



1st National Genetics Congress
on
Genetics for Sustainable Food, Health and Nutrition Security
December 14-16, 2018
ICAR-Indian Agricultural Research Institute
New Delhi 110 012

Book of Abstracts

Organized by
Indian Society of Genetics & Plant Breeding (ISGPB)
A Block, F-2, First Floor, NASC Complex, D.P.S. Marg, IARI,
P.O. Pusa Campus, New Delhi 110 012



Published by

The Indian Society of Genetics and Plant Breeding
New Delhi 110 012

Printed at

M/s. Kamala Print-N-Publish
O 96 New Mahavir Nagar
New Delhi 110 018

www.isgpb.org

Correct Citation: ISGPB (2018). Book of Abstracts, 1st National Genetics Congress on "*Genetics for Sustainable Food, Health and Nutrition Security*", December 14-16, 2018, ICAR-Indian Agricultural Research Institute, New Delhi 110 012.



1st National Genetics Congress

on

“Genetics for Sustainable Food, Health and Nutrition Security”

December 14-16, 2018

at

ICAR-Indian Agricultural Research Institute, New Delhi 110 012

ABSTRACTS

Compiled and Edited by

S M S Tomar

Akshay Talukdar

S K Chakrabarty

Gyan P Mishra

Gopala Krishnan S

Vignesh M

Shailendra K Jha



www.isgpb.org

Indian Society of Genetics and Plant Breeding

A Block, F-2, First Floor, NASC Complex, D.P.S. Marg, IARI, Pusa Campus,
New Delhi 110 012



SESSION I

Genetic Resource Management and Use



breeding stands as a stable way for conservation of elite genotype of unknown parentage from any background, giving extra advantage over apomixes and other methods for fixation of heterosis. Reverse breeding enables production of transgene free homozygous parental lines of any heterozygous plant using achiasmatic meiosis along with RNAi or marker assisted method followed by production of doubled haploids. It helps in reconstruction of heterozygous germplasm collections, aids in CMS based hybrid production and facilitates trait mapping, QTL identification, gene interaction studies and targeted inbreeding using chromosome substitution lines. Reverse breeding is also used as a concept of rewilding the present cultivars in form of back to nature breeding and its eco-friendly nature making it more attractive. Thus, it enables immortalization of heterotic effect in unprecedented manner.

PS I – 30

Genotype × Environment interaction in hedge lucerne [*Desmanthus virgatus* (L.) Willd.] for yield and quality

Arun Chacko, Mareen Abraham and A. M. Shahiba

Plant Breeding and Genetics, Department of Plant Breeding and Genetics, College of Agriculture Kerala Agricultural University, College of Agriculture, Trivandrum 695 522

Email: arun7joseph@gmail.com

The present work on Genotype × Environment interaction in hedge lucerne [*Desmanthus virgatus* (L.) Willd.] for yield and quality” was carried out across four locations in Kerala viz., College of Agriculture, Vellayani, College of Horticulture, Thrissur, KVK, Kollam and RARS, Ambalavayal, Wayanad, during 2016-2018 with an objective to identify stable genotypes of *Desmanthus virgatus* in varied environments with respect to yield and quality. The eight genotypes of hedge lucerne were evaluated in a Randomized Block Design (RBD) with four replications over four locations during 2017-2018. Eberhart and Russell model (1966) was used to analyze the stability and adaptability of yield and yield related characters of these genotypes. In the pooled analysis of variance for evaluation of hedge lucerne over locations, significant differences among the genotypes and environments were noticed for all the characters studied, suggesting that genotypes interacted significantly with environments. Stability analysis revealed that the genotype T₁ was stable over all locations for different characters such as plant height, number of branches, green fodder yield, dry fodder yield, dry matter production and crude fibre. The genotype T₄ was stable for the characters number of branches, leaf to stem ratio and crude protein across the locations. The genotype T₆ was stable over locations for the characters viz., plant height, length of branches and number of leaves, while the genotype T₇ was stable for leaf to stem ratio, number of pods and crude fibre. The present study revealed that the genotypes T₁, T₄, T₆ and T₇ were stable over the four different locations viz., College of Agriculture, Vellayani, College of Horticulture, Thrissur, KVK, Kollam and RARS, Ambalavayal, Wayanad. The genotypes T₂ and T₈ showed stable performance under favourable environments, while the genotype T₅ was suitable for unfavourable environment.