

COTTON Innovate



Weekly Newsletter from Central Institute for Cotton Research, Nagpur

Visit : www.cicr.org.in

Issue : 2, Volume 10, October 5-11, 2014

LITERATURE SCAN

COOLEST GENE NAMES IN PLANTS

BB- BIG BROTHER—encodes E3 ubiquitin ligase - repressor of plant organ growth

BBLB -BUBBLE BATH-An *Arabidopsis* gene, loss of which results in a larger number of small vesicles, giving the cell the appearance of being filled with bubbles

BBM- BABY BOOM- AP2/ERF transcription factor which induces spontaneous cell proliferation leading primarily to somatic embryogenesis, but also to organogenesis and callus formation

BDG- BODYGUARD—Responsible for the formation of cuticle in plants

BON 1- BONZAI 1 - function in the pathway of membrane trafficking in response to external conditions. Mutants of this gene make miniature fertile plants at 22°C but have wild-type appearance at 28°C

BRN- BEARSKIN- regulate root cap maturation in *Arabidopsis*

BYS –BOY NAMED SUE-quantitative trait locus confers increased meiotic stability to an adapted natural allopolyploid of *Arabidopsis*

CLF- CURLY LEAF— Stable repression of floral homeotic gene AGAMOUS

MOM – MAINTENANCE OF METHYLATION - maintenance of transcriptional silencing of genes – mutation causes release of transcriptional silencing of methylated genes

DAD – DECREASED APICAL DOMINANCE – Mutation causes increased levels of shoot branching.

DRIP1- DREB2A INTERACTING PROTEIN—delayed expression of drought-related genes

ESK1 –ESKIMO 1- Cold acclimation

FLP – FOUR LIPS—involved in stomatal development - Recessive mutations in the gene abnormally induce at least four guard cells in contact with one another

LOG – LONELY GUY—involved in growth and development especially cytokinin activation – Mutation in this gene results in reduced numbers of floral organs, flowers tended to contain only one stamen and no pistil

MAX- MORE AUXILLARY GROWTH- controls shoot branching by regulating auxin transport- mutation leads to increased branching.

PCN –POPCORN—Embryo and meristem development

PEN – PENETRATION DEFICIENT – Non host resistance against pathogens –mutation of this gene permitted both increased invasion of fungi into epidermal cells and initiation of hyphae in plants

PIN- PIN FORMED—Auxin transporters – mutation of this gene caused pin shaped inflorescence in *Arabidopsis*

PKL – PICKLE—Chromatin remodeling factor- Mutation in the gene caused *Arabidopsis* to store oil proteins, and starch in its tap root, and gives a pickle like appearance.

PNF- POUND-FOOLISH - to specify floral meristems during reproductive development

PNY –PENNYWISE – required for internode patterning as well as flower and fruit development. -An *Arabidopsis* gene named after a California punk rock band. It functions in conjunction with the gene **POUND-FOOLISH**

RING- REALLY INTERESTING NEW GENE- Zinc finger protein – regulates development

SK- SNORKEL- promotes internode elongation in rice for submergence tolerance

SUMO – SMALL UBIQUITIN-like MODIFIER – Sumoylation of proteins

SUP – SUPERMAN—Regulator of floral homeotic genes- mutations in which result in extra stamens developing at the expense of the central carpels in the *Arabidopsis thaliana* flower

KYP – KRYPTONITE – suppresses SUPERMAN gene

SWEET – SUGARS WILL EVENTUALLY be EXPORTED TRANSPORTERS – sucrose effluxers

TMM – TOO MANY MOUTH – involved in stomatal development- mutation of this gene causes too many stomata

TPL – TOPLESS – Auxin mediated transcriptional repression - plants with a defective **TOPLESS** gene form an extra root where the shoot should be (rather than being topped by a lovely, fragrant bloom, a rose mutant in this gene would be crowned by a homely second root)

WUS- WUSCHEL- required for shoot and floral meristem integrity- Mutation causes larger and more vacuolated shoot apices.

