

Golden Rice Insights

(part of an interview of Consumer Reports' Michael Hansen by Food Revolution's John Robbins)
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...John Robbins: Monsanto and its allies have been saying for a long time that those who question genetically modified foods are standing in the way of a technology that will produce super crops that tolerate drought, provide improved nutritional values and enable us to feed more hungry people. This has been the promise. This has been the claim.

Last month, the journal Science published an editorial titled, “Standing up for GMOs,” (<http://www.sciencemag.org/content/341/6152/1320.full>) which all but said that anti-GMO activists and people who are questioning the validity or reliability of this technology are responsible for blindness in the third world. Now they are talking, of course, about Golden Rice which you have a great deal of expertise on. What is taking place here?

Michael Hansen: I was actually shocked by that editorial. The scientist that wrote it, I guess they don't know any better. The Golden Rice that has been developed, both Golden Rice-1 and Golden Rice-2, the dirty little secret is that the data that has been made public about those. Those are basically the two kinds of rices grown, the Japonicas and the Indicas. The Japonica rices are the short grain sticky rice. They tend to be grown in highland or drier areas. That is the kind of rice, for example, that is eaten in Japan. But, throughout most of South Asia, such as Vietnam and India and Bangladesh and the Philippines, basically where the really poor are, they eat Indica varieties. Those are the long grain aromatic basmati and jasmine rice. Those are the rices that are grown in flooded conditions, in rice paddies. So, this engineered rice, IRRI knows that the folks in South Asia don't eat the Japonicas. So having Golden Rice in a Japonica variety isn't going to help. They have been desperately trying to transfer that trait into these Indica varieties and we still have no data.

I have pointed out to people that even if there was Greenpeace and none of the NGOs existed, there still would not be Golden Rice released yet in Asia because they don't yet have it in the proper variety. And, I would point out, in the Philippines, vitamin A deficiency according to WHO, if more than 20% of the vulnerable population, that is, children under the age of five or pregnant and lactating women, are vitamin A deficient, it is considered a serious public health concern.

Well, it turns out in the Philippines, in 2003, that figure was 40% in children under five. That is a huge number because 20% is considered to be at a level where it is a serious public health concern. For pregnant and lactating women, the figures were 22 to 25 percent. By 2008, just because of food fortification and supplementation – that is, existing methods – the vitamin A deficiency rate in children 5 and under in the Philippines is now 15.2% and 15% is [now] the cut-off where it is considered a significant public health risk. For pregnant and lactating women it is between six and nine percent.

So, the problem has been largely solved. Now, in the long term the solution is diversification of the diet and more sustainable agriculture. But, this whole notion that this is going to save the blindness and save the sight of all these children, we still don't know that because, again, of the

varieties that the poor would eat, we haven't seen any data on them at all yet.

So that is something that is a real concern. There is also the issue of the Betacarotene that is the golden color in the rice tends to break down over time in the presence of light and oxygen. So we've tried to ask, "Okay, once you harvest the rice and you mill it, what happens if it sits for one, two or three months?"

John Robbins: That's what happens in the real world.

Michael Hansen: Exactly, and we keep on asking, "Have you done this study?" "Have you done this [other] study?" Again, nothing so far. I was actually in the Philippines two years ago. We did three teach-ins with the last one being at the Polytechnic University in Manila and we had 700 people show up, 500 of them nursing students. Then, debates with the head of the Golden Rice program in the Philippine Parliament. Again, I challenged them, "What data do you have on this Golden Rice crossed into Indica varieties?"

They were able to put it into an IR-64 [classification] and that is one of the main Indica varieties. They were doing field tests starting in November of 2010. But, again, I have seen no data, whatsoever. When I challenged them on what data they have, they kept on repeating the old data on Golden Rice-2. So, this notion that this Golden Rice is needed and it can help people - the basic information, we don't have. That is, for the poor — the rice that the poor actually eat — we haven't seen a single study on those varieties that they want to commercialize.

John Robbins: So, the claim made by the journal Science — that it is anti-GMO activists who are holding up this wonderful technology — isn't accurate.

Michael Hansen: Not only is it not accurate, but I laughed when I saw that because I wondered whether those folks that wrote that article had read an article by Martin Enserink, who is a correspondent for Science (<http://www.sciencemag.org/content/320/5875/468>; paywall). He, in 2008, wrote about the false hope of Golden Rice and talked about these issues. Talked about how they haven't been able to get it into the Indicas and that article said that they were going to get the Golden Rice into the Indica varieties, supposedly to be out sometime in 2008. That article went through all the problems and said, "Okay, they're going to have these things out in 2008." I was in Bangladesh in 2009. They still hadn't seen a single plant. I was there last year, last August and September, in both Bangladesh and Vietnam. There are now Golden Rice plants there, but they are in a lab. There are no field trials.

So, I thought it was funny because here are these people writing in Science and they hadn't even bothered to read the key article written by a great science correspondent in their own magazine.

John Robbins: In their own publication.

Michael Hansen: In their own publication — four years ago. And it is sort of ironic because what they were focusing on was a crop destruction of the Golden Rice trial in the Philippines...