

## #RESEARCH

# Tasty Plant-Based Cheese

New research shows the potential of fermentation for producing plant-based cheese that people want to eat



Increasing pressure on earth's resources and climate change call for our food system to turn into a more plant-based direction. As a result, scientists are looking into how to transform protein-rich plants like peas and beans into a new generation of non-dairy cheeses that possess the similar sensory properties as the dairy-based ones, that humans have enjoyed for thousands of years.

Several plant-based cheeses are already in the market. The challenge is that plant proteins behave differently than milk proteins. To meet this challenge, producers add starch or coconut oil to harden plant cheeses as well as an array of flavourings to make them taste like cheese.

But it turns out that this can be done with the help of nature's smallest creatures. In a new research result from the University of Copenhagen's Food Science department, researcher Carmen Masia has succeeded in developing plant-based cheeses made from yellow pea protein with a firm texture and improved aroma profile. She used the same natural fermentation process with bacteria that we have used with cheeses made from milk, for thousands of years.

"Fermentation is an incredibly powerful tool to develop flavour and texture in plant-based cheeses. In this study, we show that bacteria can serve to develop firmness in non-dairy cheese in a very short period of time while reducing the bean-like aroma of yellow pea protein, which is used as the main and only protein source", explains Masia.

The result builds upon a research result from last year by the same researcher, who found that yellow pea protein constituted a good "protein base" for making fermented plant-based cheese. In the new result, the researcher examined 24 bacterial combinations, made from bacterial cultures, supplied by the biotech company, Chr. Hansen, where Masia is completing her



**Shreya Biswas**  
Multimedia journalist and editor

In a poignant quote attributed to Perry, which is widely making the rounds on social media lately, he says: "When I die, I know people will talk about Friends, Friends, Friends. And I'm glad of that, happy I've done some solid work as an actor, as well as given people multiple chances to make fun of my struggles on the world wide web...But when I die, as far as my so-called accomplishments go, it would be nice if 'Friends' were listed far behind the things I did to try to help other people. I know it won't happen, but it would be nice."

Industrial PhD. "The whole point of this study was to combine the commercially available bacterial cultures that are suitable for the fermentation of a plant-based raw material and test them in a pea protein matrix to develop both taste and texture that would be suitable for a cheese-like product. And, even if some bacterial combinations performed better than others, all of them actually provided firm gels and reduced beany-ness in the samples", says Masia.

To study the behaviour of the bacterial combinations, the scientist inoculated them in a protein base made of yellow pea protein. After only eight hours of incubation, the result was a firm "cheese-like gel" reminiscent of a fresh soft white cheese.

"All bacterial blends produced firm gels, which means that one can get a fermentation-induced gel without necessarily adding starch or coconut oil to the base. From an aroma perspective, we had two goals: To reduce the compounds that characterize the beany-ness of yellow peas and to produce compounds that are normally found in dairy cheese. Here, we saw that some bacteria were better at producing certain volatile compounds than others but also that they all worked great to reduce beany-ness, which is a very positive outcome. Furthermore, all blends acquired dairy aroma notes to different degrees", explains Masia.

Matthew Langford Perry was born on August 19, 1969, in Williamstown, Massachusetts. He came from a family with deep roots in the entertainment industry. His father, John Bennett Perry, was an actor and model and his mother, Suzanne Morrison, was a Canadian journalist and former press secretary to Pierre Trudeau, the former Prime Minister of Canada. And as many people may already know, he went to the same school as the current Canadian prime minister, Justin Trudeau. The two were even involved in a schoolyard kerfuffle, something that Perry would go on to express regret over, as an adult.

Perry's upbringing in Ottawa,

## THE WALL



## BABY BLUES



## ZITS



## Faux Fur Friday

Since man first started killing animals and wearing their skins, furs have been all the rage. To be fair, in ages past, fur was utterly necessary, the same thing that kept our prey animals warm during the winter was being borrowed to help our ancestors survive the same. But times have changed, and with electric heating and synthetic fibres, there's no longer a need for fur. So what's a lover of fuzzy clothes to do? Abandon it? Not at all! Faux Fur Friday is the answer to all of your animal hide needs, without the aching conscience.



## A Perfect Storm



The camaraderie between Perry's Chandler and Matt LeBlanc's Joey was palpable.

Friends, not only launched Perry to stardom but also created lasting bonds with his co-stars. The chemistry that Perry and his co-stars developed during the show's ten-season run was palpable, especially the camaraderie between Perry's 'Chandler' and Matt LeBlanc's 'Joey'.

In real life too, Perry shared a close friendship with fellow 'Friends' actors, Jennifer Aniston (Rachel Green), Courtney Cox (Monica Geller), Lisa Kudrow (Phoebe Buffay), David Schwimmer (Ross Geller) and, of course, LeBlanc.

