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| Category                             | : International Rice Research Conference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Select Theme                         | : Genetic improvement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Endorsement email                    | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Keyword 1                            | : Mutagenesis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Keyword 2                            | : Biotic stress tolerance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Keyword 3                            | : Breeding Strategy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Title of Entry                       | : Breeding for high yielding and BLB-disease resistant Basmati rice varieties through induced mutations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Select only one type of presentation | : 15 minute oral presentation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Abstract                             | : Basmati rice cultivar Super Basmati was irradiated with gamma rays to induce the genetic variability against the bacterial leaf blight (BLB) disease with improved yield potential at Nuclear Institute for Agriculture and Biology (NIAB), Faisalabad, Pakistan. Selections of mutants were practiced on individual plant basis using M2 lines which were generated from M1 panicles. In M2 generation, 19 single plants at 150 Gy and 7 promising plants at 200 Gy were selected exhibiting the desired resistant response to BLB-disease. Out of these 26 plant progenies, 14 were further selected in M3 generation. Selected mutant progenies which showed promising parameters were included in the observation tests. Among these progenies four high yielding and BLB-disease resistant mutants viz; M32, M42, M45, M47 at 150 Gy and M48 at 200 Gy were evaluated at hotspot Basmati rice growing areas of Punjab, Pakistan from 2015-2017 under PARB-ADB project. All the Basmati rice mutants exhibited resistant to moderately resistant response to most virulent pathotypes. After artificial inoculation, maximum disease resistance response was recorded in mutant M48 (< 5.0 cm lesion length) followed by M45 (4.9 cm). In multilocation hotspot areas, all the mutants yielded 14% higher than the control Super Basmati. The elite Basmati rice mutant M48 with required character of BLB-disease resistance resulted in 28 % higher yield (4750 kg/ha) over the control (3710 kg/ha). Keeping in view, the M48 will be contributed in the National Uniform Rice Yield Trial to check wider adaptability against BLB-disease incidence for sustainable Basmati rice production. |

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