《中文核心期刊要目总览》收录 Ei Compendex(核心版)收录 百种中国杰出学术期刊 RCCSE中国权威学术期刊









ISSN 1002-6819 CN 11-2047/S **CODEN NGOXEO** www.tcsae.org



NONGYE GONGCHENG XUEBAO

TRANSACTIONS OF THE CHINESE SOCIETY OF AGRICULTURAL ENGINEERING

2020年 第36卷VOL.36



农业工程学报

2020年12月 第24期(总第400期) 第36卷(卷终)

目 次

• 农业装备工程与机械化 •

氮肥一次性基施对不同机直播水稻产量和品质的影响
油菜脱粒过程中茎秆碰撞破碎的试验研究詹广超,马丽娜,黄小毛,宗望远,田 伟,林子欣(11)
立式有机肥螺旋撒肥装置设计与试验 吕金庆,孙玉凯,李季成,李紫辉,刘中原(19)
双腔气力式水稻精量水田直播机设计与试验 邢 赫,张国忠,韩宇航,高 原,查显涛(29)
考虑攻角范围的垂直轴风力机叶片翼型优化设计 汪 泉, 甘 笛, 杨书益, 王环均 (38)
冰草种子物性参数测定与离散元仿真参数标定 侯占峰, 戴念祖, 陈 智, 仇 义, 张曦文(46)
・农业水土工程・
灌水频率和施肥量对三七有效成分积累与发病率的影响
唐建楷,韩焕豪,刘 冰,杨启良,刘小刚,刘艳伟(55)
¹³⁷ Cs 和 ²¹⁰ Pbex 双核素示踪"三北"防护林区退耕前后坡地土壤侵蚀变化
王俊杰,苏正安,周 涛,王丽娟,王晓艺,刘翊涵,伍 佐(64)
陕北黄土区退耕还林(草)地土壤质量特征及其对降水的响应
张智勇,艾 宁,刘广全,刘长海,宗巧鱼,刘 姣,郝宝宝(73)
培肥措施对复垦土壤微生物碳氮代谢功能多样性的影响
王宇峰,孟会生,李廷亮,谢钧宇,栗 丽,李丽娜,黄晓磊(81)
土性参数波动范围的计算方法及影响因素"谭晓慧,杜林枫,费锁柱,侯晓亮,马海春(91)
考虑肥料溶解的压差施肥罐出口肥液浓度计算方法 胡昕宇,严海军,陈 鑫 (99)
滴灌技术参数对南疆棉花生长和土壤水盐的影响
张迎春,张富仓,范军亮,侯翔皓,王海东,刘 翔,何平如,薛占琪(107)
添加砾石对崩岗岩土无侧限抗压强度的影响 杨彩迪、牛玉华、张晓明、卫 杰、左知灵、张睿钰(118)
水泥固化砒砂岩强度与孔隙结构演变的灰熵关联分析 刘 鑫 ,申向东,薛慧君,刘 倩,耿凯强(125)
碳点合成及用于检测汞离子的碳点荧光传感器研究进展
•农业信息与电气技术 •
基于级联卷积神经网络的番茄花期识别检测方法此春江,文朝武,林 森,郭文忠,龙洁花(143)
采用卷积神经网络构建西北太平洋柔鱼渔场预报模型
朱浩朋,伍玉梅,唐峰华,靳少非,裴凯洋,崔雪森(153)
采用 3D 几何特征的草莓叶片含水率监测与试验验证 ························

