



Agricultural Journals

Cz

GEN
PLANT

home [page](#) about [us](#) [us](#)

Table of Contents

IN PRESS

[CJGPB 2014](#)

[CJGPB 2013](#)

[CJGPB 2012](#)

[CJGPB 2011](#)

[CJGPB 2010](#)

[CJGPB 2009](#)

[CJGPB 2008](#)

[CJGPB 2007](#)

[CJGPB 2006](#)

[CJGPB 2005](#)

[CJGPB 2004](#)

[CJGPB 2003](#)

[CJGPB 2002](#)

[CJGPB](#)

[Home](#)

Editorial Board

For Authors

- **Authors
Declaration**
- **Instruction
to Authors**
- **Guide for
Authors**
- **Copyright
Statement**
- **Submission**

For Reviewers

- **Guide for
Reviewers**
- **Reviewers
Login**

Subscription

Czech J. Ger Plant Breed.

F., Xiao G.:

Optimization of *Cry2Aa* gene and development of resistant and herbicide-tolerant photoperiod-sensitive genic male sterile

Czech J. Genet. Plant Breeding
19-25

In this study, an optimized *C* was obtained after codon optimization based on the preferred codons. The novel fusion gene *Cry2Aa*, designed by adding the sequence of the signal peptide of PR1a and the endoplasmic reticulum signal peptide KDEL at the 3' end of the optimized *Cry2Aa* gene, resistant to *Cry2Aa* and *Bar* genes were transformed into 4008S, a photoperiod-sensitive genic male sterile (

method. A total of 65 regenerated plantlets confirmed by PCR were produced, in which eight transgenic lines had single-copy insertions as confirmed by Southern blot analysis. The variability of *Cry2Aa#* gene expression was observed among independent transgenic lines with single-copy insertion, and the spatiotemporal difference of Cry2Aa protein expression was discovered in each transgenic line. The results showed that the transgenic lines were highly resistant to rice leaf roller and striped stem borer, which not only confirmed the optimization of the *Cry2Aa* gene but also produced a useful germplasm for breeding insect-resistant and herbicide-tolerant hybrid rice varieties.

Keywords:

Bar gene; *Cry2Aa#* gene; herbicide tolerance; insect resistance; rice

[[fulltext](#)]

Sciences

XHTML1.1 VALID

CSS VALID