



1st International Agrobiodiversity Congress

November 6-9, 2016 | New Delhi, India

Abstract Book

Organizers

**Indian Society of Plant Genetic Resources
Bioversity International**

Published by:

Organizing Committee

1st International Agrobiodiversity Congress

New Delhi, INDIA

November 6-9, 2016

www.iac2016.in

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Citation : IAC (2016) Abstracts Book. 1st International Agrobiodiversity Congress, November 6-9, 2016, New Delhi, India, viii+344 p.

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Tel.: +91 120 3823823, Fax: +91 120 3823501

Email: info@iac2016.in, Web: www.tui.ice.in

Printed at:

Malhotra Publishing House

B-6, DSIDC Complex, Kirti Nagar, New Delhi - 110015

Tel.: 011-41420246, E-mail: mph@vsnl.com, vinay.malhotra@gmail.com

Website: www.mph.net.in

209 (P-448)

Enhancement of Maize Allelic Diversity Using Wild Relative Teosinte (*Zea Mays Ssp. Parviglumis*)

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Racial diversity has been the basis for maize improvement worldwide that has enhanced productivity along with increased genetic erosion globally as well as locally. Wild relatives have always been a source for novel gene (s) for both biotic and abiotic stress tolerance and therefore seem to be an integral part in breeding programme for germplasm development. In the present investigation, teosinte, a probable progenitor of maize was crossed with maize inbred line with objective to increase allelic diversity for different characters in maize. Evaluation of teosinte derived 92 maize lines in replicated trials revealed significant variation for different morphological characters. Days 50% anthesis, silking and anthesis silking interval (ASI) were varied from 59 days to 81 days, 0 days to 13 days respectively. Plant height, ear height and flag leaf length were varied from 55 cm to 205 cm, 20 cm to 100 cm, 13 cm to 39 cm respectively. All the lines exhibited 75% leaf senescence between 108 days to 121days. Grain yield/plot (2.25 m²) was noted to vary from 50g to 1000g. Teosinte derived lines also exhibited enhanced tolerance to banded leaf and sheath blight (BLSB). The present investigation therefore indicates wide range of variability for different characters. Therefore, the use of wild relatives may be a potential option for enhancing allelic diversity in maize.

Keywords: Teosinte, Maize, Allelic diversity, Wild relative

235 (P-449)

Survey, Collection and Utilization of *Grewia* and *Cordia* Species for Human and Animal Nutrition in Arid Kachchh, Gujarat

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Underutilized plants like *Grewia* and *Cordia* species have great potential for contribution to food and fodder security for rural families and their animals; these plants have medicinal properties. In Kachchh, great diversity of these species viz. *G. tenax*, *G. villosa*, *G. flavescences*, *C. myxa* and *C. gharaf* is available in arid lands. However, these species are under severe neglect from research and extension despite their potential to grow over large areas. Hence, this study conducted comprehensive botanical surveys in spring and winter 2015 to collect 97 diverse and valuable germplasms of these species for their characterization and utilization from 55 sites of 5 blocks of Kachchh by adapting selective sampling strategy. Each collected germplasms was allotted individual accession number. It was found that *G. tenax* (72.71%) was distributed widely followed by *G. villosa* (49.09%), *C. gharaf* (29.09%) and *C. myxa* (21.81%). Whereas, *G. flevescence* (3.63%) was minimally distributed. Distribution of 69 *Grewia* germplasm was maximum in Nakhatrana (44%) followed by Bhuj (27.53%), Mandvi (15.94%), Rapar (8.69%) and Bhachau (2.89%). However, 28 sites of *Cordia* germplasm collection were mostly distributed in Bhuj (53.57%) followed by Mandvi (28.57%), Rapar (10.71%) and Bhachau (7.42%). Finally, it is concluded that there is fair diversity of *G. tenax* and *G. villosa* in Nakhatarana, while, *C. myxa* and *C. gharaf* were mainly found in Bhuj and Mandvi. It was found that Kotda Chakar (Bhuj), Dahisara and Koday (Mandvi) are the diversity regions for all selected species except *G. flevescence* which is only found in Dhinodhar (Nakhatrana).

Keywords: Collection, *Grewia*, *Cordia*, Diversity