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大麦白粉病抗性的遗传分析

Genetic Analysis of Resistance to Powdery Mildew in Barley

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中文关键词: 大麦 白粉病 抗性 遗传

英文关键词: Barley Barley powdery mildew Incidence of disease Disease index Resistance Heritability

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中文摘要:

为给大麦抗白粉病育种提供参考依据，以1个感白粉病、4个抗白粉病大麦品种为亲本，按Griffing的双列杂交法Ⅰ配制20个杂交组合，在田间自然条件下研究了大麦白粉病抗性的遗传特性。结果表明，大麦白粉病抗性在杂交组合间存在显著差异。5个亲本中，木石港3号和CM72的一般配合力较好，均表现为较大的负向效应，能极显著提高杂种后代抗白粉病能力;S096的一般配合力中等，也表现为负向效应，能显著地提高杂种后代抗白粉病能力，因而这三个品种在大麦抗白粉病育种中利用价值较高。大麦白粉病抗性遗传符合加性　显性模型，同时受加性和显性效应的作用，且加性效应更重要。大麦白粉病抗性的狭义遗传力较低，早代选择不宜太严。

英文摘要:

The genetic laws of resistance to powdery mildew in barley are beneficial for high　yield and disease　resistance barley breeding. Genetic analysis was conducted in five parents and their F_1 obtained from a diallel cross without reciprocals. In five parents, one was susceptible variety for powdery mildew and four were resistant to powdery mildew. The results suggested that significant difference was observed among all genotypes on resistance to barley powdery mildew. Mushigan3 and CM72 were the best in general combining ability and could very significantly improve the resistance to barley powdery mildew in their crossing progeny. The general combining ability of So96 showed normal and negative effect, also significantly improve the resistance. They might be used as the parents in barely breeding for resistance to powdery mildew. The inheritance of resistance to barley powdery mildew fit in the additive and dominance model and was controlled by both additive and dominant genetic effects, and the additive effect was more important. The major dominant genes has lower narrow sense heritability. Therefore, selection in early generation should not be too strictly.

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