

LAB MADE BREAST MILK AND LAB MADE MEAT

Vandana Shiva

Technologies are tools and they need to be assessed on ethical, social and ecological criteria as well as in the context of contributing to the wellbeing of all.

The Biodiversity of the soil, of the plants and our gut microbiome is one continuum.

Today, most people are now aware that what you eat directly affects the state of your health. As countless studies have shown, industrial chemical-based food is a major contributor to ill health and a root cause of disease¹.

Despite this, rather than shifting to ecological food and agriculture - which works in alignment with the laws of nature and the ecology of our bodies, Big Tech and the billionaires, with Bill Gates leading the way, are now investing in hyper-industrial food developed in laboratories, beginning with breast milk.

Our first food is milk from the breast. Breast feeding is a living relationship, it is an ecological, biological activity, which deepens the bond between the mother and baby. Breast milk contains all the nutrients for neural development and creates immunity to many diseases. Nutrients and antibodies are passed to the baby, while hormones are released into the mother's body².

Breast milk is not a product which can be substituted with industrial products, artificially made in factories and laboratories.

Artificially created milk lacks the many natural benefits found in breast milk. UNICEF estimates that a formula-fed child living in disease-ridden and unhygienic conditions is between 6 and 25 times more likely to die of diarrhea and four times more likely to die of pneumonia than a breastfed child³.

The mechanized and industrialized vision of society promoted by big business and the industrial Baby Food industry has eroded the culture of breast feeding, particularly in the western world. The International Breast Feeding Action Network⁴ was created primarily aimed at Nestle, the world's leading producer of food for infants.

¹ "Food for Health Manifesto." *Navdanya International*, May 1, 2019.

<https://navdanyainternational.org/publications/manifesto-food-for-health/>

² CDC. "CDC and Breastfeeding." *Centers for Disease Control and Prevention*. Last modified August 14, 2020. <https://www.cdc.gov/breastfeeding/index.htm>

³ "Improving Breastfeeding, Complementary Foods and Feeding Practices." *UNICEF*.

https://www.unicef.org/nutrition/index_breastfeeding.html

⁴ "IBFAN – International Baby Foods Action Network," n.d. <https://www.ibfan.org/>

Concern that the dramatic increase in mortality, malnutrition and diarrhoea in very young infants in the developing world was associated with the aggressive marketing of formula for breast milk substitutes, in May 1981 the WHO International Code of Marketing Breast Milk Substitutes passed by 118 votes to 1, the US casting the sole negative vote⁵.

Despite the known hazards caused by breast milk substitutes and notwithstanding regulations, the race for developing substitutes for breast milk has intensified.

Bill Gates' climate change investment firm, Breakthrough Energy Ventures, has invested \$3.5 million into "Biomilq"⁶ which is targeting infant nutrition by attempting to reproduce mother's breast milk in a laboratory as a solution to climate change! No surprise of course that there is a patent pending for Biomilq⁷.



Photo: evilpeacock/flickr

The explosion of chronic diseases with the increase in factory farming and industrial food production and processing has already shown that artificially produced food is neither good for people's health nor good for the planet's health.

Those who are contributing to the collapse of the planet and of our wellbeing have joined hands in creating hyper-industrial toxic diets in the name of protecting our health and saving the planet.

The creation of **the Impossible Burger** is a case in point.

