

5th INTERNATIONAL GROUP MEETING (IGM)

Climate-Proofing Cereal Agriculture: Strategies for Resilience and Sustainability

(March 27-29, 2024)

BOOK OF ABSTRACTS

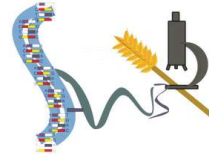
Organised by:

Society for Advancement of Wheat & Barley
Research (SAWBAR), Karnal

&

ICAR-Indian Institute of Wheat & Barley
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Venue:

**ICAR-Indian Institute of Wheat & Barley Research (IIWBR)
Karnal-132001, Haryana, India**



Book of Abstracts: 5th International Group Meeting on Climate-Proofing Cereal Agriculture: Strategies for Resilience and Sustainability

Editors:

Poonam Jasrotia, Satish Kumar, Rajender Singh Chhokar, Prem Lal Kashyap, Vikas Gupta, Bhudeva Singh Tyagi, Mahender Singh Saharan and Gyanendra Singh

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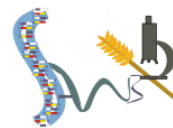
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Theme 2: Mitigation Strategies for abiotic stress management in cereal crops

2PP-25

Appraisal of High Yielding Drought Tolerant Transgressive Segregants in Crosses of Two Rows and Six Row Barley (*Hordeum vulgare* L.) in Early Segregating Generation

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In pursuit of enhance productivity along with drought tolerant barley cultivar; a line x tester (6 x 4) crosses involving rainfed cultivars was made. Of the 24 crosses, 10 crosses from diverse parents were selected in next *rabi* season and 10 F₂'s originating from a selected crosses were grown under two environments. Data recorded on grain yield per plant relating to 10 F₂'s originating from these crosses were subjected to screening drought tolerant transgressive segregants. The cross/ genotypes which shows least drought susceptibility index values (<1) is identified as drought tolerant/ resistant and therefore, it might be concluded on the basis of Y_d, Y_p, GM and S values that plant derived from the cross BCU 4956 x K 603 and BCU 4922 x K 603 were drought tolerant. The cross BCU 4922 x K 603 was most promising as it yielded highest number of recombinants (18 in irrigated and 17 in rainfed conditions). Next to this, BCU 4910 x K 603 yielded 15 segregants in irrigated and 15 segregants in rainfed conditions. A total of 92 and 53 promising F₂ recombinants in irrigated and rainfed conditions, respectively from 10 crosses were evaluated for yield, number of effective tillers, thousand grain weight, harvest index, stomatal conductance, chlorophyll content and proline content. All the recombinants selected under rainfed condition (including a few from irrigated condition) showed enhanced level of proline content coupled with high grain yield and harvest index. Further, the segregants (culture no. 20, 41 & 4 in irrigated and culture no.14, 15 & 9 in rainfed) derived from cross BCU 4910 x K 603 and (culture no. 14, 37 in irrigated and 17, 19 & 7 in rainfed) from BCU 4922 x K 603 gave maximum percentage increase in grain yield over check coupled with other drought tolerant traits.