

中文核心期刊
中国科技核心期刊
中国农林核心期刊
RCCSE 中国权威学术期刊
《中国科学引文数据库》C 库期刊
《CAJ-CD 规范》执行优秀期刊
中国科协精品科技期刊工程项目

草地学报

CAODI XUEBAO

ACTA AGRESTIA SINICA

第 5 期

第 32 卷

2024 年 5 月

1991 年创刊(月刊)

主管:中国科学技术协会

主办:中国草学会

主 编:王 堃,邵新庆

编辑部主任:贾善刚

责任编辑:闵芝智,刘婷婷,
彭露茜

英文编辑:刘克思,张万军,
王克华

编 务:葛慧荣

编辑出版:《草地学报》编辑部

地址:北京海淀区圆明园西路 2 号
中国农业大学动科大楼 152 室

邮编:100193

电话/传真:(010)62733894

E-mail:cdxb@cau.edu.cn

网址:http://www.cdxb.org

印刷:北京科信印刷有限公司

国内总发行:北京报刊发行局

订阅:全国各地邮局(所)

国内邮发代号:80-135

国内每册定价:55.00 元

国外总发行:中国国际图书贸易
总公司

国外发行代号:MO1949

中国标准连续出版物号:

ISSN 1007-0435
CN 11-3362/S

基本参数:

CN11-3362/S * 1991 * b * A₁
* 354 * zh * P * 55.00 * 260
* 35 * 2024-05

目 次

研究论文

- 甘肃岷县红三叶病害及其对红三叶生长和品质的影响 郑荣春,南志标,段廷玉(1303)
- 生物炭施加垄沟集雨种植对水土流失及紫花苜蓿草产量的影响 朱进辉,赵武成,Erastus Mak-Mensah,等(1314)
- 新型苜蓿镰刀菌根腐病原菌 FIESC 分离及菌株生物学特性测定 索 欣,牛启尘,郭 铨,等(1327)
- 模拟降水对内蒙古短花针茅荒漠草原土壤酶活性的影响 任梓欢,王忠武,康 慧,等(1339)
- 苔藓结皮短期添加对青藏高原人工草地植被和土壤的影响 马录艳,孟宪超,王贵强,等(1348)
- 人工草地建植对三江源区土壤有机碳组分及酶活性的影响 杨才艳,杨 航,宋建超,等(1359)
- 紫花苜蓿 *M.JAR1* 基因克隆及表达分析 代 蕊,陈 崎,爽 爽,等(1370)
- 假俭草 *WRKY* 家族基因鉴定及其响应干旱胁迫表达分析 于元平,蒋宇佳,孙向一,等(1378)
- 青海草原毛虫 *IR* 基因的鉴定及组织表达分析 刘占玲,寇桂香,南彦斌,等(1392)
- 冬箭筈豌豆耐盐基因 *NHX1* 克隆及表达分析 姚 娜,云 岚,艾 芊,等(1401)
- 半灌木扩张草原土壤细菌群落特征及其影响因素 郭 倩,王 博,樊勇明,等(1410)
- 牦牛和藏羊放牧对青藏高原高寒草地植物群落氮库的影响 吕卫东,董全民,孙彩影,等(1420)
- 低温下紫花苜蓿叶片的光破坏防御作用 张 政,刘美君,王 捷,等(1429)
- 放牧强度对优势种群与植物群落地上现存量关系的影响 王梓晗,吕世杰,王忠武,等(1440)
- 长期降水变化和氮添加对青藏高原高寒草原物种多样性和生产力的影响 邓彤彤,周国英,肖元明,等(1448)
- 黑河源区不同植被类型土壤粒径分形特征研究 刁二龙,曹广超,刘 英,等(1459)
- 氮肥与复硝酚钠复配施用对紫花苜蓿生理特性及种子产量的影响 杨 静,隋晓青,王鑫尧,等(1471)
- 长期放牧对内蒙古荒漠草原土壤不同组分有机磷含量的影响 吴佳芯,张育涵,李邵宇,等(1479)
- 陇中温性荒漠 4 种草地型土壤有机碳组分及碳库活度变化特征 李娅丽,何国兴,柳小妮,等(1489)
- 基于无人机高光谱的内蒙古天然牧草氮磷钾含量的反演 亓慧敏,陈 昂,杨秀春(1500)
- 刈割对豆科和非豆科植物叶片内稳性及叶片土壤化学计量特征的影响 杜 艺,宋俊阳,张玉林,等(1513)
- 利用灰色关联度和隶属函数法评价 5 个“张杂谷”饲草谷子品种的营养价值 刘春阳,孙全文,赵月平,等(1522)
- 吉林西部草甸草原生产力和物种多样性特征研究——以 2022 年长岭县草原为例 兰理实,由成成,张 龙,等(1529)
- 混合草坪交播黑麦草对模拟践踏的响应 史顺心,施 思,杨 文,等(1538)
- 古尔班通古特沙漠土壤水分-地形-植被关系研究 张晓玉,张定海,宁 婷,等(1548)
- 不同放牧强度对荒漠草原草地微斑块特征的影响 屈志强,孙雪岩,杨子琼,等(1558)
- 乡土草草地建植对辽西北连作农田土壤的改良效果研究 丁子健,刘 文,李天泽,等(1572)
- ### 技术研发
- 光果柱花草转基因毛状根及其原生质体制备体系的建立 孙 昊,张建禹,罗丽娟,等(1583)
- 灌溉方式与磷素对紫花苜蓿生产性能和营养品质的影响 叶雨浓,余淑艳,王 星,等(1592)
- 添加复合乳酸菌和糖蜜对不同水分含量苜蓿青贮品质的影响 黑梦琴,曹正宇,王志远,等(1601)
- 乳酸菌和混合酸对苜蓿青贮品质、叶绿素及其降解酶的影响 孔德慧,靳思玉,曹 阳(1610)
- 衡阳市野生草本花卉资源评价体系的构建及应用 许凌云,杨满元,杨 宁(1619)
- 基于枯草指数的冬季草畜平衡动态评估方法 李 航,徐维新,黄坤琳,等(1629)
- 添加剂对紫花苜蓿和高丹草混合青贮品质及维生素含量的影响 胡梦洁,肖燕子,姜 超,等(1642)
- 燕麦镰刀菌 HY-041 可湿性粉剂的制备及除草研究 张 乐,李 欢,李 祥,等(1650)

