Negative Brief: Golden Rice

By “Coach Vance” Trefethen

***Resolved: The United States federal government should substantially reform its agriculture and/or food safety policy in the United States.***

The plan tries to speed up developing countries’ adoption of genetically-modified “golden rice” by changing some federal policy (not entirely clear what policy – good question in CX and you need to demand evidence to back up any claims that the federal government is somehow blocking it). This unique yellow rice, thanks to genetic engineering, contains extra Vitamin A that prevents blindness in poor countries where millions of people have insufficient nutrition and health care.

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OPENING QUOTES / NEGATIVE PHILOSOPHY

30 years of broken promises

Dr. Marcia Ishii-Eiteman 2013 (Senior Scientist at Pesticide Action Network; worked in Asia and Africa for 14 years; PhD in Ecology and Evolutionary Biology from Cornell University) 12 Sept 2013 “Golden Rice Is Not So Golden” HUFFINGTON POST <http://www.huffingtonpost.com/dr-marcia-ishiieiteman/golden-rice-not-so-golden_b_3882900.html>

Why, after 30 years of research and millions of dollars poured into development of this supposed miracle seed, are we still talking about Golden Rice? In reality, there is no *new* news here: Golden Rice is no closer to solving the complex societal and public health problems underlying micronutrient deficiencies than before (I’ll get into that below). We are simply getting bombarded again with the same broken promises from industry and the same prickly defensive reaction from GE scientists that play out in the mainstream media with some regularity.

TOPICALITY

1. “…in the United States”

Link: Resolution says we have to change Agriculture policy “in the United States”

Violation: Affirmative plan must, in order to succeed, have poor Third World countries use Golden Rice

Changes in US policy aren’t enough to achieve the benefits of their plan. Somehow they have to get other governments to adopt it as well. Golden Rice is not designed to save lives in the United States, and none of their evidence says we need it “in the United States.” It’s for starving people in poor countries overseas, and as sad as their story may be, that’s extra-topical and can’t be debated under this year’s resolution.

Impact: No Affirmative Team

Since no one is affirming the resolution in today’s debate, no matter who wins you should write “Negative” on the ballot.

INHERENCY

1. Vitamin A deficiency already being solved in the Philippines without Golden Rice

Existing programs have substantially reduced Vitamin A deficiency

BBC News 2013 (journalist Charlotte Ashton) 6 Aug 2013 “GM rice approval 'edging closer'” <http://www.bbc.com/news/science-environment-23581877>

The Philippines government has no official position on Golden Rice, pending the results of the forthcoming tests. Through mandatory fortification of flour and voluntary fortification of widely-consumed, cheap products like instant noodles, they've already reduced Vitamin A deficiency from 40% of the population in 2003 to 15% in 2008.

Much better crop solutions already exist in the Philippines

BBC News 2013 (journalist Charlotte Ashton) 6 Aug 2013 “GM rice approval 'edging closer'” <http://www.bbc.com/news/science-environment-23581877>

In fields outside the town of Tayabas in south Luzon, Dr Chito Medina, national coordinator of charity MASIPAG, is working with farmers to improve the diversity of their crops using organic growing techniques. He argues that a more diverse harvest contains naturally high levels of Vitamin A and other nutrients, making Golden Rice redundant. "Malnutrition is a broader issue, therefore the solution needs to be broader also," he explained. "The more important thing is alleviating poverty, providing more diverse seeds to farmers so they can grow more diverse crops and having more diverse food and a more balanced diet. Then there would be no vitamin deficiencies at all. "There are so many natural sources of Vitamin A, especially in tropical countries: almost all green and leafy vegetables, yellow vegetables and fruits like mangos and cantaloupes." Dr Medina added: "We have a variety of sweet potato which has five times the level of Vitamin A than there is in Golden Rice. Ecologically, this is more sustainable and it's the way agriculture should be in the future. "Economically, it generates more income for farmers because there are fewer expenditures: they don't have to buy chemical pesticides, fertilisers or seeds."

