

BIOTECHNOLOGY POTATO PARTNERSHIP

Growing Capacity Fosters Collaboration and Strengthens Partnerships

By Janet Fierro

The Feed the Future Biotechnology Potato Partnership, managed by Michigan State University (MSU), recently concluded capacity building activities with project partners in Bangladesh and Indonesia that have not only built scientists' skills, but have also strengthened collaboration and research networks.

The Partnership is working towards the introduction and commercialization of a genetically engineered late blight resistant potato into Bangladesh and Indonesia to support smallholder farmers. Having been engineered with three resistant R genes from three different wild potato species that naturally curb the disease pathogen, this potato is able to resist late blight disease, the most serious of all potato diseases. The potato is expected to reduce costly and harmful fungicide sprays by up to 90%.

Due to strict oversight and regulation, genetically engineered material research must be done following specific guidelines and procedures. The scientists at the project's partner research institutions, the Bangladesh Agricultural Research Institute (BARI) and the Indonesian Center for Agricultural Biotechnology and Genetic Resource Research and Development (ICABIOGRAD) have extensive experience with handling conventional potato research, but many had less experience screening for late blight resistance or working with genetically engineered materials.

Through the creation and execution of a "practice" confined field trial (CFT), the U.S. project team was able to collaborate with the partner countries to develop CFT standard operating procedures to address biosafety for the trial that will ensure global regulatory compliance once the genetically modified (GM) material is in country, and to develop study plans and protocols for trial design and management, late blight evaluation, and agronomic data collection. "Given that the 3-gene late blight resistant potato is a GM potato, we want to make sure that our partner countries meet national regulatory requirements and follow globally accepted best practices in handling GM material as would be expected for a field trial of a GM crop anywhere in the world, while respecting the limitations faced in these countries and allowing modifications to be made that are acceptable," says Dr. Cholani Weebadde. Weebadde is an Assistant Professor – Plant Breeder for International Programs at MSU and the Human and Institutional Capacity Development (HICD) Lead for the Biotechnology Potato Partnership.

The "practice" CFT was designed with the leadership of project team members Dr. David Douches (MSU) Project Director, Dr. Karen Hokanson (University of Minnesota) Regulatory Lead, Dr. Phillip



"Practice" confined field trial in Bangladesh prepares researchers for genetically engineered potato trials. Photo courtesy of K. Hokanson.

Wharton (University of Idaho) Pathology Lead, and Ms. Kelly Zarka (MSU) Research Manager. “This U.S. based team worked closely with the project team members in Bangladesh and Indonesia to implement the “practice” CFT,” explains Dr. Phillip Wharton. “The close cooperation fostered trust, shared responsibility, and mutual learning that are essential for long-term research partnerships”.

The Partnership is expected to begin in country confined field trials with the 3 R-gene materials during the next project year.

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