The "Impossible Burger", based on vast monocultures of GMO Roundup-sprayed soya cannot be considered a "safe" option, both for its high levels of

⁵ Brady, June Pauline. "Marketing Breast Milk Substitutes: Problems and Perils throughout the World." *Archives of Disease in Childhood* 97, no. 6 (March 14, 2012): 529–532. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3371222/>

WHO. "Countries Failing to Stop Harmful Marketing of Breast-Milk Substitutes, Warn WHO and UNICEF." Last modified May 27, 2020. <https://www.who.int/news-room/detail/27-05-2020-countries-failing-to-stop-harmful-marketing-of-breast-milk-substitutes-warn-who-and-unicef>

⁶ Roy, Aditi. "Bill Gates' Climate-Change Investment Firm Bets on Lab-Produced Breast Milk." *CNBC*. Last modified June 16, 2020. <https://www.cnbc.com/2020/06/16/biomilq-raises-3point5-million-from-bill-gates-investment-firm.html>

"Mother Cultured Breastmilk | BIOMILQ | United States." *BIOMILQ*. <https://www.biomilq.com>

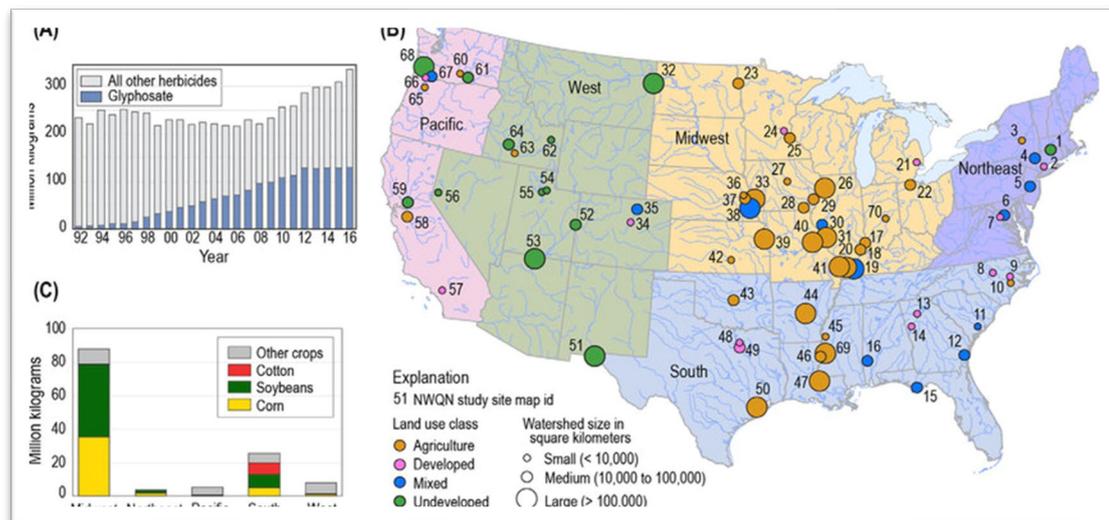
⁷ Watson, Elaine,. "BIOMILQ Raises \$3.5m to Fund Mammary Cell-Cultured Human Breastmilk Platform, Disrupt Infant Nutrition Market." *Foodnavigator-Usa.Com*. Last modified June 16, 2020. <https://www.foodnavigator-usa.com/Article/2020/06/16/BIOMILQ-raises-3.5m-to-fund-mammary-cell-cultured-human-breastmilk-platform-disrupt-infant-nutrition-market>

glyphosate, recognized as being carcinogenic to humans, and for its effect on our gut microbiome⁸.

Roundup-sprayed GMO soya has already caused massive ecological devastation⁹ as well as chronic worldwide health problems¹⁰¹¹.

Promoting GMO soya 'plant-based meat' as 'fake and healthy meat' is misleading the eater both in terms of the origins of the burger and, most importantly, on claims of its safety. The Impossible burger is marketed promoting the myth that protein comes essentially from animals and now from "meat" produced in a lab by using GMO soya, manipulating people into forgetting that we have been getting our protein down the ages from the diversity of plants.

As Zen Honeycutt of Moms Across America states: "The levels of glyphosate detected in the Impossible Burger by Health Research Institute Laboratories were 11 times higher than the Beyond Meat Burger. This new product is being marketed as a solution for "healthy" eating, when in fact 11 ppb of glyphosate herbicide consumption can be highly dangerous"¹².



