

Mutation Breeding for Crop Adaptation to Climate Change

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Exacerbated Effects of *Climate Change for Crop Production*



Drought

Waterlogged

Diseases



RCA Project-RAS /5/056

Mutation breeding approaches to develop new crop varieties adaptable to social development and climate change (2012-2015)

Outputs & Achievements

- **351 advanced new mutant lines**
- **28 mutant varieties officially released**
- **4 regional training courses for 96 young researchers**
- **29 national training materials/protocols**
- **A web-page of Asian and Ocean Association of Plant Mutagenesis (AOAPM) established (www.plantmutagenesis.net) for sustainability of the impact of this Project**



Early Mutant Rice: BINA Dhan-14 **(Bangladesh, 2013)**

- **40 ds mature earlier than its parent and 7-10 ds earlier than the local popular short duration variety BRRI dhan28**
- **Shorter in plant height (80-85 cm) and lodging resistance**
- **Average yield 7.6 ton/ha**
- **2 million hectares of potential application land and also creating scope for producing another seasonal crop (mustrad / rapeseed)**



Drought Tolerant Sorghum: Pahat (Indonesia, 2014)

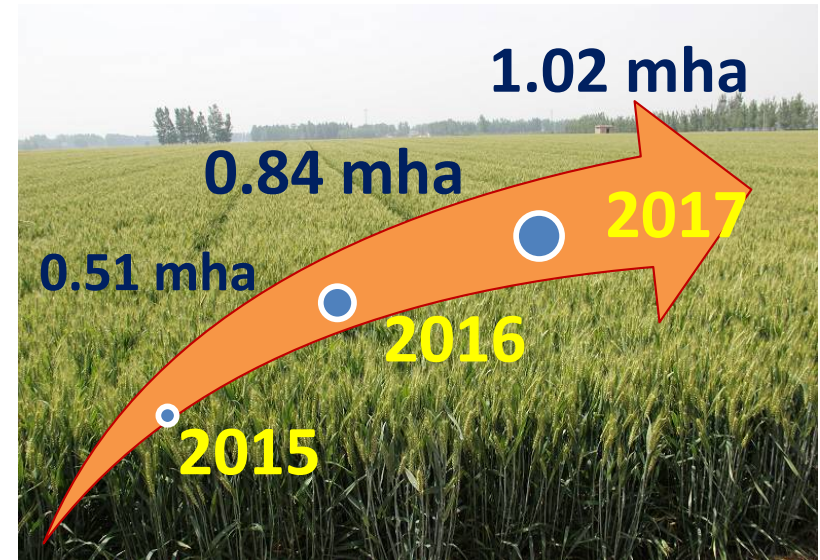
- Indonesia national sorghum mutant cv. irradiation-induced from a Chinese mutant germplasm *Zhenzhu*
- 80,000 ha cultivation in 2017/2018
- From the lab to industry and the table



Wide Adaptable Wheat: LY502

(China, 2011)

- High yield and good adaptability
- Grain yield 8.2 with max. of 12.2 ton/ha
- 2nd biggest China national wheat variety with 3.6 million ha cultivation area and 948 million additional income for farmers



Ratooning Super Rice (China)

- 14 Super space induced mutant rice varieties
- High yield and blast disease resistance
- Ratooning utilization for two harvests



Thank You !



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