1. Multiple international programs are solving in many countries

UN, World Bank, US Agency for International Development and other agencies are solving vitamin A deficiency with solid, inexpensive programs

Dr. Marcia Ishii-Eiteman 2013 (Senior Scientist at Pesticide Action Network; worked in Asia and Africa for 14 years; PhD in Ecology and Evolutionary Biology from Cornell University) 12 Sept 2013 “Golden Rice Is Not So Golden” HUFFINGTON POST <http://www.huffingtonpost.com/dr-marcia-ishiieiteman/golden-rice-not-so-golden_b_3882900.html> (brackets added)

Although not nearly as glitzy as Golden Rice’s high-tech, lab-based genetic manipulations, the everyday, on the ground solutions to VAD [vitamin A deficiency] and other micronutrient deficiencies continue to make considerable headway. Significant progress in many countries has been reported by the [UN Standing Committee on Nutrition](http://www.unscn.org/files/Publications/RWNS6/html/index.html), UNICEF, the World Bank, USAID and other agencies, with success attributed to the use of vitamin supplements, fortification of foodstuffs (sugar, flour, etc.) and home gardens to diversify diets and enable lasting community-based solutions. But these solid, inexpensive workhorse solutions get scant attention in the media.

Status Quo Vitamin A pill supplement programs work far better than any GMO crop could

Dr Angelika Hilbeck & Dr Hans Herren 2016 (Hilbeck - Chair, European Network of Scientists for Social and Environmental Responsibility ; researcher and lecturer on biosafety and agroecology at Swiss Federal Institute of Technology Zurich who has worked closely with farmers and civil societies in many developing countries for more than two decades, including the Philippines. Herren - Agronomist/Entomologist; worked in agricultural research and development for 27 years in Africa. Member of the [International Panel of Experts on Sustainable Food Systems](http://www.ipes-food.org/); President and Founder of Biovision Foundation for Ecological Development) 10Aug 2016 “[Millions Spent, No One Served: Who Is to Blame for the Failure of GMO Golden Rice?](https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/)” <https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/>

Supplying vitamin A or any other nutrient in isolation only works for a transitional period of time, curing a symptom at best, while work progresses on the underlying place-based causes of hunger – lack of access to food, money, education and secure living conditions. Under those circumstances, as in parts of the Philippines, cheap vitamin A pills do the job much better, in a more targeted, controlled, and effective way than any patented GM crop could ever do.

HARMS / SIGNIFICANCE

1. No lives being lost because of not eating Golden Rice

They have other foods with Vitamin A and they don’t get vitamin deficiency by eating “only” rice

Jill Richardson 2014 (PhD candidate in sociology at Univ of Wisconsin) 12 Apr 2014 “THE DISTRACTION - NON-SOLUTION OF GOLDEN RICE” <http://cleanfoodearth.blogspot.com/2014/04/the-distraction-non-solution-of-golden.html>

That said, after visiting peasant farmers on four continents, I’ve got a new perspective on hunger, malnutrition, and Golden Rice’s potential. The technology has since improved. Now, someone could actually obtain their needed vitamins by eating a realistic amount of the colorful rice. But it’s dishonest to claim that lives were lost or harmed by not eating Golden Rice starting in 2002. When I travel, I always ask families what they eat. In the Philippines, without fail, every family responded, “Rice.” *Just rice? An entire diet of rice? Hmm, maybe they need that Golden Rice.* Eventually, I tried a new approach: “What do you eat with your rice?” The answer? Lots of things. Eggplant, bananas, squash, beans, taro, okra, sweet potatoes – even vitamin A-rich sweet potato leaves.

SOLVENCY

1. Not solving the real barrier, #1: The Cartagena Protocol

Link: the Cartagena Protocol took effect in 2003 and promotes suspicion against GMO crops

Adrian Dubock 2014 (Executive Secretary, Golden Rice Humanitarian Board) The politics of Golden Rice , GM CROPS & FOOD, July/Aug/Sept 2014 <http://www.goldenrice.org/PDFs/Dubock-Politics_of_GR-2014.pdf>

The Cartagena Protocol was produced by the UN 30 years after the concerns based on lack of experience of recombinant DNA technology applied to crop plants discussed in the 1970’s, and without any reflection of the experience and knowledge gained in the intervening 3 decades. Even though the Cartagena Protocol only came into effect in 2003, the suspicion the Protocol has bred has been promulgated for the whole of the decade and a half since its publication in 2000.

