

# 玉米籽粒性状的遗传效应分析 Analysis of Genetic Effects on Kernel Traits in Maize (*Zea mays* L.)

李玉玲<sup>1</sup>, 张泽民<sup>2</sup>, 许自成<sup>1</sup>, 席章营<sup>1</sup> LI Yu-ling<sup>1</sup>, ZHANG Ze-min<sup>2</sup>, XU Zi-cheng<sup>1</sup>, XI Zhang-ying<sup>1</sup>

1.河南农业大学农学院,郑州 450002 2.河南省洛阳农业高等专科学校农学系,洛阳 471003

1.Agronomy Department of Henan Agricultural University, Zhengzhou 450002 2.Agronomy Department of Luoyang Agricultural College, Luoyang 471003, China

收稿日期 修回日期 网络版发布日期 接受日期

**摘要** 采用二倍体胚和三倍体胚乳种子遗传模型及其分析方法,以5个玉米自交系及其配制的F1, F2, BC1, BC2世代为材料,研究5个玉米种子性状的胚直接效应、胚乳直接效应、母体效应和细胞质效应。分析结果表明,除粒宽外,各性状的遗传同时由细胞质效应和胚、胚乳、母体基因效应所控制,百粒重主要受胚乳和母体效应的影响,粒长的遗传以母体效应为主,粒宽和粒厚以胚乳效应为主。各部位籽粒百粒重的胚乳直接加性效应与母体加性效应的协方差达到显著或极显著水平,其余性状的胚、胚乳直接效应与母体效应间的协方差均不显著,通过母体植株的遗传表现可以对这些性状进行有效的选择。S22 是改良百粒重的优良亲本。

**Abstract:** The embryo, endosperm and cytoplasm effects of seven seed traits were studied by genetic model for diploid embryo and triploid endosperm plant seeds using five inbreds and their F1, F2, BC1 and BC2 generations. The estimates of genetic variance components indicated that the inheritance of all other kernel traits was controlled by the four effects except kernel width. The 100?kernel weight was mainly controlled by endosperm and maternal effects, and kernel length was controlled by the maternal effects, while endosperm controlled kernel width and kernel thickness. Except the significant or highly significant covariances between the endosperm direct additive and maternal additive effects for 100—kernel weight, all other traits between the embryo or endosperm direct effect and the maternal were not significant. So, maize inbreds could be developed by direct selection based on maternal plants for these traits. S22 was the best inbred of the improvement for kernel weight in this study.

**关键词** [玉米](#) [种子性状](#) [遗传方差和协方差](#) [遗传效应](#) **Key words** [maize](#) [seed trait](#) [genetic variance and covariance](#) [genetic effects](#)

分类号

## 扩展功能

### 本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(0KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

### 相关信息

- ▶ [本刊中 包含“玉米”的 相关文章](#)
- ▶ 本文作者相关文章

- [李玉玲](#)
- [张泽民](#)
- [许自成](#)
- [席章营LI Yu-ling](#)
- [ZHANG Ze-min](#)
- [XU Zi-cheng](#)
- [XI Zhang-ying](#)

## Abstract

## Key words

DOI:

通讯作者