(a) Estimated annual agricultural glyphosate use relative to total herbicide use in the United States; (b) location of National Water Quality Network (NWQN) sites by region and classification by watershed land use; and (c) estimated 2016 regional glyphosate use by crop (Baker, 2018).¹³

⁸ Shiva, Vandana. "Fake Food, Fake Meat: Big Food's Desperate Attempt to Further the Industrialisation of Food." *Navdanya International*, June 18, 2019. <https://navdanyainternational.org/fake-food-fake-meat-big-foods-desperate-attempt-to-further-the-industrialisation-of-food/>

⁹ "Engineering an Environmental Disaster." *Earthjustice*. Last modified March 27, 2015. <https://earthjustice.org/features/engineering-an-environmental-disaster-2>

¹⁰ Ellis, Glenn. "Argentina's Bad Seeds." *Al Jazeera*. Last modified March 14, 2013. <https://www.aljazeera.com/programmes/peopleandpower/2013/03/201331313434142322.html>

¹¹ Shiva, Vandana. "The Pulse of Life." *The Asian Age*. Last modified January 27, 2016. <http://www.asianage.com/columnists/pulse-life-681>

¹² Honeycutt, Zen. "GMO Impossible Burger Positive for Carcinogenic Glyphosate." *Moms Across America*. Last modified May 16, 2019. https://www.momsacrossamerica.com/gmo_impossible_burger_positive_for_carcinogenic_glyphosate

¹³ Image source: Medalie, Laura & Baker, Nancy & Shoda, Megan & Stone, Wesley & Meyer, Michael & Stets, Edward & Wilson, Michaelah. (2019). Influence of land use and region on

Roundup Ready crops, which have led to an increase of 1,500% in Roundup spraying in the USA, failed in their primary objective of weed control¹⁴. Weeds evolved resistance to Roundup and have become "superweeds" requiring more and more lethal herbicides. Beneficial plants like amaranth have turned into superweeds. Bill Gates and DARPA are even calling for the use of gene drives to exterminate amaranth¹⁵, a sacred and nutritious food in India, since the Palmer Amaranth became a superweed in the Roundup Ready maize fields of the USA.

The following statement by Pat Brown, ¹⁶, CEO & Founder of Impossible Foods is most revealing.

He states, "If there's one thing that we know, it's that when an ancient unimprovable technology counters a better technology that is continuously improvable, it's just a matter of time before the game is over." He added, "I think our investors see this as a \$3 trillion opportunity."

Here we have a perfect example of the mechanistic and profit-based mindset which governs the extractive global system of producing food. For Brown and the fake food-promoting billionaires, real living food that nourishes our health is an "unimprovable technology".

The production of fake food is clearly about patents, profits and control with no regard or concept of the essence of life, the web of life and the vital role of living food in our health and that of the environment.

Patents are instruments of extracting royalties and rents by creating an artificial system to displace natural systems that are affordable, biodiverse, renewable and healthy, such as in the case of Monsanto trying to patent seeds to profit from farmers¹⁷ ¹⁸. The Impossible Burger today has no less than 15 patents for the processes of making artificial food¹⁹.

The sudden awakening to "plant-based diets" based on hyper-industrialized processing, including use of GMO soya, is an ontological violation of food as a living system which connects us to the ecosystem and other beings. It also indicates

glyphosate and aminomethylphosphonic acid in streams in the USA. *Science of The Total Environment*. 707. 136008. 10.1016/j.scitotenv.2019.136008.

¹⁴ Benbrook, Charles M. "Trends in Glyphosate Herbicide Use in the United States and Globally." *Environmental Sciences Europe* 28, no. 1 (February 2, 2016): 3.

