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### **Better(Bt) Talong**

Last July 26, 2016, the Supreme Court reversed its December 2015 decision that stops the field testing, propagation, commercialization and importation of genetically modified (GM) foods, including the controversial *Bacillus thuringiensis* (Bt) eggplant.

The decision of the Supreme Court last December to simultaneously ban the field testing of Bt talong and nullify the existing government biosafety guidelines has dire implications and is very counterproductive for scientific progress, and thus, economic development and welfare, raising very serious concerns in the scientific community.

What exactly is Bt talong? “Bt talong is a special variety of eggplant, given that it is capable of making a bacterial protein that resists the fruit and shoot borer, a destructive insect pest ... This protective protein is derived from *Bacillus thuringiensis* (hence the Bt in Bt talong), which occurs naturally in soil and is commonly used as a biological pesticide,” says Lawrence L. Ilag, Ph.D., an independent consultant on biotechnology and intellectual property matters.

Bt talong, developed by the Institute of Plant Breeding at the University of the Philippines Los Baños (UPLB), has undergone extensive and rigorous research with particular attention paid to risk procedures and assessments to ensure its safety and utility. Cynthia T. Hedreyda, Ph.D., of the National Institute of Molecular Biology and Biotechnology in UP Diliman says Bt talong “involves exactly the same procedures, the same principle ... by previously approved and currently used genetically modified corn, cotton and soybean, which are already planted worldwide and approved in the country.”

The fear that Bt talong is unsafe in any way is thoroughly unfounded. Asuncion K. Raymundo, Ph.D., professor emeritus in microbiology at UPLB, says the root of the fears regarding Bt talong is planted on speculations regarding its health and environmental consequences, which anti-biotechnology groups argue “more often without concrete evidence.” Bt talong is not a threat to the natural balance and healthful ecology and does not constitute an “ecological imbalancing act.” Indeed, “precise plant breeding” is the mundane phrase used by Ben de Lumen, Ph.D., professor emeritus at the University of California Berkeley, and founder and CEO of Narra Biosciences, to refer to genetic engineering.

Bt Talong is actually beneficial in various ways. Number one would be on the farmers by which through Bt Talong which there would lesser usage of pesticides thus reduction on input costs and also it will give a much safer working condition for them. Continuous exposure to these highly toxic chemicals can cause significant health risks to eggplant farmers. Agnes C. Rola, Ph.D., UPLB professor and National Academy of Science and Technology academician, citing the results of several studies, relates: “In a study in Sta. Maria Pangasinan, 92 percent of farmer respondents had experienced pesticide spills on their body during application, 65 percent while spraying and 62 percent while mixing pesticides (Lu, 2014). Also with the consumers, Bt talong farming procedures afford better health and nutrition for eggplant consumers. Carlito B. Lebrilla, Ph.D., distinguished professor of chemistry and biochemistry at the University of California, Davis, talks about the health benefits of plant genetic modification. “Many examples of food created this way have been shown to be safer, [as they are grown] using less fertilizer and less pesticide,” he says. Contrast this with the alternative. “Studies showed that consumers are subject to higher chemical residue in eggplant due to too much use of highly toxic chemicals to prevent the fruit and shoot borer and avoid crop losses,” Rola says. And lastly, it can help in the

environment conservation for Bt talong production utilizes lesser pesticides --- pesticides used in farming the ordinary eggplant indiscriminately kill even potentially beneficial organisms and pollute the farm environment.

With the proper biosafety standards and regulations securely in place, the verdict on Bt talong and other similar biotechnology offshoots should be left in the hands of consumers—consumers readily armed with the proper information. After all, hunger and poverty are quite personal. The maxim, *caveat emptor* (let the buyer beware), should suffice.