

Cheese playing increasingly 'divisive role' in GMO labeling debate

Today, it is estimated that 80—90 percent of cheese in the U.S. and UK is made using Fermentation-Produced Chymosin (FPC). The GMO-derived enzyme has been a boon for cheese manufacturing and cheese sales. The US produced about [11-billion pounds of cheese in 2013](#) alone, thanks in large part to the cost-effectiveness of FPC. The technology has transformed the industry, making it more efficient, more environmentally friendly, and less dependent on animals. It has also fanned the flames of our addiction; today, the average American eats thirty-three pounds of cheese per year, [nearly three times the 1970s rate](#).

But FPC is especially interesting for [the divisive role it plays](#) in contemporary debates over the safety of genetic engineering, and the labeling of GMO foods. Most cheese is produced with FPC synthesized by genetically modified microbes. Should consumers be made aware of this? If so, how should they be made aware? It's not as though the cheese itself is genetically modified. Neither is the chymosin that produces the cheese. Chymosin is a protein and therefore contains no genetic material. Any genes found in purified FPC would be present only in trace amounts, vestiges of whatever genetically modified microbe produced the chymosin.

Cheesemakers know this line of reasoning well. Chr. Hansen, a Danish company, manufactures some of the most popular brands of FPC in the world. The company describes its FPC as "GMO-free," because purified FPC contains little to no trace of the genetically modified fungus, *Aspergillus niger*, that produces it. (But because organic food cannot even be a byproduct of GMOs, Chr. Hansen states that its GMO-free FPC is not acceptable for organic cheese production.) Similarly, [Tillamook](#), an Oregon-based dairy company, uses FPC for all but five of its dozens of cheese varieties. Tillamook representatives recently stated on the company's blog that "after purification, the end [FPC] rennet product does not contain any genetically modified material, since it no longer contains DNA from the cow gene. It is considered non-GMO by U.S. food industry standards."

Cheese, in other words, may be an unambiguous product of genetic engineering, but it is two steps removed from the genetically modified organism responsible for its existence. This raises difficult questions for consumers and companies with a taste for cheese and a distaste for GMOs. Is it right to love the sinner, but hate the sin?

[Consider Chipotle](#). Last year, [Kevin Folta](#), chair of the Horticultural Sciences Department at the University of Florida, [publicly inquired](#) whether Chipotle uses cheese made with animal rennet or GMO-derived FPC. Chipotle responded that its cheese is produced using "[an FPC rennet that is not GMO](#)." If you're familiar with the cheese industry's reliance on GMOs, Chipotle's answer comes across as pretty mealy-mouthed.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [You Can Thank Genetic Engineering For Your Delicious Cheese](#)