Link: In most countries, except the US & Canada, the Cartagena Protocol is what’s blocking GMO crops

Adrian Dubock 2014 (Executive Secretary, Golden Rice Humanitarian Board) The politics of Golden Rice , GM CROPS & FOOD, July/Aug/Sept 2014 <http://www.goldenrice.org/PDFs/Dubock-Politics_of_GR-2014.pdf> (parentheses in original)

Research and particularly development of these GMO-crops to a point where they are useful for growers and consumers in most countries is subject to complex national and international rules arising out of the UN’s Cartagena Protocol on Biosafety to the Convention on Biological Diversity, with 167 country signatories. (The USA and Canada are not signatories.)

Link: Foreign regulations block GMOs

Laura Lloyd 2016 (journalist) “Golden Rice still struggling for acceptance in Asia” 30 Aug 2016 WORLD GRAIN News <http://www.world-grain.com/articles/news_home/World_Grain_News/2016/08/Golden_Rice_still_struggling_f.aspx?ID=%7BC92F4CE9-6F84-44BC-947F-E98D022BE8FD%7D&cck=1> (brackets added)

“I think we should salute the anti-GMO community for getting the word contamination in common use,” [Robert] Zeigler [PhD, plant pathologist and former director of International Rice Research Institute] said sardonically. “It has a very negative connotation.” He noted that many countries have “very onerous rules against the sale or distribution of GMOs that have not passed regulatory approval.”

Link: US approval irrelevant: Golden Rice will not be deployed until it’s tested and approved in each foreign country

Dr. Alexander Stein 2013 (PhD agricultural economics & social sciences) Golden Rice: What it is, what it does, and how good it is at doing it 6 Oct 2013 <http://www.ajstein.de/cv/golden_rice.htm>

Continuing its previous funding, in April 2011 the Gates Foundation announced a [US$ 10 million grant to IRRI](http://www.gatesfoundation.org/Media-Center/Press-Releases/2011/04/Nutritious-Rice-and-Cassava-Aim-to-Help-Millions-Fight-Malnutrition) to fund the development and evaluation of Golden Rice varieties for the Philippines and Bangladesh. The grant is also meant to help generating the data needed for Golden Rice to comply with food safety and environmental regulations. Thus the grant will also be used to compile the regulatory dossier to confirm that Golden Rice is indeed safe to eat; as the coordinator of the Golden Rice Network stresses: "[These crops will not be used by farmers or consumers until they pass tests for biosafety in each country](http://www.nature.com/news/2011/110414/full/news.2011.233.html)."

Link: AFF plan is about expanding Golden Rice in poor countries overseas, not the US & Canada

Impact: Having the US approve Golden Rice solves nothing

We could approve it tomorrow, it wouldn’t matter. It would still be blocked in all the countries that actually need it, and they’re blocked by a treaty they signed and ratified, and by their own governments’ attitudes and policies. Affirmative has no power to fiat that this treaty goes away or that poor countries break the treaty or change their attitudes.

1. Not solving the real barrier #2: Countries don’t want it

China, India, and Thailand don’t want Golden Rice

Laura Lloyd 2016 (journalist) “Golden Rice still struggling for acceptance in Asia” 30 Aug 2016 WORLD GRAIN News <http://www.world-grain.com/articles/news_home/World_Grain_News/2016/08/Golden_Rice_still_struggling_f.aspx?ID=%7BC92F4CE9-6F84-44BC-947F-E98D022BE8FD%7D&cck=1>

But dealing with genetically modified crops — and specifically Golden Rice — in China has been fraught. In 2013, Tufts University in Boston, Massachusetts, U.S., admitted its researchers violated ethical rules in a study feeding Golden Rice to children in China. Greenpeace in China contended scientists fed children a potentially dangerous product without informing parents, and China responded by closing down the research. The controversy “became a huge social media story and, if you look at attitudes toward GM by the Chinese public and Chinese consumers after that event, it went quite negative,” said Eric J. Wailes, Ph.D., distinguished professor of agricultural economics at the University of Arkansas, U.S. India, where childhood malnutrition is significant, has a strongly anti-GMO policy that has been influenced by attitudes prevalent in the European Union, said Zeigler. And Thailand, one of the biggest exporters of rice, has said it will never grow Golden Rice.