基于病害高发期气象因子的三七病害发生率预测	스는 나라	b 3 ;	à l	7 t n¥	al I mil	北边古	ங க	(170)
基于深度学习的作物病虫害可视化知识图谱构建								
	周爱莲,	谢能位	付,当	と 晓贺,	汪汇涓,	,李小雨,	陈桂鹏	(177)
•农业生物环境与能源工程 •								
不同粮食作物光能利用效率研究 刘 涛,杨	晓光,高:	继卿,	何	斌,白	帆,张	(方亮,刘	志娟,王	.晓煜,
		孙	爽,フ	万能涵,	陈 曦	,黄秋婉,	柳晓庆	(186)
碳氮比对鸡粪堆肥腐熟度和臭气排放的影响								
	亓传仁,	李国生	学,日	E国英,	刘 燕	, 孙少泽,	袁 京	(194)
不同内源重金属生物炭对 Cu 和 Cd 吸附及其对老化作用	的响应							
崔红标,	王昱茗,	叶回着	春 ,引	长雪,	董婷婷:	,易齐涛,	张世文	(203)
稻壳炭制备工艺参数对吸附性能的影响								
	刘晓刚,	赵	玉,詹	华 ,	王 虹	,李翠清,	宋永吉	(211)
秸秆捆烧清洁供暖技术评价在丽丽,赵立欣,	,姚宗路	,郝先	荣,	贾吉秀	,赵亚男	7, 刘杰,	杨武英	(218)
直接种间电子传递对缓解厌氧消化抑制效应的研究进展								
	·司哺春,	刘凯引	蛋 , 杉	木新宇 ,	刘志丹,	,杨改秀,	张源辉	(227)
• 土地保障与生态安全 •								
重大线性工程建设下山区乡村聚落空间演变			Э	E 健,	王 健,	,吴文良,	刘奎	(236)
农村宅基地整治潜力的空间显式测算与模拟			刍	阝 琳,	赵 翔,	, 江 平,	孔雪松	(247)
采用全卷积神经网络与 Stacking 算法的湿地分类方法 …					张 猛,	, 林 辉,	龙湘仁	(257)
基于 SPAN 与 NDVI 的全极化 SAR 数据喀斯特地区土地	2类型划分	· · · · · ·	j	\$彩霞,	胡 娟	, 欧卫华,	曹永锋	(265)
•农产品加工工程•								
便携式茶鲜叶品质光谱检测装置研制								
王 凡,赵春江,	徐 波,	徐	圣, 李	₽振海,	杨海滨	, 段丹丹,	杨贵军	(273)
热风干燥过程相对湿度对香菇品质的影响								
李星仪,张 悦,	谢永康,	于贤力	龙,爿	 夫广飞,	高振江,	,肖红伟,	刘嫣红	(281)
盐胁迫下玉米种子萌发过程低场核磁共振研究			······································	舌 霞,	白雨禾,	, 王昭懿,	宋 平	(292)
蜂蜜接合酵母及后发酵对黑糯米酒风味的影响								
费永涛,	姜弘佳,	胡方」	正,	5立影,	刘功良:	,白卫东,	肖更生	(301)
欧姆加热对米饭蒸煮过程能耗及其品质的影响		·丁辛,	亭,糹	焦秀芳 ,	李树旺,	,王绍金,	李星恕	(310)

Transactions

of the Chinese Society of Agricultural Engineering Vol.36 No.24 (Total No.400) Dec. 2020 (End-of-Volume) CONTENTS

• Agricultural Equipment Engineering and Mechanization •

Effects of one-time nitrogen basal application on the yield and quality of different direct-seeding rice crops by machine
Gao Hui, Zhang Hongcheng (1)
Experimental study on impact crushing of rapeseed stalks during threshing of oilseed rape
Zhan Guangchao, Ma Lina, Huang Xiaomao, Zong Wangyuan, Tian Wei, Lin Zixin (11)
Design and test of vertical spiral organic fertilizer spreading device
Lyu Jinqing, Sun Yukai, Li Jicheng, Li Zihui, Liu Zhongyuan (19)
Development and experiment of double cavity pneumatic rice precision direct seeder
Optimized design of H-VAWT blade airfoils profile considering range of angle of attack
Measurement and calibration of physical property parameters for Agropyron seeds in a discrete element simulation
• Soil and Water Engineering •
Effects of irrigation frequency and fertilization amount on active ingredient accumulation and morbidity of <i>Panax notoginseng</i>
······Tang Jiankai, Han Huanhao, Liu Bing, Yang Qiliang, Liu Xiaogang, Liu Yanwei (55)
¹³⁷ Cs and ²¹⁰ Pb _{ex} tracing of soil erosions on cultivated and reforested slope lands in Three North-Shelter Forest Region
······························· Wang Junije. Su Zhengan. Zhou Tao. Wang Lijuan. Wang Xiaovi. Liu Yihan. Wu Zuo (64)