<https://enveurope.springeropen.com/articles/10.1186/s12302-016-0070-0>

¹⁵ Shiva, Vandana. "Biodiversity, GMOs, & Gene Drives of the Militarised Mind." *Seed Freedom*. Last modified July 7, 2016. <https://seedfreedom.info/biodiversity-gmos-gene-drives-of-the-militarised-mind/>

<https://seedfreedom.info/biodiversity-gmos-gene-drives-of-the-militarised-mind/>

¹⁶ Mitroff, Sarah. "Where to Get the Impossible Burger: Red Robin, Burger King, White Castle, Little Caesars and More." *CNET*. <https://www.cnet.com/health/where-to-buy-the-impossible-burger-2-0-fast-food-and-chain-restaurants/>

¹⁷ Shiva, Vandana. "Monsanto vs Indian Farmers." *Seed Freedom*. Last modified March 27, 2016. <https://seedfreedom.info/monsanto-vs-indian-farmers/>

¹⁸ "Patents Assigned to Monsanto Technology LLC - Justia Patents Search".

<https://patents.justia.com/assignee/monsanto-technology-llc>

¹⁹ Itzkan, Seth. "Opinion: Software to Swallow — Impossible Foods Should Be Called Impossible Patents." *Medium*. Last modified May 27, 2020. <https://medium.com/@sethitzkan/opinion-software-to-swallow-impossible-foods-should-be-called-impossible-patents-71805ecec9de>

ignorance of the diversity of cultures that have always used a diversity of plants in their diets.

Artificial lab food reduces real food to industrial raw material and promotes large scale monocultures of industrial farming for supply of raw material.

As Bob Reiter, Bayer's head of research and development in reference to plant-based meat companies: "They are sourcing different types of crops, and that also could create opportunity for us, being a company that is a plant-breeding company"²⁰.

Oblivious of the clearly growing shift to agroecology and organic food with more and more communities creating local, diversity-based, ecological, systems of growing food, the Poison Cartel continues to manipulate and promote new industrially- based markets.



Biodiversity Festival at Navdanya, 2018

Through fake food, health, indigenous food cultures, evolution, biodiversity, and the web of life are being disparaged as "ancient unimprovable technologies"²¹, totally ignorant of the sophisticated knowledges that have evolved in diverse agricultural and food cultures, in diverse climate and ecosystems to sustain and renew the biodiversity, the ecosystems, and the health of people and of the planet which have so far allowed humanity to survive.

²⁰ "Bayer Sees Potential Future Business in Plant-Based Meat Market." *Reuters*, August 1, 2019. <https://www.reuters.com/article/us-bayer-agriculture-food-idUSKCN1UR5SF>

²¹ Pointing, Charlotte. "Vegan Meat Category Is a '\$3 Trillion Opportunity.'" *LIVEKINDLY*, March 6, 2019. <https://www.livekindly.co/vegan-meat-category-3-trillion-opportunity/>

Our knowledge of Food for Health is being erased.

At a time when movements across the world are growing and getting stronger for a GMO and chemical-poison-free future²², and independent scientists are establishing the links between cancer and vital organ failure and chemicals such as glyphosate (Roundup) which go hand in hand with GMOs²³, these destructive tools are being given a new lease on life through artificial lab food as Big Tech, Big Food and Big Pharma become one in the Gates Empire.

Artificial, ultra-processed food will further spread chronic diseases. The “market” in sickness and disease will continue to grow. With an expanding market of ill-health, so too profits for the 1% will keep growing.

The reality by now should be clear: Industrial food is the basis of disease, whereas Organic biodiversity-based food is the basis of health²⁴.

A recent study has shown that a week of eating organic food reduces glyphosate levels by 70%²⁵.



“Roti, Gujarat

Fake food is building on a century and a half of food imperialism and food colonization of our diverse food knowledges and cultures. Decolonisation of food is at the heart of protecting the health of the planet and people.

Food is the basis of life and freedom. In times of Digital Dictatorship freedom begins with food. Food Freedom is an inviolable right.

²² “Poison-Free Food and Farming 2030.” *Navdanya International*, January 30, 2019.