1. Not solving the real barrier #3: Europe is the main cause

European opposition is the “Main Cause” motivating poor countries to delay GMOs, including Golden Rice

Jorge E. Mayer 2005 (Golden Rice project manager at Campus Technologies, Freiburg Germany) The Golden Rice Controversy: Useless Science or Unfounded Criticism? Oxford Journals, BIOSCIENCE <http://bioscience.oxfordjournals.org/content/55/9/726.full>

The introduction of Golden Rice into target countries has been seriously delayed by the lengthy processes necessary to obtain permits to deploy seed for field testing. The main cause of these drawn-out procedures is that receiving countries have been influenced by the technology-rejecting position of several countries, most of them in Europe.  The European position reverberates in distant nations: Zambia, for example, rejected US donations of genetically modified maize, despite the severe grain shortage caused by a devastating drought in central and southern Africa; other nearby countries hit by the grain shortage also rejected the US-approved transgenic product.

Lack of support from the European Union is blocking Golden Rice adoption

Jorge E. Mayer 2005 (Golden Rice project manager at Campus Technologies, Freiburg Germany) The Golden Rice Controversy: Useless Science or Unfounded Criticism? Oxford Journals, BIOSCIENCE <http://bioscience.oxfordjournals.org/content/55/9/726.full>

In some cases, opposition has led to the development of policies that exclude agricultural biotechnology in national research and development funding strategies. These days, more funds seem to go into biosafety research than into product development, with the result that few product development projects capture the public interest. For example, further development and deployment of Golden Rice have suffered severely because of lack of support from the European Union.

1. No great benefit from Vitamin A

India Study: Feeding poor people a lot more vitamin A didn’t reduce deaths

Prof. Michael Latham 2010 (Nutritional Sciences, Cornell Univ.) “The Great Vitamin A Fiasco” May 2010 <http://hetv.org/pdf/the-great-vitamin-a-fiasco-world-nutrition-may2010.pdf>

A more general recent finding is from the largest ever randomised controlled trial, on De-worming and Enhanced Vitamin A (DEVTA) (7).This included 1 million rural children above the age of 6 months in the state of Uttar Pradesh in north India. Half the children were given the usual massive medicinal doses of vitamin A, and half were not. There was no significant difference in the death rates between children who received the massive dose of vitamin A and those who did not. These results were disclosed at the 2007 Istanbul meeting of the Micronutrient Forum. Very remarkably, they still have not been published in a journal.

1. Golden Rice doesn’t work

(2016) Golden Rice doesn’t grow well enough in Asia to be productive – more development needed

Laura Lloyd 2016 (journalist) “Golden Rice still struggling for acceptance in Asia” 30 Aug 2016 WORLD GRAIN News <http://www.world-grain.com/articles/news_home/World_Grain_News/2016/08/Golden_Rice_still_struggling_f.aspx?ID=%7BC92F4CE9-6F84-44BC-947F-E98D022BE8FD%7D&cck=1>

He [Robert Zeigler PhD, plant pathologist and former director of International Rice Research Institute] said Golden Rice would have to have the same yield and quality of ordinary rice, which represented a significant breeding challenge. “The materials where the Golden Rice advantage was originally put were completely unsuitable for Asian rice projection conditions,” he said. “So there was a major breeding undertaking to get those genes together in a material farmers would grow.” He continued, “The kind of setbacks and false starts that happened in developing this trait was something that kept me up at night.” As things currently stand, yields of Golden Rice grown, at least in the Philippines, aren’t as consistent as yields of conventional rice.

