

CASE STUDY



perfectdayfoods.com



What do you do if your mission is to be a vegan but you absolutely love dairy products? You use science to find a way to create high-quality animal-free dairy, and that is exactly what Ryan Pandya and Perumal Gandhi did when they created Perfect Day Foods.

We had the fantastic opportunity to talk with Ryan, one of the founders, to understand more about what was behind the start of Perfect Day and what the company envisages as the future for cellular milk.

CELLULAR MILK

What was your motivation to set up Perfect Day foods?

It was very much a mission-led motivation. In college our concerns about the impact of our diets on animal welfare and the environment grew. Although Perumal and I both grew up eating meat and dairy we decided to go vegetarian to reduce our impact on the planet. The transition to vegetarian was easy, we just ate more eggs and dairy to compensate for not eating meat. After further research we decided that eggs and dairy were contributors to the problem so we looked to give them up as well, however, this was incredibly difficult.

We weren't overly enthused with alternative-based dairy products as we felt they had no nutrition, tasted really bad and cost more money. We realised that if it was hard for us, then it would be extremely difficult for the vegan movement to globally scale to a point that it could remove the need for factory farming. If it was so hard for them - even though they were so incredibly mission-driven - then there was no way this movement could scale across the world with such substandard products. So, in short, it was the desire to not eat bad food. Because we both had scientific backgrounds we just started to think about what's so magical about dairy, and research showed us that milk protein is what gives milk its magic.

How did you discover a process for animal free milk?

The process is called fermentation and it has been used for the last 40 years with the first application in biotechnology when vegetarian cheese was made. The original method used an enzyme called rennet which came from the gut of a calf, which didn't make sense if you want to be vegetarian. So, we devised a method where we could ferment the milk protein by using the protein DNA sequence without having to use animals, making it completely vegan.

The texture is just like milk. It can be used to create any typical dairy products such as ice cream, cheese or dairy ingredient. It also has the same amino acid as is normally derived from an animal. We don't class what we have done as self-determined brilliance, but rather good luck. We walked in behind Impossible Foods and Beyond Meat etc. Timing has been a significant part of the success.

Has it been difficult to find investment?

No. We have raised more money than anyone else in the cellular space as we have been able to commercialise and scale faster than meat-based cellular products. We mostly have the same investors as Impossible Foods. Investment in Perfect Day Foods has reached US\$60 million and Perumal and I have invested a full five years of our lives to develop the product to this point. We have been approached by different governments, however, our current focus is the United States.



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THE GREAT THING ABOUT CELLULAR MILK IS IT CAN FIT INTO ESTABLISHED ANIMAL DAIRY PATHWAYS, EXISTING DAIRY PLANTS CAN USE THE PRODUCT AS IT ACTS LIKE MILK. ALL YOU NEED IS A FERMENTATION TANK. IT ALSO GIVES THE COMPANY THE OPPORTUNITY TO SWITCH UP THE SUPPLY VOLUME IMMEDIATELY AS IT ONLY TAKES FIVE DAYS FROM START TO FINISH WHEREAS A BIOLOGICAL SYSTEMS TAKE 2.5 YEARS TO ADD SUPPLY.



What does success look like for Perfect Day as company in 10 years?

Sharing the technology across the world will define true success. In 2018, there were more animals on earth than ever before. The animal protein industry is growing - it's a gigantic industry. The only true way to have impact and disrupt this industry is to share the technology. We want to see rapid change and we want to engage the traditional dairy market to embrace our technology. It will take more time and more investment to get it to be able to create incredibly affordable products - it's not far away. At that point we want to share the IP as far and wide as possible to allow for scalability. It's too big for just one company to hold this. We would like to see all dairy companies use this as part of their product mix.

We partnered with ADM (Archer Daniels Midlands) who are looking at amino acids for animal feed companies and they helped us learn how to scale up our technology.

We recently worked with an animal dairy ice cream company and launched a limited edition cellular milk ice cream which was exactly like animal dairy ice cream. We are an ingredient company at heart. If you go into a supermarket and we are the only brand then we have failed in our personal mission. We want rapid adoption and the only way to do that is if everyone has access to the technology.

Short term, we will continue to refine the process. We will produce the protein ourselves, our name will be present for transparency and to grow the public's knowledge about the capability of this awesome product. It's the world's cleanest, purest milk protein you can buy and we want people to know about it. Longer term we want the IP everywhere and we are less likely to see Perfect Day as a brand on its own - we will partner with other brands. If we were a boring dairy ingredient, we would be okay with that.



What's your vision for the future?

That 80% of the US milk supply comes from fermentation and 20% come from very high quality family farms using regenerative grazing methods.

This technology will take the pressure off animal farming. The problem is not that animals are used to produce food, it's that there are too many and this technology will enable us to assist in scaling back the animal industry and feed a growing world population. We see both traditional animal dairy and cellular as complementing each other and both contributing to feeding 10 billion people.

Our investment in communication tools so everyday people can fully understand the science and the technology is important. The true innovation is explaining the technology in the right way to engage more adopters.

Our biggest problem is being able to make enough. The dairy industry is so massive that current production and incremental volume shift won't make a difference. To get to scale, we want to partner with as many companies as possible to rapidly scale up the volumes. We are mission led and want to personally change the world and be part of saving the planet.



Ryan Pandya
CEO & Co-Founder



Perumal Gandhi
Co-Founder