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# The Dark Side of Lab-Grown "Milk"

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Consumers opt for plant-based foods for many reasons—perceptions of health benefits, concerns about the ethics of consuming animals or concerns about the environment. This trend has food producers partnering with niche

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companies to use ultra-processing and fermentation technology to create inexpensive food components (e.g. proteins, starches and oils) which can be used to produce trendy items with substantial profit margins. One thinker opined that “[veganism is a capitalist industrial dream \[of\] boxed products \[and\] ultra-processed fake foods that are completely disconnected from nature.](#)”

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The company, Perfect Day Inc., for instance, has successfully used genetically modified microflora in a fermentation process to generate whey and casein all without actually relying on cows to produce it. They claim that the resulting products are identical to conventional cow’s milk but are vegan and lactose-free. Some scientists speculate there is not enough information to know if this kind of food production is [actually safe](#).

This technology could be devastating to the dairy industry as detailed in a report from American think tank – RethinkX. They posit that by 2030 “[modern food products will cost less than half as much to produce as the animal-derived products they replace,](#)” predicting that the dairy market will be particularly hard-hit, shrinking by 90% of sales by volume. The cost of fermentation technologies has plummeted dramatically from \$1m USD per kilo in 2000 to \$100 in 2019, and are expected to reach rates of \$10 per kilo by 2023, resulting in lab-produced protein materials that are five times cheaper by 2030.

These inexpensive ingredients are extremely attractive for companies looking to boost sales margins — cheaper materials combined into trendy in-demand items makes this technology hugely attractive to businesses looking to bring in larger profits. Companies could replace proteins found in a wide number of food products from fruit and vegetable waxes to processed meats and even sugars. The global marketplace is already experiencing a surplus of milk proteins from conventional sources and these substances would further saturate the supply.

Whether these lab-produced proteins would actually be more environmentally-friendly is unclear. Reproducing milk proteins in a lab would appear to offer a [streamlined process that reduces the space and resources needed for conventionally-raised dairy](#), but the true carbon footprint of large multinational corporations controlling the generation, processing, and transport of these substances is unknown. What happens when real food is a distant memory? Is that the kind of future we are facing?

Synthesized milk-components also come at a cost to [local economies and the livelihoods of many reliant on animal husbandry throughout the world](#). Tangible evidence points to the importance of animal-based proteins in economically-struggling countries. Drinking milk has been shown to particularly benefit malnourished children. Raising livestock provides a source of nutrition as well as economic security.

The impact of advocating for “plant-based” eating is widespread — influencing farmers at a local level; shifting the recommendations of international organizations; and reverberating within countries struggling with malnourishment and hunger. So-called “Big Business” have a vested interest in promoting food policies that can benefit their bottom-line. [By heavily advocating for plant-based alternatives they are able to piggy-back on consumer concerns about climate change and health outcomes.](#) These lab-grown food materials may prove to be more harmful to local food economies and result in reduced access to wholesome and nutrient-dense foods rather than provide a solution to issues of hunger and malnourishment. Whether consumers will actually purchase lab-grown products rather than conventionally-raised ones is questionable, particularly as the conversation turns towards understanding the darker side of this technology.

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