(2016) Decades of research and money, but Golden Rice (even the new GR-2 version) still doesn’t work

Dr Angelika Hilbeck & Dr Hans Herren 2016 (Hilbeck - Chair, European Network of Scientists for Social and Environmental Responsibility ; researcher and lecturer on biosafety and agroecology at Swiss Federal Institute of Technology Zurich who has worked closely with farmers and civil societies in many developing countries for more than two decades, including the Philippines. Herren - Agronomist/Entomologist; worked in agricultural research and development for 27 years in Africa. Member of the [International Panel of Experts on Sustainable Food Systems](http://www.ipes-food.org/); President and Founder of Biovision Foundation for Ecological Development) 10Aug 2016 “[Millions Spent, No One Served: Who Is to Blame for the Failure of GMO Golden Rice?](https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/)” <https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/>

No functioning vitamin A rice has been produced in over 20 years of research. This is despite full support at every level: financial, institutional, political, and corporate. By ‘functioning’, we mean farmer’s rice varieties that reliably and stably express sufficient amounts of beta-carotene (pro-vitamin A, the precursor of Vitamin A) over many generations of seed saving. These seeds must continuously express beta-carotene at a level that has been documented to be efficiently convertible to Vitamin A in mammals and, most importantly, can (statistically) significantly relieve the symptoms of Vitamin A deficiency in hungry people. None of this is scientifically trivial but that’s what has been promised. The first golden rice, GR1, was unsuccessful and is long gone. [Golden rice 2](https://www.isaaa.org/resources/publications/briefs/20/download/isaaa-brief-20-2000.pdf)(GR2) is a [patented pro-vitamin A GM rice](http://www.goldenrice.org/Content2-How/how9_IP.php) developed from scratch [by the multinational biotech firm Syngenta](https://www.grain.org/article/entries/10-grains-of-delusion-golden-rice-seen-from-the-ground) and still in the field trial stage at the International Rice Research Institute (IRRI) at least one decade after it’s creation. The vast majority of scientists in the world will never see such comprehensively generous support for their research – yet they still deliver, and must deliver if they ever want to renew funding for their research. This is more than can be said for the golden rice project.

Golden Rice advocates say it’s not finished being developed, still needs more research, isn’t commercially ready

Janelle Dumalaon 2015 (journalist) 25 Aug 2015 “Golden Rice: a shining solution, or an impending danger?” <http://www.dw.com/en/golden-rice-a-shining-solution-or-an-impending-danger/a-18670353>

The golden rice debate isn’t going to end anytime soon - partly because the product isn't on the market yet. The IRRI recently reported setbacks on their newest data: right now the rice doesn't produce the same yields as other industrial varieties and can't compete commercially. IRRI’s Tolentino said researchers are working on breeding the rice to address the yield aspect. If they succeed, they will have to apply for a regulatory permit to test the new variety in an open field. Only after that would the seed be registered onto the standard seed regulatory system for the government and private seed growers to use in the market.  “It will take awhile. We’re still only at the breeding stage,” he said. “It can be anywhere from at least two years to five years from today.”

Insufficient study has been conducted to prove whether Golden Rice will work

Dr. Marcia Ishii-Eiteman 2013 (Senior Scientist at Pesticide Action Network; worked in Asia and Africa for 14 years; PhD in Ecology and Evolutionary Biology from Cornell University) 12 Sept 2013 “Golden Rice Is Not So Golden” HUFFINGTON POST <http://www.huffingtonpost.com/dr-marcia-ishiieiteman/golden-rice-not-so-golden_b_3882900.html> (brackets added)

Can Golden Rice really accomplish this laudable goal in an efficient and effective way, or at least contribute enough to the battle against VAD [vitamin A deficiency] to justify its expense? In considering this, it’s important to get to the bottom of the following questions 1. After storing and cooking, will there be sufficient carotenoid levels left in Golden Rice to have an impact? 2. How much remaining carotenoid will actually be “bioavailable” for already malnourished bodies to convert? 3. And are there likely, unintended health and safety risks associated with consuming Golden Rice? We don’t know the answers to these questions, in large part because the [necessary studies](http://www.foodwatch.nl/foodwatch-nl/foodwatch/content/e6380/e49257/e49269/2012_gen-reis_englisch_final_ger.pdf)have not been completed (two flawed and [controversial](http://www.rsc.org/chemistryworld/2013/01/ethical-failings-golden-rice-trial) studies notwithstanding). Or if they have been conducted, they have not been published or released for public and independent scientific scrutiny. What we do know suggests that there are still [pretty significant hurdles](http://gmwatch.org/index.php/news/archive/2013/15023-golden-rice-myths) to be overcome by the Golden Rice developers, if their product is to have any relevance.

