All I Want for Christmas is Golden Rice

By Ruth Kava — December 8, 2017

Actually, I want more than just having Golden Rice — I want it to be widely available to people who eat rice as a staple food. And I want to see the results of that consumption in the decrease in the number of children worldwide who go blind because of vitamin A deficiency.

To recap briefly, vitamin A deficiency causes not only blindness, but also increased susceptibility to infectious diseases because of its impact on the immune system. Beta-carotene is a precursor to vitamin A, and although excess doses of vitamin A can be damaging, there has been no toxicity associated with beta-carotene.

Some have argued that the way to deal with lack of vitamin A is periodic supplementation with high-dose vitamin A, and this route is already in place in many developing countries, but high dose supplementation only lasts 4 to 6 months and thus must be repeated. According to UNICEF, in 2013, vitamin A deficiency was a widespread public health problem — in sub-Saharan Africa it affected nearly half of children between the ages of 6 to 59 months, and in South Asia, about 44 percent of such children were deemed deficient. But, the agency reported, by 2015 only 70 percent of targeted children were reached with vitamin A supplementation.

Further, even where supplementation is available, not all individuals in an area will get it — the programs are primarily focused on young children and pregnant women. But fortification of a staple food with beta-carotene could improve the status of all individuals — even adult men and non-pregnant adult women would lose their sight if they had a long-term deficiency. And some research indicates that golden rice can be as or more effective than either supplements or spinach in delivering beta-carotene to those who need it — as we reviewed here.
Yet anti-GMO activists such as Greenpeace have railed [4] against the use of this life-saving product of genetic engineering, although we've never heard them complain about using genetically engineered insulin to treat diabetes. Obviously, they pick their targets carefully.

Soon there will also be Golden Potatoes [5], genetically engineered to contain beta-carotene, which will perform a similar function for populations that depend on these tubers as dietary staples — particularly in areas of Central and West Africa. We can likely expect Greenpeace and its ilk to weigh in against these as well. However, I hope that the development and approval of these potatoes moves rapidly in spite of them, so that soon I can add them to my list of stocking stuffers!