Contributed by J. Annie Sheeba, Scientist, Plant Physiology, CICR, Nagpur

Meetings

Private-Public Partnership meeting

A meeting was held on October 8, 2014, to discuss PPP mode of collaboration with respect to HDPS in Bt cotton developed by Bayer –Crop Science. Shri. Friedhelm Hanke, Global Crop Manager Cotton at Bayer Crop Science, Shri. Gusvinder Singh, GM, Strategic Planning at Bayer Crop Science, Dr. Asif Tanveer, GM, Business Development & Stewardship, Bayer Crop Science, India, Dr. Vipin Dagaonkar, Lead Breeder, Cotton, Bayer Crop Science and Shri. Desai, Sr Manager Product Stewardship & Business Development at Bayer Crop Science attended the meeting and also interacted with the Heads of Divisions, Dr. Sandhya Kranthi, Head, Crop Protection,



Dr. Blaise Desouza Head, Crop Production and Dr. Suman Bala Singh, Head Crop Improvement Divisions. The team also visited HDPS experimental plots in the institute.

Screening Committee for CLCuV meeting

A meeting was held under the guidance of Dr. C. D. Mayee, Chairman, Screening Committee, CLCuV Disease on October 10, 2014, at CICR, Nagpur to fine tune the screening protocols being adopted for determining the incidence and severity of cotton leaf curl viral disease in cotton. The meeting was chaired by Dr. K. R. Kranthi, Director, CICR. Dr. Sandhya Kranthi, Head, Crop Protection, Dr. D. Monga, Head, RS, Sirsa, Dr. A.H. Prakash, Head and PC, CICR, RS, Coimbatore, Dr. Dahiya, HAU, representatives of private companies, Dr. Joginder Singh, RASI seeds and Dr. Sami Wadyalkar, Ankur seeds attended the meeting. The existing protocols were discussed in detail and appropriate refinement was made wherever necessary.

Visits

HDPS field Visit

Dr. Sandhya Kranthi, Head, Crop Protection Division and Dr. V. Chinna Babu Naik, Scientist, Entomology, visited the HDPS fields of Akola on October 9, 2014 and were apprised of field demonstrations of HDPS in cotton. She also visited the Biotechnology and Entomology Division of PDKV, Akola. As an external examiner, she conducted viva-voce for a Ph.D (Entomology) student, Mr. Panchbhai.

Students Visit CICR, RS, Coimbatore

As a part of their course curriculum, third year B. Sc., (Agriculture) students from TNAU, Coimbatore visited CICR, Regional Station, Coimbatore in two batches on October 9-10, 2014. Drs. K. Sankaranarayanan and Dr. (Mrs.) P. Nalayini, Principal Scientists (Agronomy) delivered a talk on Cotton Production Technologies. The students were taken to the demonstration plots on High Density Planting System and also other CICR technologies.



Produced and Published by : Dr. K. R. Kranthi, Director, CICR, Nagpur

Chief Editor : Dr. Nandini Gokte-Narkhedkar

Editors : Dr. J. Annie Sheeba, Dr. Vishlesh Nagrare, Dr. J. Amudha, Dr. M. Saravanan

Media Support & Layout design : Mr. M. Sabesh

Production Support : Mr. Sanjay Kushwaha

Citation : Cotton Innovate, Issue -2, Volume - 10, 2014, Central Institute for Cotton Research, Nagpur



Publication Note: This Newsletter presented online at <http://www.cicr.org.in/NewsLetter.html>
Cotton Innovate is the Open Access CICR Newsletter

The Cotton Innovate – CICR Newsletter is published weekly by
Central Institute for Cotton Research

Post Bag No. 2, Shankar Nagar PO, Nagpur 440010

Phone : 07103-275536 Fax : 07103-275529; email: cicrnagpur@gmail.com