1. No rollout plan

AFF (and poor governments) have no roll-out plan to get the rice to those who need it, and the infrastructure doesn’t exist (or they’d be solving the problem today)

Dr Angelika Hilbeck & Dr Hans Herren 2016 (Hilbeck - Chair, European Network of Scientists for Social and Environmental Responsibility ; researcher and lecturer on biosafety and agroecology at Swiss Federal Institute of Technology Zurich who has worked closely with farmers and civil societies in many developing countries for more than two decades, including the Philippines. Herren - Agronomist/Entomologist; worked in agricultural research and development for 27 years in Africa. Member of the [International Panel of Experts on Sustainable Food Systems](http://www.ipes-food.org/); President and Founder of Biovision Foundation for Ecological Development) 10Aug 2016 “[Millions Spent, No One Served: Who Is to Blame for the Failure of GMO Golden Rice?](https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/)” <https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/>

A missing roll-out plan  
But even if the golden rice researchers do eventually manage to get some GM pro-Vitamin A rice varieties to perform agronomically, there seems to be no roll-out plan to ensure that it gets to those who need it. Those reasons have nothing to do with regulations and everything to do with logistics, institutions and finances. Will the golden rice developers truck their harvest into the urban slums and remote rural areas of Asia or Africa, or at least the Philippines, every day? Will they bring with them also the fat that malnourished people need to eat along with the rice to ensure they absorb the beta-carotene and convert it to vitamin A? And if they can do that, why aren’t they bringing existing foods into those areas already? Why wait until a patented GM food is ready for delivery?

1. Foreign government marketing campaigns required

Link: AFF has no power to do Golden Rice marketing in foreign countries (that would be extra-topical)

Impact: Golden Rice won’t catch on until governments that want it (which there aren’t many) do marketing for it

Laura Lloyd 2016 (journalist) “Golden Rice still struggling for acceptance in Asia” 30 Aug 2016 WORLD GRAIN News <http://www.world-grain.com/articles/news_home/World_Grain_News/2016/08/Golden_Rice_still_struggling_f.aspx?ID=%7BC92F4CE9-6F84-44BC-947F-E98D022BE8FD%7D&cck=1> (brackets added)

[PhD, plant pathologist and former director of International Rice Research Institute, Robert] Zeigler said rice markets in the Philippines and Bangladesh are partly controlled by a government food authority that sets the price of rice. In addition, “there is quite a lively market in the rice trade,” he said, with farmers making their own planting decisions. “Farmers are businesspeople and will grow a crop to make a profit,” he said. “If there is not demand for Golden Rice beyond just regular rice, they will only grow Golden Rice if they get a good yield and a good price for it.” Zeigler firmly believes demand for Golden Rice will ratchet higher when governments make an effort to spread the news about its significant health benefits. “It will require a marketing effort to educate consumers,” he said. “It’s a legitimate role for the public sector. NGO’s would be involved. I hope religious entities become involved, as for anything that improves the health of children.”

DISADVANTAGES

1. Masking disadvantage: Better food solutions blocked

Effort spent on Golden Rice pulls money and resources away from better solutions that really work

Dr. Marcia Ishii-Eiteman 2013 (Senior Scientist at Pesticide Action Network; worked in Asia and Africa for 14 years; PhD in Ecology and Evolutionary Biology from Cornell University) 12 Sept 2013 “Golden Rice Is Not So Golden” HUFFINGTON POST <http://www.huffingtonpost.com/dr-marcia-ishiieiteman/golden-rice-not-so-golden_b_3882900.html>

The bigger problem with the narrow technical fixes favored by the biotech industry and lab scientists, however, is that they [fail](http://www.foodpolitics.com/2013/08/proponents-of-food-biotechnology-are-still-talking-about-golden-rice-sigh/) to take into account the complex underlying social, economic, political and cultural drivers of micronutrient deficiencies and malnutrition. So far, Golden Rice has swallowed up millions of research dollars over the past two decades and filled our media outlets with hype — but has failed to deliver. This failure is particularly harmful when one considers the enormous opportunity costs of the effort: diversion of attention, precious resources and support away from the established solutions that really work.

