工工艺及优化研究 罗文(100)

荔枝粉的喷雾干燥工艺优化	海金萍,吴豪迪,徐国祥,张钟(105)
佛手酥加工工艺研究	陈跃文,顾振宇,刘辉,陈晶(109)
响应面法优化野生红心果酒发酵工艺条件	李敏杰,熊亚,韩洪波(114)
脂肪酶固定化工艺优化及其酶学性质研究	王华,王莹,詹长娟,王翼,徐伟,陈海燕(118)
利用鸭蛋壳生产乳酸钙的工艺研究	孟陆丽,程谦伟,许金蓉(123)
山矾豆腐的加工工艺研究	郑明静,周美龄,刘华丰,苏晓芳,曾绍校(128)

■ 检测分析

近红外光谱技术快速检测猪肉糜中的掺杂鸭肉	蒋祎丽,吴晓宗,郝莉花,张丽华,胡颖喆,纵伟(133)
气相色谱法检测蔬菜中7种有机磷农药残留	郝艳丽,葛红娟,王长文,樊丽花,刘正阳,马洪波,宋春梅(136)
化学振荡法测定绿茶中茶多酚的含量	赖红伟,曹宏梅,王宇卓,杜鹃,蒋金鑫,姜涛,陶然,董顺福(139)
酶法测定黄芪含片中黄芪多糖的研究	崔施展,贾东升,谢晓亮,温春秀,刘灵娣(143)
白酒挥发成分测定的研究	朱克永,胡继红,方燕(146)
气相-内标法测定白兰地中甲醇、乙酸乙酯、糠醛和高级醇	莫燕霞,殷居易,顾晓俊,陈梅珍,何卫敏,吴维儿(150)
脐橙和蜜桔农药残留调查及风险评估	吕蓉(153)

■ 生物工程

虎皮香菇漆酶的发酵优化	孙瑞雪,杨萍,刘琦,李晓辉,姜文侠(156)
灵芝酸发酵条件优化	祝铁钢,孙金旭,朱会霞,葛晓楠,何新航,张宇豪(161)
氮源种类及浓度对青梅果酒发酵性能的影响	张超,王玉霞,胡小英(164)
椰纤果生产中椰子水自然发酵过程成分及微生物群落变化	杨一冲,李从发,邓健,刘龙祥,胡淇淞,毕继才,陈华美,章翠,刘四新(168)
以纤维素为原料发酵柠檬酸培养基的研究	孙科,周凤侠(172)

■ 营养保健

辣椒叶的营养保健成分及理化特性研究	雨田,时政(175)
-------------------------	------------

■ 贮藏保鲜

瑞士乳杆菌发酵乳在贮藏中的变化研究	张志强,程伟,杨清香(178)
-------------------------	-----------------

■ 专题论述

无面筋食品研究进展	王坤,路飞,孟燕楠,李哲,肖志刚(181)
富含 α -亚麻酸的功能性油脂及其微胶囊化研究进展	韩丽丽,侯占群,文剑,吴逸民,钱英燕,龚树立(185)
喷射蒸煮技术在植物蛋白加工中的应用研究进展	熊小辉,刘泽龙,张连慧(190)
角鲨烯的来源及其制备方法研究进展	王宝琴,任丽丽(193)
粮食发芽富集GABA及食品开发研究进展	马先红,刘景圣,陈翔宇(198)

作者论坛

气相-内标标准曲线法同时测定白兰地中甲醇、乙酸乙酯、糠醛和高级醇	插页 3
--	------

广告

天津海河乳业有限公司	封面
广州市图玛化工有限公司	封二
天津市质量监督检验站第六十九站	封三
天津市利民调料有限公司	封底

补白

互登征订启事	85
.....	来稿要求及注意事项163,197

Periodical Name:

Food Research And Development

Organization in Charge:

Tianjin Second Commercial Group Co., Ltd.

Sponsored by:

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

Chief Editor: ZHAO Li

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 20 per Issue

Oversea Price: US \$ 15 per Issue

FOOD RESEARCH AND DEVELOPMENT

Semimonthly(Sum 274) Vol. 36, No. 21. Nov 2015. First Published in 1980

Contents

Basic Studies

Inhibitory Effects of Adlay Extracts from Stems and Leaves on Tumor Cells
..... ZHU Xiao-ying, et al (1)

Effects of Microwave Thawing on Quality of Mango PENG Yu, et al (4)

Effect of Temperature on the Quality of *Cololabis saira* during -20 °C, 30 °C and
50 °C Frozen Storage WANG Feng-yu, et al (7)

Antimicrobial and Antioxidation Activities of *Platycodon grandiflorum* Polysaccha-
ride YANG Xiao-jie, et al (12)

Effects of Different Clarifying Agents of Apple Wine
..... WU Ming-xia, et al (15)

A Research of Nattokinase on Induced by Overtraining Rats' Gastric Ulcer Preven-
tion ZHANG Jian-wei (21)

Influence and Mechanism of Ultramicrofine Mulberry Powder on Cake Shelf Life
..... TANG Chang-bo, et al (26)

Research on the Gel Strength of Soybean Protein Isolated by Ultrasonic Modifica-
tion and MTGase Induced TIAN Hai-juan, et al (29)

Study on the Extraction Technology of Se-enriched Agrocybe Cylindracea and An-
ti-fatigue Effect CHENG Zhao-yu, et al (33)

