

耐低氮小麦基因型筛选指标的研究

裴雪霞;王姣爱;党建友;张定一

山西省农业科学院小麦研究所 山西临汾041000

An approach to the screening index for low nitrogen tolerant wheat genotype

PEI Xue-xia;WANG Jiao-ai;DANG Jian-you;ZHANG Ding-yi*

Wheat Research Institute;Shanxi Academy of Agricultural sciences; Linfen 041000; China

[摘要](#)[参考文献](#)[相关文章](#)Download: [PDF \(476KB\)](#) [HTML 0KB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要 以12个小麦基因型为研究对象,采用溶液培养与田间试验的方法,设低氮胁迫和正常供氮2个水平,对耐低氮小麦基因型的筛选指标进行了探讨,为氮高效基因型小麦育种提供理论依据。结果表明,小麦植株干重在低氮胁迫和正常供氮条件下都有较大的基因型变异(变异系数CV分别为29.03%和18.21%);在所有调查性状的相对值中,相对植株干重(低氮胁迫/正常供氮)基因型变异较大(CV为22.76%)。相关性分析表明,相对植株干重与相对株高、相对植株吸氮量和相对氮利用效率呈极显著正相关($P<0.01$),且溶液培养试验中相对植株干重和田间试验中相对子粒产量(不施氮/施氮)间呈极显著正相关($r=0.77^{**}$, $n=12$)。因此,以小麦苗期相对植株干重作为筛选指标,然后进行田间验证,是筛选耐低氮小麦基因型行之有效的途径。

关键词: 小麦基因型 耐低氮 筛选指标 评价指标 小麦基因型 耐低氮 筛选指标 评价指标

Abstract: Screening and breeding low nitrogen(N) tolerant wheat genotype is one of the effective alternatives to alleviate pollution of environment, and increase the utilization efficiency of N fertilizer. A simple and scientific screening index plays an important role in the screening and breeding program. In this study, a hydroponic experiment and a field trial were carried out to screen the index for low N tolerant wheat genotypes under N stress and normal N supply condition, respectively. Results showed that total dry weight showed a significant genotypic variation at both normal and low N supply (the CV was 18.21% and 29.03%, respectively). Relative dry weight (low N supply/normal N supply) also showed a significant genotypic variation (CV was 22.73%). Correlation analysis showed that relative dry weight was highly significantly correlated to relative plant height, relative total N uptake, and relative N utilization efficiency ($P<0.01$). The relative total dry weight of wheat in solution culture system was significantly correlated to the relative grain yield (minus-N/plus-N) in field trial ($r=0.77^{**}$, $n=12$). Therefore, relative total dry weight at seedling stage would probably be an effective screening index for screening wheat genotype which tolerant to low N.

Keywords:

引用本文:

裴雪霞;王姣爱;党建友;张定一.耐低氮小麦基因型筛选指标的研究[J] 植物营养与肥料学报, 2007, V13(1): 93-

PEI Xue-xia;WANG Jiao-ai;DANG Jian-you;ZHANG Ding-yi. An approach to the screening index for low nitrogen tolerant wheat genotype[J] Acta Metallurgica Sinica, 2007, V13(1): 93-

Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

[作者相关文章](#)