Impact 1: Turn the AFF harms. Whatever harms they claim get worse if existing working solutions aren’t used

1. Masking disadvantage: Social solutions blocked

Link: Effort spent on Golden Rice distracted effort and money away from solving the root causes of poverty and hunger . Impact: Countless poor could have had a higher standard of living

Jill Richardson 2014 (PhD candidate in sociology at Univ of Wisconsin) 12 Apr 2014 “THE DISTRACTION - NON-SOLUTION OF GOLDEN RICE” <http://cleanfoodearth.blogspot.com/2014/04/the-distraction-non-solution-of-golden.html>

Vitamin A isn’t rare in food. And it’s not the only nutrient that malnourished people worldwide lack. The malnourished people I met in my travels did not only lack this nutrient or that one – they simply lacked food. Like a Kenyan school where many kids did without breakfast and lunch every day. Some had to work in a quarry after school just to earn money to eat. Good bet those kids needed vitamin A — and every other vitamin, mineral, protein, fat, and just plain old calories. Golden Rice isn’t the best solution in such cases. It’s solving the root causes of poverty and hunger. That means ending injustice and corruption, providing access to water, secure land tenure, and birth control, taking on the climate crisis, and dealing with HIV/AIDS, among other things. Big Ag and biotech firms spent more than two decades developing Golden Rice. That gusher of money, time, and resources could have solved some of the broader, overarching, and easy-to-fix problems peasant farmers face. By focusing on the real, underlying problems instead of a narrowly defined nutrient deficiency, countless numbers of people could have enjoyed a higher standard of living.

Link & Impact: AFF is doomed to fail because the poor suffer from malnutrition in ALL nutrients, not just Vitamin A

Dr Angelika Hilbeck & Dr Hans Herren 2016 (Hilbeck - Chair, European Network of Scientists for Social and Environmental Responsibility ; researcher and lecturer on biosafety and agroecology at Swiss Federal Institute of Technology Zurich who has worked closely with farmers and civil societies in many developing countries for more than two decades, including the Philippines. Herren - Agronomist/Entomologist; worked in agricultural research and development for 27 years in Africa. Member of the [International Panel of Experts on Sustainable Food Systems](http://www.ipes-food.org/); President and Founder of Biovision Foundation for Ecological Development) 10Aug 2016 “[Millions Spent, No One Served: Who Is to Blame for the Failure of GMO Golden Rice?](https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/)” <https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/>

Leaving aside its scientific aspects, the very concept of golden rice – and all other similar conceptual approaches as solutions to malnourishment – remain doomed from the start as similar approaches have failed repeatedly. The problem lies in the underlying reductionist (disembedded) approach. Combating hunger and malnutrition one vitamin and mineral at a time is a failed ideology, no matter which vitamin or mineral one starts with and which kind of delivery system one chooses. Malnourished people do not suffer from single-vitamin-deficiencies added up. They suffer from hunger, as in ‘lack of food’. This is compounded by poverty and a myriad of contributing factors working simultaneously together. That means they lack regular access to real foods containing the necessary variety of ALL essential nutrients, which, in conjunction, make up a healthy diet.

1. Healthy kids get sicker

Link: Not all kids in poor countries have Vitamin A deficiency. Those that don’t will get sicker if they consume too much Vitamin A

Prof. Michael Latham 2010 (Nutritional Sciences, Cornell Univ.) “The Great Vitamin A Fiasco” May 2010 <http://hetv.org/pdf/the-great-vitamin-a-fiasco-world-nutrition-may2010.pdf>

