

本期目录 | 下期目录 | 过刊浏览 | 高级检索

[打印本页] [关闭]

植物保护—研究进展

水稻和稗草种间竞争关系研究现状

李海波¹,侯守贵²,于广星³,陈盈²,赵琦²,付亮²,马亮²

1. 辽宁省农业科学院稻作研究所
2. 辽宁省稻作研究所
3. 辽宁农科院稻作研究所

摘要:

稗草是水稻田中最常见的禾本科杂草,对生态因子的竞争非常激烈,综述了近年二者竞争关系的研究结论。育苗移栽使水稻在田块中占有生育期优势从而提高竞争能力,抗草育种、密度调节及高秆大冠层品种的应用等育种和栽培手段可以提高水稻的竞争力;数学模型的应用,量化了二者竞争关系的大小,在直播稻田中,二者竞争关系研究中要注意稗草的防控必须及时有效。

关键词:

Review of the Study on Interspecific Competitive Relationship of Rice and Barnyard Grass

Abstract:

Barnyard grass is one of the common gramineous weeds in paddy field. And they can compete for ecological factors with rice. This paper reviews the research status of the competitive relationship of rice and barnyard grass at home and abroad. Rice can take advantage of the growth stages by seedling and transplantation. Cultivation and breeding methods such as weed-suppressing rice breeding, density control and varieties of high straws and large panicle, which can improve the competition of rice. Mathematic models are used to quantify the competition between rice and barnyard grass. Control strategies must be in time and effective in direct seeding rice field.

Keywords: interspecific competition

收稿日期 2010-12-17 修回日期 2011-04-01 网络版发布日期 2011-06-16

DOI:

基金项目:

辽宁省科学技术厅科技攻关项目;辽宁省稻作所青年人才基金项目

通讯作者: 李海波

作者简介:

作者Email: lhbndlqy@yahoo.com.cn

参考文献:

- [1] 刘章勇, 方守国, , 稗草对不同种植密度水稻生长和产量的影响[J].湖北农业科学, 2000(4): 8-10.
- [2] 李杨汉. 中国杂草志[M], 北京: 中国农业出版社, 1998.

扩展功能

本文信息

Supporting info

PDF(465KB)

[HTML全文]

参考文献[PDF]