Separation and Extraction

Study on Extraction and Antioxidant Activity of Flavonoids from Heteroptera Saline
Seepweed LI Yan, et al (38)

Ultrasonic-assisted Extraction and Antioxidant Activities of Polysaccharides from
Atractylodes macrocephala WU Ming, et al (42)

Purification of Total Flavonoids from Yacon Leave
..... CHEN Hong-hui, et al (45)

Optimization of Extraction Technology of Total Flavonoids of Tea Seed by Response
Surface Methodology LIU Hua-nai, et al (50)

Study on Ultrasonic Assisted Extraction Technology of Polyphenols in Laver and
the Oxidation Effect of Flavonoids CAI Jian-xiu, et al (54)

Effects of Papain on the Extractive Content of White Tea Polyphenols
..... ZHAO Wen-jing, et al (60)

Extraction of Alpha Amylase Inhibitors from Rizhao Green Tea
..... WANG Yan, et al (63)

Study on Uniform Design Optimization of Extraction Processing of *Curculigo or-
chioides* Gaertn Polysaccharides DU Yong-hua, et al (66)

The Effects of Microwave Radiation Extraction on Productive Rate of Tea Pigment
..... DU Su-meng, et al (69)

Study on the Properties and Extraction of Pigment from *Ligustrum obtusifoliu* Sieb.
et Zucc YU Lei (72)

Extraction of Lycopene in Watermelon by Ultrasonic WU Qiu-bo (75)

Optimization of the Extraction Technology of Astragalus Crude Polysaccharide
..... GUO Hui-qing, et al (78)

Food Research and Development

- The Best Formula Research on *Hohenbuehelia serotina* Cereal Puffed Food KONG Xiang-hui, et al (81)
Development of *Solanum Nigrum* Fruit Vinegar Beverage ZHU Chang, et al (86)
Research on the Preparation of Nutritional Millet Breads ZHAO Xu, et al (90)

Process Technology

- Study on the Deodorization Process of Oyster Enzymatic Hydrolysate LIU Yan, et al (95)
Study on Optimization and Processing Technology of Hot and Sour Vermicelli of Sichuan LUO Wen (100)
Optimization of Spray Drying Processing Technology of Litchi Powder HAI Jin-ping, et al (105)
Study on the Processing Technique of Finger Citron Cake CHEN Yue-wen, et al (109)
Optimization of Wild Psidium Guajava Liquor Fermentation Technological Conditions via Response Surface Methodology
..... LI Min-jie, et al (114)
Optimization of Immobilization of Lipase and Study on Its Properties WANG Hua, et al (118)
Optimization of Making Calcium Lactate form Duck Eggshell MENG Lu-li, et al (123)
Study on Processing Technology of *Symplocos Sumuntia* Tofu ZHENG Ming-jing, et al (128)

Detection and Analysis

- Rapidly Qualitative Discrimination of Minced Duck in Ground Pork by Near Infrared Reflectance Spectroscopy
..... JIANG Yi-li, et al (133)
Determination of Seven Organophosphorus Pesticide Residues in Vegetables by Gas Chromatography
..... XI Yan-li, et al (136)
Determination of Tea Polyphenols in Green Tea by Using Chemical Oscillating Method LAI Hong-wei, et al (139)
Determination of Astragalus Polysaccharide of Astragalus Tablet by Enzyme Method CUI Shi-zhan, et al (143)
Research Progress of Volatile Components in White Spirit ZHU Ke-yong, et al (146)
Development of A GC Internal Standard Method for Simultaneous Determination of Methyl Alcohol, Ethyl Acetate, Fur-
fural and Higher Alcohols in Brandy MO Yan-xia, et al (150)
Pesticide Residue Investigation and Risk Assessment of Navel Orange and Orange LÜ Rong (153)

Bioengineering

- Fermentation Optimization of Laccase by *Lentinustigrinus* SUN Rui-xue, et al (156)
The Fermentation Condition Optimization of Ganoderic Acids ZHU Tie-gang, et al (161)
Effects of Different Nitrogen Sources and Concentrations on the Fermentation Property of Green Plum Fruit Wine
..... ZHANG Chao, et al (164)
Changes of Chemical Composition and Microbial Community during Naturally Fermented Coconut Water Used in Nata de
coco Production YANG Yi-chong, et al (168)
Study on the Fermentation of Citric Acid with Cellulose as Raw Material SUN Ke, et al (172)

Nutrition and Health

- Analysis of Nutrition and Healthy Components and Physical and Chemical Properties of Chilli Leaves
..... YU Tian, et al (175)

Storage and Preservation

- Study on Properties of *Lactobacillus Helveticus* Fermented Milk in Storage ZHANG Zhi-qiang, et al (178)

Special Topic Discussion

- Recent Advances for the Technology of Gluten-free Food WANG Kun, et al (181)
Recent Progress on Functional Oils Rich in Alpha-Linoleic Acid and Its Microencapsulation
..... HAN Li-li, et al (185)
Recent Advances in the Application of Jet Cooking Technology in Plant Proteins Processing
..... XIONG Xiao-hui, et al (190)
Research Progress on Sources and Preparation Method of Squalene WANG Bao-qin, et al (193)
Research Progress on Enrichment of γ -Aminobutyric Acid in Germinated Grain and Function Food
..... MA Xian-hong, et al (198)