A 2003 meta-analysis of the impact of capsule programmes on child morbidity from diarrhoea and respiratory infections (42) used 9 randomised control trials, including one in which I had been involved (43). It concluded that ‘the combined results indicated that vitamin A supplementation has no consistent overall protective effect on the incidence of diarrhoea’. It also said that supplementation ‘slightly increases the incidence of respiratory tract infections’. For this reason it concluded that: ‘High dose vitamin A supplements are not recommended on a routine basis for all preschool children, and should be offered only to individuals or populations with vitamin A deficiency’ (43). These recommendations have been ignored. Why do medicinal doses of supplements appear to worsen respiratory infections especially in healthy children? The authors, and others, provide a reasonable rationale. For example, the massive doses might cause immune dysregulation, due to massive non-physiological doses of the vitamin, especially in children with good vitamin A status. Some animal studies have shown that excess vitamin A depresses humoral and cellular immune responses. The findings that high doses of vitamin A, especially in well nourished children, have adverse impacts on respiratory infections, should surely be grounds for serious concern.

Works Cited: Golden Rice

1. Dr. Marcia Ishii-Eiteman 2013 (Senior Scientist at Pesticide Action Network; worked in Asia and Africa for 14 years; PhD in Ecology and Evolutionary Biology from Cornell University) 12 Sept 2013 “Golden Rice Is Not So Golden” HUFFINGTON POST <http://www.huffingtonpost.com/dr-marcia-ishiieiteman/golden-rice-not-so-golden_b_3882900.html>
2. BBC News 2013 (journalist Charlotte Ashton) 6 Aug 2013 “GM rice approval 'edging closer'” <http://www.bbc.com/news/science-environment-23581877>
3. Dr Angelika Hilbeck & Dr Hans Herren 2016 (Hilbeck - Chair, European Network of Scientists for Social and Environmental Responsibility ; researcher and lecturer on biosafety and agroecology at Swiss Federal Institute of Technology Zurich who has worked closely with farmers and civil societies in many developing countries for more than two decades, including the Philippines. Herren - Agronomist/Entomologist; worked in agricultural research and development for 27 years in Africa. Member of the International Panel of Experts on Sustainable Food Systems; President and Founder of Biovision Foundation for Ecological Development) 10Aug 2016 “Millions Spent, No One Served: Who Is to Blame for the Failure of GMO Golden Rice?” <https://www.independentsciencenews.org/health/millions-spent-who-is-to-blame-failure-gmo-golden-rice/>
4. Jill Richardson 2014 (PhD candidate in sociology at Univ of Wisconsin) 12 Apr 2014 “THE DISTRACTION - NON-SOLUTION OF GOLDEN RICE” <http://cleanfoodearth.blogspot.com/2014/04/the-distraction-non-solution-of-golden.html>
5. Adrian Dubock 2014 (Executive Secretary, Golden Rice Humanitarian Board) The politics of Golden Rice , GM CROPS & FOOD, July/Aug/Sept 2014 <http://www.goldenrice.org/PDFs/Dubock-Politics_of_GR-2014.pdf>
6. Laura Lloyd 2016 (journalist) “Golden Rice still struggling for acceptance in Asia” 30 Aug 2016 WORLD GRAIN News <http://www.world-grain.com/articles/news_home/World_Grain_News/2016/08/Golden_Rice_still_struggling_f.aspx?ID=%7BC92F4CE9-6F84-44BC-947F-E98D022BE8FD%7D&cck=1>
7. Dr. Alexander Stein 2013 (PhD agricultural economics & social sciences) Golden Rice: What it is, what it does, and how good it is at doing it 6 Oct 2013 http://www.ajstein.de/cv/golden\_rice.htm
8. Jorge E. Mayer 2005 (Golden Rice project manager at Campus Technologies, Freiburg Germany) The Golden Rice Controversy: Useless Science or Unfounded Criticism? Oxford Journals, BIOSCIENCE <http://bioscience.oxfordjournals.org/content/55/9/726.full>
9. Prof. Michael Latham 2010 (Nutritional Sciences, Cornell Univ.) “The Great Vitamin A Fiasco” May 2010 <http://hetv.org/pdf/the-great-vitamin-a-fiasco-world-nutrition-may2010.pdf>
10. Janelle Dumalaon 2015 (journalist) 25 Aug 2015 “Golden Rice: a shining solution, or an impending danger?” <http://www.dw.com/en/golden-rice-a-shining-solution-or-an-impending-danger/a-18670353>