参考文献

服务与反馈

把本文推荐给朋友

加入我的书架

加入引用管理器

引用本文

Email Alert

文章反馈

浏览反馈信息

本文关键词相关文章

种间竞争

本文作者相关文章

李海波

侯守贵

于广星

陈盈

赵琦

付亮

马亮

PubMed

Article by Li,H.B

Article by Hou,S.G

Article by Yu,A.X

Article by Chen,y

Article by Diao,q

Article by Fu,l

Article by Ma,l

- [3]江荣昌. 稗草主要生物学特性及其防除[J].植物生态学与地植物学报, 1991, 15 (4) : 366-373.
- [4]唐恩全, 汪矛, 1994, 稗草特性及防除[J].植物杂志, 1994 (2) : 18-19.
- [5]Van Devender K. W., Costello T. A., Smith R. J.. Model of rice (*Oryza sativa*) yield reduction as a function of weed interference[J]. Weed Science, 1997, 45: 218-224.
- [6]徐正浩, 余柳青. 不同株型水稻对无芒稗的控制研究[J].中国水稻科学, 2000, 14 (2) : 125-128.
- [7]Lindquist J. L., Kropff M. J.. Application of an ecophysiological model for irrigated rice (*Oryza sativa*)-*Echinochloa* competition[J].Weed Science, 1996, 44: 52-56.
- [8]Fischer A. J., Ramirez H., Gibson K. D., Pinheiro B. D. S.. Competitiveness of semidwarf upland rice cultivars against *palisadegrass* (*Brachiaria brizantha*) and *signalgrass* (*Brachiaria decumbens*) [J]. Agronomy Journal, 2001, 93: 967-973.
- [9]Kwon S. L., Smith R. J., Talbert R. E.. Interference duration of red rice (*Oryza sativa*) in rice (*O. sativa*) [J]. Weed Science, 1991, 39: 169-174.
- [10]Pantone D. J., Baker J. B.. Reciprocal yield analysis of rice (*Oryza sativa*) competition in cultivated rice[J].Weed Science, 1991, 39: 42-47.
- [11]Pantone D. J., Baker J. B., Jordan P. W.. Path analysis of red rice (*Oryza sativa* L.) competition with cultivated rice[J].Weed Science, 1992, 40: 313-319.
- [12]Ziska L. H.. Changes in competitive ability between a C4 crop and a C3 weed with elevated carbon dioxide[J]. Weed Science, 2001, 49: 622-627.
- [13]Carey III V. F., Smith R. J., Talbert R. T.. Interference durations of Bearded Sprangletop (*Leptochloa fascicularis*) in rice (*Oryza sativa*) [J].Weed Science, 1994, 42: 180-183.
- [14] Ni H., Moody K., Robles R. P., Paller E. C., Lales J. S., 2000, *Oryza sativa* plant traits conferring competitive ability against weeds. Weed Science, 48: 200-204.
- [15]徐正浩, 王一平, 余柳青, A Martin Mortimer. 水稻移栽密度和早期水管理对无芒稗生态控制效果的影响 [J].生态学杂志, 2004, 23 (4) : 41-43.
- [16]Graf B., Gutierrez A. P., Rakotobe O.. Asimulation model for dynamics of rice growth and development: II .The competition with weeds for nitrogen and light [J]. Agricultural Systems,1990, 32: 367-392.
- [17]方守国, 刘章勇.不同类型和种植密度的水稻对稗草生长的抑制效应[J].湖北农学院学报, 2001, 21 (2) : 105-107.
- [18]朱文达.稗对水稻生长和产量性状的影响及其经济阈值[J].植物保护学报, 2005, 32 (1) : 81-86.
- [19]Cousens R.. A simple model relating yield loss to weed density[J].Annals of Applied Biology, 1985, 107: 239-252.
- [20]Cousens R.. Aspects of the design and interpretation of copetition (interference) experiments[J]. Weed Technology, 1991, 5: 664-673.
- [21]Kropff M. J., van Laar H. H.. Modelling crop-weed interactions. CAB International, Wallingford, UK, 1993.
- [22]Caton B. P., Foin T. C., Hill J. E.. Phenotypic plasticity of redstem (*Ammannia* spp.) in competition with rice[J]. Weed Research, 1997b, 37(1): 33-38.
- [23]Caton B. P., Foin T. C., Hill J. E.. A plant growth model for integrated weed management in direct-seeded rice: I .Development and sensitivity analyses of monoculture growth[J].Field Crops Research, 1999a, 62: 129-143.
- [24]Caton B. P., Foin T. C., Hill J. E.. A plant growth model for integrated weed management in direct-seeded rice: II .Validation testing of waterOdepth effects and monoculture growth[J].Field Crops Research, 1999b, 62: 145-155.
- [25]Bastiaans L., Kropff M. J., Kempuchetty N., Rajan A., Migo T. R.. Can simulation models help design rice cultivars that are more competitive against weeds[J]. Field Crops Research, 1997, 51: 101-111.
- [26]Johnson D. E., Wopereis M. C. S., Mbodj D., Diallo S., Powers S., Haefele S. M.. Timing of weed management and yield losses due to weeds in irrigated rice in the Sahel [J]. Field Crops Research, 2004, 85: 31-42.
- [27]Haefele S. M., Johnson D. E., Diallo S., Wopereis M. C. S., Janin L.. Improved soil fertility and weed management is profitable for irrigated rice farmers in Sahelian Africa [J].Field Crops Research, 2000, 66: 101-113.
- [28]Fischer A., Ramirez A.. Mixed weed infestation: prediction of yield losses for economic weed management in rice [J]. International Journal of Pest Management, 1993, 39(2): 175-180.

本刊中的类似文章

- 李慧仁, 迟德富, 李晓灿, 宇 佳, 赵洪云.林间蚜虫3种天敌间竞争干扰的研究[J]. 中国农学通报, 2009,25 (11): 145-150
- 孙建好,, 李 隆, 张福锁, 马忠明.不同施氮水平对小麦/玉米间作产量和水分效应的影响[J]. 中国农学通报, 2007,23(7): 345-345