<https://navdanyainternational.org/cause/poison-free-food-and-farming-2030/>

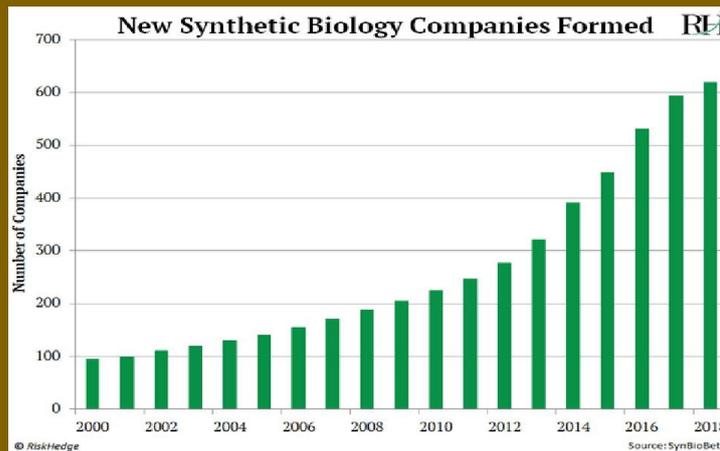
²³ Hedlund, Baum. “Roundup Cancer Study Summaries | Glyphosate Linked to Health Issues.” *Baum Hedlund*, n.d. <https://www.baumhedlundlaw.com/toxic-tort-law/monsanto-roundup-lawsuit/roundup-cancer-study/>.

²⁴ Shiva, Vandana. “Ecological Reflections on the Corona Virus.” *Jivad – The Vandana Shiva Blog*, March 18, 2020. <https://www.navdanya.org/bija-reflections/2020/03/18/ecological-reflections-on-the-corona-virus/>

²⁵ “Organic Diet Intervention Significantly Reduces Urinary Glyphosate Levels in U.S. Children and Adults.” *Environmental Research* (August 11, 2020): 109898.

THE WORLD'S TECH FOUNDERS ARE MASSIVELY INVESTING IN SYNTHETIC BIOLOGY

The industry of Synthetic Biology is booming. It has reached a worth of 12 billion dollars over the past decade (of which 3.8 billion dollars make up only last year)- and is expected to double by 2025. In the last twenty years the number of companies specialising in this field have increased from less than 100 in 2000, to over 600 this year.



Synthetic Biology involves reconfiguring the DNA of an organism to create something entirely new, allowing for limitless applications in multiple fields, such as “fake meat” and other “fake foods”, to agriculture, to new engineered raw materials, and pharmaceuticals.

Among the largest investors in this sector is Microsoft founder Bill Gates. His early investments include Beyond Meat, Ginkgo Bioworks– which is developing custom-built microbes– as well as Pivot Bio, a biotech startup that focuses on making nitrogen fixing microbes.

Eric Schmidt, co-founder of Google has invested in several synthetic biology companies through early-stage venture capital firm Innovation Endeavours. His synthetic biology portfolio includes Zymergen, Bolt Threads, GRO Biosciences, and Ukko.

Peter Thiel, co-founder of PayPal, Palantir Technologies, and Founders Fund, a world-renowned VC firm and, also, the first investor in Facebook, has invested along with Schmidt in Bolt Threads, and is also backing Synthego and Emerald Cloud Lab.

Marc Andreessen, founder of Netscape and Andreessen Horowitz invested in Benchling—a company that offers tools to engineer DNA digitally.

Other high-profile investors in synthetic biology include Vinod Khosla (Sun Microsystems), Jerry Yang (Yahoo!), Bryan Johnson (Venmo), and Max Levchin (PayPal)¹.

¹ Source: Garret, Olivier. “Why Bill Gates Is Betting Millions On Synthetic Biology.” *Forbes*, September 10, 2020. <https://www.forbes.com/sites/oliviergarret/2020/09/10/why-bill-gates-is-betting-millions-on-synthetic-biology/>