欢迎投稿 欢迎订阅

《草地学报》是中国科协主管、中国草学会主办、中国农业大学承办的学术刊物,是了解草地科学前沿科技、创新成果和草业发展的重要窗口。刊登国内外草地科学研究及相关领域的新成果、新理论、新进展,以研究论文为主,兼发少量专稿、综述、简报和博士论文摘要,主要面向从事草地科学、草地生态、草地畜牧业和草坪业及相关领域的高校师生和科研院所、站的科研人员。稿件要求详见本刊《投稿须知》。

《草地学报》被国内外多家重要检索机构收录,入编北京大学图书馆和北京高校图书馆期刊工作研究会主持完成的《中文核心期刊要目总览》(2020 年版),2020 年复合影响因子为 2.238(据中信所 2021 版《中国科技期刊引证报告(核心版)》)。

本刊逢月末出版,国内外公开发售。国内邮发代号:80-135;国外代号:MO1949。每期定价 55 元,全年 660 元。若错过邮订时间,可直接向本刊编辑部订购(中国草学会会员订阅可优惠 30%)。

开户名:中国草学会 开户行:北京农商银行海淀新区支行农大分理处
账 号:0407030103000000056

ACTA AGRESTIA SINICA

No. 5, 2024

Vol. 32

Started in 1991 (Monthly)

Administration Agency

China Association for Science
and Technology

Sponsored by

Chinese Grassland Society
China Agricultural University,
Beijing 100193

Editor-in-Chief

WANG Kun, SHAO Xin-qing

Responsible Editor

MIN Zhi-zhi, LIU Ting-ting,
PENG Lu-xi

Edited by

Editorial Board of A. A. S.