The success of 'Friends' brought immense wealth and fame but it came at a price. Perry's life became a whirlwind of press appearances, fan encounters and the relentless scrutiny of media. Coping with this level of attention and expectation was no small feat. It was during this period of intense fame and pressure that Perry's addiction issues started to escalate. The demands of a hit television show, coupled with the scrutiny of public eye, created a perfect storm for his addiction to take hold. Perry has been candid about how stress and anxiety of his newfound fame exacerbated his struggles with addiction. Perry had also spoken about how, throughout his journey, he drew strength from the support of his 'Friends' cast members. He described them as understanding and patient, offering a lifeline of support during his darkest moments.

## 'Grateful to be alive...'

Matthew Perry is not an isolated case among celebrities who have been grappled with substance abuse. The pressures of fame and wealth often create a perilous environment where celebrities succumb to the pitfalls of addiction and substance abuse.

As Perry recovered, he became acutely aware of how lucky he was to have survived his battle with addiction, especially when many of his contemporaries succumbed to their own. And he never shied away from expressing his gratitude, describing himself as "an extremely grateful individual" and emphasizing how his survival brought him "the possibility to do anything." Matthew Perry's path to recovery was far from linear. But while his struggles with addiction underscore the dark reality of substance abuse, his resolute fight for sobriety, not only his own but also that of other victims, stands as a testament to hope and strength. He may no longer be here with us but his stories will continue to encourage others.

rajeshsharma1049@gmail.com

"When I die, I know people will talk about Friends, Friends, Friends. And I'm glad of that, happy I've done some solid work as an actor, as well as given people multiple chances to make fun of my struggles on the world wide web...But when I die, as far as my so-called accomplishments go, it would be nice if 'Friends' were listed far behind the things I did to try to help other people. I know it won't happen, but it would be nice."

# Thank you, Matthew

## You were there for us

### # MATTHEW MY FRIEND

#### Friends, Lovers and the Big Terrible Thing

As his career began to take off with the success of 'Friends', Perry's life seemed to be on an upward trajectory. The show, which was first aired in 1994, quickly became a cultural phenomenon, catapulting Perry and his fellow cast members to international fame. The humour, wit and undeniable chemistry among the actors, made 'Friends' a beloved sitcom that continues to have a devoted fan base.

The success of 'Friends' had a profound impact on Matthew Perry's life and career. The show's enduring popularity and cultural significance made him a household name. Chandler Bing, the character he portrayed, was known for his sharp wit and humour and Perry's impeccable comedic timing made the character unforgettable.

table. Yet, behind the scenes, Perry was grappling with a hidden struggle. The pressure of fame and the demands of a hit television show took a toll on his well-being.

Perry has been candid about the fact that his addiction issues started to escalate during the filming of 'Friends'. The show's success brought him fame and fortune but it also exacerbated the stress and anxiety he experienced.

In several interviews, Perry revealed that, at the height of his addiction, he was consuming a staggering 55 pills a day while filming 'Friends'. He described feeling "trapped", as if he had lost control over his own life. The bright lights of Hollywood and the adoration of fans couldn't shield him from the torment of addiction.

#### The End of Longing



The turning point in Perry's life came when he found himself on the precipice of death, shortly before his 50th birthday. Admitted to the hospital with a perforated stomach, he was given minimal chances of survival. His survival was nothing short of miraculous - he was placed on an ECMO machine, a device that breathes for the heart and lungs and he was one of the very few who made it out alive that night.

Perry's memoir, Friends, Lovers and the Big Terrible Thing, is a candid account of the numerous relapses and surgeries he endured to mend the damage inflicted on his body by years of alcohol and opioid abuse. Through the book, Perry hoped to share his journey with the world, offering solace and insight to those grappling with similar demons.

The book takes readers on a harrowing journey through Perry's addiction, relapses and near-death experiences. It is a raw and unflinching look at the toll that substance abuse can take on an individual's physical and emotional well-being. Perry's writing is marked by a remarkable level of self-awareness and a willingness to confront his own demons.



As his career began to take off with the success of Friends, Perry's life seemed to be on an upward trajectory.

#### The Beginning of an Addiction



He struggled to secure acting roles and faced financial difficulties. It was during this period of uncertainty that he was introduced to the world of addiction. Like many individuals who grapple with substance abuse, Perry's path into addiction began innocently enough. In 1997, he experienced a devastating accident that led to a prescription for painkillers.

Canada and his exposure to the world of show business at a young age set the stage for his future career in acting. From a young age, Perry was drawn to the world of entertainment. His journey into the world of acting took a significant step forward when he moved to Los Angeles at the age of 15 to pursue his dream. However, the road to success was not without its challenges. Perry faced numerous rejections and setbacks in his early years in Hollywood.



By Jerry Scott & Jim Borgman