Soil quality characteristics of forests and grasslands returned from farmland and their responses to precipitation in the Loes
Region of Northern Shaanxi, China
Zhang Zhiyong, Ai Ning, Liu Guangquan, Liu Changhai, Zong Qiaoyu, Liu Jiao, Hao Baobao (73)
Effects of fertilization regime on the functional diversity of microbial carbon and nitrogen metabolism in reclaimed soil
Wang Yufeng, Meng Huisheng, Li Tingliang, Xie Junyu, Li Li, Li Lina, Huang Xiaolei (81)
Calculation method and influence factors for fluctuation scale of soil parameters
····· Tan Xiaohui, Du Linfeng, Fei Suozhu, Hou Xiaoliang, Ma Haichun (91)
Calculation method of fertilizer concentration at outlet based on differential pressure tank considering fertilizer dissolution
······································
Effects of drip irrigation technical parameters on cotton growth, soil moisture and salinity in Southern Xinjiang
···· Zhang Yingchun, Zhang Fucang, Fan Junliang, Hou Xianghao, Wang Haidong, Liu Xiang, He Pingru, Xue Zhanqi (107)
Effects of gravel addition on unconfined compressive strength of Benggang soil
Grey entropy analysis of strength and pore structure evolution of cement-solidified Pisha sandstone
Liu Xin, Shen Xiangdong, Xue Huijun, Liu Qian, Geng Kaiqiang (125)
Research progress of synthesis of carbon dots and fluorescent sensor based on carbon dots for mercury detection
·····Zhou Jun, Bi Xiaoya, Li Libo, You Tianyan (134)
• Agricultural Information and Electrical Technologies •
Tomato florescence recognition and detection method based on cascaded neural network
·····Zhao Chunjiang, Wen Chaowu, Lin Sen, Guo Wenzhong, Long Jiehua (143)
Construction of fishing ground forecast model of Ommastrephes bartramii using convolutional neural network in the
Northwest Pacific · · · · · Zhu Haopeng, Wu Yumei, Tang Fenghua, Jin Shaofei, Pei Kaiyang, Cui Xuesen (153)
Monitoring and experimental verification of strawberry leaf moisture content using 3D geometric features
·····Fu Kaijuan, Feng Quan, Yang Sen, Chen Baihong (161)

Prediction of Panax notoginseng incidence rate based on meteorological factors in the high disease incidence period
Xiong Kai, Yang Qiliang, Yang Chunxi, Liu Xiaogang, Han Huanhao, Zhou Ping (170)
Construction of visualization domain-specific knowledge graph of crop diseases and pests based on deep learning
• Agricultural Bioenvironmental and Energy Engineering •
Radiation use efficiency of different grain crops in Northeast China
Liu Tao, Yang Xiaoguang, Gao Jiqing, He Bin, Bai Fan, Zhang Fangliang, Liu Zhijuan, Wang Xiaoya
Sun Shuang, Wan Nenghan, Chen Xi, Huang Qiuwan, Liu Xiaoqing (186)
Effects of C/N ratio on maturity and odor emissions during chicken manure composting
Ma Ruonan, Li Danyang, Qi Chuanren, Li Guoxue, Wang Guoying, Liu Yan, Sun Shaoze, Yuan Jing (194)
Adsorption of Cu and Cd by biochars with various contents of endogenous heavy metals and their responses to aging
Effects of preparation process parameters of rice husk carbon on adsorption performance
Tian Yu, Liu Xiaogang, Zhao Yu, Zhan Hua, Wang Hong, Li Cuiqing, Song Yongji (211)
Technical evaluation of baled stover burning for clean heating
Research progress of the relief of anaerobic digestion inhibitions based on direct interspecies electron transfer
Si Buchun, Liu Kaiqiang, Lin Xinyu, Liu Zhidan, Yang Gaixiu, Zhang Yuanhui (227)
• Land Security and Ecological Safety •
Spatial evolution of rural settlement in mountainous areas under the major linear projects

Spatially explicit calculation and simulation of estimating housing land consolidation potential in rural areas	
	1 7)
Wetland classification method using fully convolutional neural network and Stacking algorithm	
	57)
Land type classification of full polarization SAR data using SPAN and NDVI in Karst Areas, China	
Su Caixia, Hu Juan, Ou Weihua, Cao Yongfeng (26	55)
• Agricultural Produce Processing Engineering •	
Development of a portable detection device for the quality of fresh tea leaves using spectral technology	
Wang Fan, Zhao Chunjiang, Xu Bo, Xu Ze, Li Zhenhai, Yang Haibin, Duan Dandan, Yang Guijun (27	73)
Effects of relative humidity on the exterior quality of shiitake mushrooms (Lentinus edodes) during hot air drying	
Li Xingyi, Zhang Yue, Xie Yongkang, Yu Xianlong, Zhu Guangfei, Gao Zhenjiang, Xiao Hongwei, Liu Yanhong	31)
Low-field nuclear magnetic resonance of maize seed germination process under salt stress	
······ Yue Xia, Bai Yuhe, Wang Zhaoyi, Song Ping (29) 2)
Effects of Zygosacharomyces mellis and post-fermentation on the flavor of black glutinous rice wine	
······Fei Yongtao, Jiang Hongjia, Hu Fangzheng, Peng Liying, Liu Gongliang, Bai Weidong, Xiao Gengsheng (30)1)
Effects of ohmic heating on the cooking process energy consumption and quality of cooked rice	
	10)