Tel. / Fax: 010-62733894

E-mail: cdx@cau.edu.cn

Website: <http://www.cdx.org>

Printed by

Beijing Kexin
Printing Co., Ltd.

Distributed by

Beijing Bureau for Distribution
of Newspapers and Journals

Domestic

All Local Post Offices in China
(Periodical No. 80-135)

Foreign

China International Book Trading
Corporation (P. O. Box 399, Beijing,
China) (Code: MO1949)

CONTENTS

Diseases of Red Clover and Their Effects on the Growth and Quality of Red Clover in Min County, Gansu Province	ZHENG Rong-chun, NAN Zhi-biao, DUAN Ting-yu (1303)
Effects of Biochar Application and Ridge-furrow Rainwater Harvesting on Soil Erosion Control and Alfalfa Fodder Yield	ZHU Jin-hui, ZHAO Wu-cheng, ERASTUS Mak-Mensah, et al (1314)
Isolation of a Novel Alfalfa <i>Fusarium</i> Root Rot Pathogen FIESC and Characterization of Strain Biology	SUO Xin, NIU Qi-Chen, GUO Cheng, et al (1327)
Effect of Simulated Precipitation on Soil Enzyme Activity of <i>Stipa breviflora</i> Desert Steppe in Inner Mongolia	REN Zi-huan, WANG Zhong-wu, KANG hui, et al (1339)
Effects of Short-term Addition of Moss Crusts on Vegetation and Soil of Artificial Grassland in the Tibetan Plateau	MA Lu-hua, MENG Xian-chao, WANG Gui-qiang, et al (1348)
Effects of Artificial Grassland Establishment on Soil Organic Carbon Fractions and Enzyme Activities in Three-River Source Region	YANG Cai-yan, YANG Hang, SONG Jian-chao, et al (1359)
Cloning and Expression Analysis of <i>MsJARI</i> in <i>Medicago sativa</i>	DAI Rui, CHEN Qi, SHUANG Shuang, et al (1370)
Identification of the <i>WRKY</i> Family Genes and their Expression Analysis in Response to Drought Stress in Centipede-grass	YU Yuan-ping, JIANG Yu-jia, SUN Xiang-yi, et al (1378)
Identification and Expression Profiling of <i>Ionotropic receptors</i> Gene in <i>Gynaephora qinghaiensis</i> (Lepidoptera: Lymantriidae)	LIU Zhan-ling, KOU Gui-xiang, NAN Yan-bin, et al (1392)
Cloning and Expression Analysis of Salt-tolerant Gene <i>NHX1</i> in <i>Vicia villosa</i> Roth.	YAO Na, YUN Lan, AI Qian, et al (1401)
Characteristics and Influencing Factors of Soil Bacterial Communities in Subshrub Encroachment Grasslands	GUO Qian, WANG Bo, FAN Yong-ming, et al (1410)
Effects of Yak and Tibetan Sheep Grazing on Nitrogen Pool of Plant Communities of Alpine Grassland in the Qinghai Tibet Plateau	LYU Wei-dong, DONG Quan-min, SUN Cai-cai, et al (1420)
The Photoprotection Mechanism of Alfalfa Leaves under Low Temperature	ZHANG Zheng, LIU Mei-jun, WANG Jie, et al (1429)
The Influence of Grazing Intensity on the Relationship between the Standing Crops of Dominant Populations and Plant Community	WANG Zi-han, LYU Shi-jie, WANG Zhong-wu, et al (1440)
Effects of Long-term Precipitation Changes and Nitrogen Addition on Species Diversity and Productivity of Alpine Grasslands in the Qinghai Tibet Plateau	DENG Tong-tong, ZHOU Guo-ying, XIAO Yuan-ming, et al (1448)
Fractal Characteristics of Soil Particle Size on Different Vegetation Types in the Source Area of the Heihe River	DIAO Er-long, CAO Guang-chao, LIU Ying, et al (1459)
