Current Activities of PGP Development

(R = Research, SF = Semi-Field Test, F = Field Test and C = Commercialization)

Country	2011	2012 Fill in the results	2013 Fill in the planning	2014 Fill in the planning
Bangladesh	・R, SF (Tomato) ・F (Maize, Rice, Mungbean)	・Tomato→ yield up to 56% increases ・Rice→ up to 13% increases ・Maize→ 24% increases ・Mungbean → 30% increases	F (potato, Maize, and Mungbean) + Antifungal, disease control activities	F(potato, Maize, and Mungbean), and processing for commercialization (Patent, registration etc.)
China	F (Pear)	-	-	-
Indonesia	F (Kailan)	・Chili: a. Harvesting times increase double compared with chili plant without using oligochitosan. b. Chili plant without using oligochitosan has no production due to virus attacked, while	・Pot Test (green house test) on Rice	・ F (rice)

		chili plant treated with oligochitosan has average total production for each plant is 35 kg. c. Oligochitosan is effective as plant elicitor for chili especially diseases due to Anthracnose virus		
Japan	Extension of marketing	・SF(Synergetic effect with biofertilizer) ・R(PGP from Chitin)	・SF(Synergetic effect with biofertilizer) ・R (PGP from Chitin ・SF (Rice)	・SF (Synergetic effect with biofertilizer) ・R (PGP from Chitin) ・SF (Rice)
Kazakhstan	TBD	R(Choosing the raw material)	TBD	TBD
Malaysia	・F up to C (Rice) ・F (Tissue Culture)	・F (Agarwood Plant)	・SF (Chili fertigation system) ・Production LMWt and oligochitosan in solid form	LMwt/oligochitosan as animal/fish feed
Mongolia	Starch	・R (Wheat husk) ・SF(Potato)	・R(starch, wheat husk) ・SF(potato) using PGP from Vietnamese group	・R(starch, wheat husk) ・SF(potato)

Philippines	R&SF	SF & F(rice and corn)	F (Rice and corn)	F (Sweet potato, banana)
Thailand	F (Corn) Chili?	SF (Mariam Plum**)**	F (Mariam Plum)	F(rice)
Vietnam	F (Papaya)	・Draft guideline for field test of oligochitosan on rice ・R&D on irradiation of chitosan in swelling state ・R (Plant tissue culture)	・Plan to field test on chili and dragon fruit ・To prepare LMW chitosan and oligochitosan by irradiation of chitosan in swelling state with water to increase the yield ・To prepare plant elicitor/promoter from irradiated beta glucan extracted from the waste of beer production ・Stimulating Immune system by oligochitosan/oligoglucan on chicken and fish	Production feed additives from irradiated chitosan and beta glucan