Alien introgression in rice: characterization of parental genomes and homoeologous pairing through genomic in situ hybridization. (C01-brar212508-Oral)

Authors:

- D.S.Brar* - *IRRI, Philippines*
- F.M.Abbasi - *PARC, Islamabad, Pakistan*
- B.P.S.Dhillon - *IRRI, Philippines*
- K.Fukui - *Osaka University, Japan*

Abstract:

The genus Oryza to which cultivated rice (O.sativa 2n=24) belongs has 22 wild species, representing 9 genomes (2n=24 or 48). A series of interspecific hybrids, MAALs (2n=25) and advanced backcross progenies have been produced from crosses of rice with wild species having different genomes. Genes for resistance to BPH, bacterial blight, blast, tungro virus and tolerance to acid sulfate condition including CMS have been transferred from wild species into rice. Some promising introgression lines have been released as varieties. SSR marker analysis of dihaploid and introgression lines derived from crosses of A-genome species show exchange of segments throughout the genome. However, introgression from distant genomes involves small segments, flanking markers usually negative. Introgression of such alien segments in the face of limited homeologous pairing is being investigated. Parental genomes have been characterized through GISH in several wide-cross derivatives, AA x CC, AA x BBCC, AA x EE, AA x FF, AA x GG and BBCC x HHJJ. GISH analysis showed both autosyndetic (AA, EE) and allosyndetic (AE) pairing. Alien chromosome in MAALs and introgressed wild species segments into the rice genome could also be characterized through GISH.

Corresponding Author Information:

Darshan Brar
International Rice Research Institute
DAPO Box 7777
Metro Manila
Philippines

phone: 6328450563
fax: 6328911292
e-mail: d.brar@cgiar.org

Presentation Information:

Presentation Date: Thursday, November 14, 2002
Presentation Time: 10:15 am

Keywords:
Alien introgression, Oryza, Homoeologous pairing, GISH