Effect of Combined Application of Nitrogen Fertiliser and Compound Nitrophenol Sodium on the Physiological Characteristics and Seed Yield of Alfalfa	YANG Jing, SUI Xiao-qing, WANG Xin-yao, et al (1471)
Effects of Long-Term Grazing on Different Fractions of Organic Phosphorus Content in Desert Grassland in Inner Mongolia	WU Jia-xin, ZHANG Yu-han, LI Shao-yu, et al (1479)
Variation Characteristics of Soil Organic Carbon Fraction and Carbon Pool Activity in Four Grassland Types in the Temperate Desert of Longzhong	LI Ya-li, HE Guo-xing, LIU Xiao-ni, et al (1489)
Inversion of Nitrogen, Phosphorus and Potassium Content in Natural Grassland in Inner Mongolia Based on UAV Hyperspectral Data	QI Hui-min, CHEN Ang, YANG Xiu-chun (1500)
Effects of Mowing on Leaf Internal Stability and Leaf and Soil Stoichiometric Characteristics of Legumes and Non-legumes	DU Yi, SONG Jiao-yang, ZHANG Yu-lin, et al (1513)
Evaluation of the Nutritional Value of Five millets (<i>Setaria italica</i> Beauv.) Varieties Using Grey Relational Analysis and Membership Function Method	LIU Chun-yang, SUN Quan-wen, ZHAO Yu-ping, et al (1522)
Characteristics of Productivity and Biodiversity of Meadow Grassland in Western Jilin Province—A Case Study of Grassland in Changling County in 2022	LAN Li-shi, YOU Cheng-cheng, ZHANG Long, et al (1529)
Response of Overseeding Ryegrass to Simulated Traffic Stress on Hybrid Turf	SHI Shun-xin, SHI Si, YANG Wen, et al (1538)
Study on the Relationship Between Soil Moisture, Topography and Vegetation in the Gurbantunggut Desert	ZHANG Xiao-yu, ZHANG Ding-hai, NING Ting, et al (1548)
Effects of Different Grazing Intensities on the Characteristics of Micro-patch of Desert Grassland Meadows	QU Zhi-qiang, SUN Xue-yan, YANG Zi-qiong, et al (1558)
Effect of Native Grasses Planting on Continuous Cropland Soil Properties in Northwest Liaoning	DING Zi-jian, LIU Wen, LI Tian-ze, et al (1572)
Development of Transgenic Hairy Root Induction and Protoplast Preparation Systems for <i>Stylosanthes leiocarpa</i>	SUN Hao, ZHANG Jian-yu, LUO Li-juan, et al (1583)
Effect of Irrigation Methods and Phosphorus on the Production Performance and Nutritional Quality of Alfalfa	YE Yu-nong, YU Shu-yan, WANG Xing, et al (1592)
Effects of Adding Compound Lactobacillus and Molasses on the Quality of Alfalfa Silage with Different Moisture Contents	HEI Meng-qin, CAO Zheng-yu, WANG Zhi-yuan, et al (1601)
Effects of Lactic Acid Bacteria and Mixed Acids on Fermentation Quality, Chlorophyll and Chlorophyll Degrading Enzymes in Alfalfa Silage	KONG De-hui, JIN Si-yu, CAO Yang (1610)
Construction and Application of Evaluation System for Wild Herbaceous Flower Resources in Hengyang City, South-central China	XU Ling-yun, YANG Man-yuan, YANG Ning (1619)
A Dynamic Evaluation Method for Forage-livestock Balance in Winter Based on the Dead Grass Vegetation Index	LI Hang, XU Wei-xin, HUANG Kun-lin, et al (1629)
Effects of Additives on the Quality and Vitamin Content of Mixed Alfalfa and Gaodan grass Silage	HU Meng-jie, XIAO Yan-zi, JIANG Chao, et al (1642)
Preparation of <i>Fusarium avenaceum</i> HY-041 Wetttable Powder and Herbicidal Activity Study	ZHANG Le, LI Huan, LI Xiang, et al (1650)