



A kosher certification label by the Orthodox Union. The circled “U” is the OU certification symbol. Photo by Pete Unseth in 2015 via Wikimedia Commons: <https://bit.ly/2sXlDpt>

Note on this Case Study:

New technologies present both opportunities and challenges to religious communities. Throughout history, many religious people have created and used new technologies on behalf of their religious traditions. At times, religious needs have driven technological innovation. Yet many religious people have also tried to limit the use of certain technologies that they felt violated principles of their tradition. The relationship between religion and technology is complex and highly dependent on context. As you read these case studies, pay attention to that context: Who are the groups involved? What else is happening in their context? Who benefits from new technologies? Who gets to decide if they are legitimate or not?

As always, when thinking about religion and technology, maintain a focus on how religion is internally diverse, always evolving and changing, and always embedded in specific cultures.

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Kashrut & Genetically Modified Food

Some Jews follow dietary laws known as *kashrut*. These laws define what is *kosher*, or fit to eat, and what is *treif*, or unfit. Most kosher laws are derived from the biblical books Leviticus and Deuteronomy. However, since these books are complex and were written thousands of years ago, Jews who observe kashrut often have questions about the laws, including about eating foods that did not exist in biblical times. In the 21st century, some Jews have become concerned about whether genetically modified (GM) foods are kosher.

GM foods are products made from genetically modified organisms (GMOs)—plants and animals whose DNA has been modified by scientists. Most GMOs are made by inserting a single gene from one organism into the code of another, or by changing existing genes in that organism. Scientists add, subtract, or replace parts of the genetic code of food products for many reasons: increasing crop yields, improving nutritional values, even changing physical properties to make storing and shipping easier. For example, scientists have inserted genes from a species of eel into Atlantic salmon to make them grow twice as fast, effectively doubling salmon production. Many plants have also been modified to resist herbicides so farmers can easily kill weeds without harming their crops. GMO technologies in food production have been adopted across the world—especially in North America, where 60-70% of grocery store items contain GM foods.¹

Many Jews are not concerned about GM foods, since not all Jews follow kashrut. In the US, as of 2014 only about 22% of Jewish families said they kept kosher in their home. However, in some Jewish communities, kashrut is very significant; among American Orthodox

Jews, 92% kept kosher in 2014.² For some kosher observant communities, the growth of GM foods is concerning, as they believe that genetic manipulation is *kilayim*. Kilayim is a mixture of certain plant and animal species that is banned in the Torah according to some Jews' interpretations of Leviticus 19:19 and Deuteronomy 22:9-11. Some of these Jews worry that

¹ Samuel Abraham, “Genetics and Genetically Modified Organisms,” in *Acceptable Genes? Religious Traditions and Genetically Modified Foods*, ed. Harold G. Coward & Conrad, G. Brunk, (Albany: SUNY Press, 2009), 24-8; Laurie Zoloth, “When You Plow the Field, Your Torah is with You: Genetic Modification and GM Food in the Jewish Tradition(s),” in *Acceptable Genes? Religious Traditions and GM Foods*, ed. Harold G. Coward & Conrad, G. Brunk, (Albany: SUNY Press, 2009), 83.

² Pew Research Center, “A Portrait of Jewish Americans,” *PRC: Religion and Public Life*, Oct. 1, 2013, <http://pewrsr.ch/1lzFktu>.

the insertion of DNA from one organism into another is kilayim. This concern is magnified because in some GMO foods, the added DNA comes from treif organisms. For example, unlike salmon, eels are not considered kosher. Some Jews have voiced concerns that by inserting eel DNA into the salmon, they have tainted the kosher fish with treif DNA. Some also believe the process is an unnatural attempt by humans to alter the perfect creation of God.³

Many Jews turn to kosher certification agencies for answers to such questions. In the US, many Jews trust one of five major agencies to certify and label supermarket foods, the largest of which is the Orthodox Union (OU).⁴ Other Jews trust the opinions of individual rabbis about kashrut. Despite GM food concerns among some Jews, most of these certification agencies and rabbinical authorities say GM foods are kosher, and Jewish scientists in Israel have created globally renowned centers of GMO research. Most of these kosher authorities have stated they do not believe GMOs fall under kilayim prohibitions as the mixture is microscopic. Historically, some mixing of species was permissible since it was unavoidable, especially when gathering seeds for agriculture. Therefore, in classical Jewish law, mixtures were not considered kilayim as long as the mix did not exceed 1/24th of the total. When scientists edit the DNA of food products, only a microscopic fraction of the organism is changed, far less than 1/24th of the total. Because of this, these Jews argue that GM foods cannot be kilayim. Some also assert that if the Torah does not explicitly ban the mix, it is permitted, and the Torah does not discuss DNA.⁵

But for many Jews who oppose GM foods, their concerns extend beyond kashrut law to the impact of GMOs on consumer safety, the environment, and animal rights. These Jews want to expand kashrut to include broader ethical concerns, particularly after the Agriprocessors scandal. In 2004, Agriprocessors was the largest producer of kosher meat in the US, but animal cruelty, environmental degradation, and financial and labor crimes led to its bankruptcy in 2008 and a prison sentence for its CEO, Rabbi Sholom Rubashkin. In response, many American Jews began seeking kosher food that was both religiously permissible and ethically produced. New kosher certification agencies like Earth Kosher and Kosher Organics formed to certify foods as both kosher and organic, or not GM. In 2013, one of the five major agencies, Star-K, joined them, announcing it would no longer certify GM foods.⁶

At the same time, many rabbinical authorities and certification agencies have objected to banning GMOs on these broader ethical grounds. The OU has noted that it believes safety and environmental standards should be left to government agencies, as OU does not have expertise in areas outside Jewish law. Others see GM foods themselves as the more ethical choice, pointing to core Jewish values of *pekuach nefesh* and *tikkun olam*. *Pekuach nefesh* means saving a life, and some Jews view the increases in crop yields from GMOs as a way to help end problems of world hunger. These Jews sometimes assert that the value of *tikkun olam*, or healing a broken world, is fulfilled by GMOs, claiming that GM foods are not unnatural human alterations to God's creation, but are a part of a Jew's role in the "ongoing act creation," in an imperfect world.⁷ To these Jews, GM foods are the ethical choice. But though GM foods continue to proliferate, the Jewish community has yet to agree on whether they are kosher.

³ Zoloth, "When You Plow the Field..." 98; Sara T. Spielman, "Are GMO's Kosher?" *The Forward*, May 7, 2013, <https://bit.ly/2l1V1yi>.

⁴ Timothy D. Lytton, *Kosher: Private Regulation in the Age of Industrial Food*, (Cambridge: Harvard UP, 2013), 61.

⁵ Zoloth, "When you Plow the Field..." 92, 99; Ruth Levush, "Restrictions on Genetically Modified Organisms: Israel," *Library of Congress*, Mar. 2014, <https://bit.ly/2HfALrh>.

⁶ Lytton, *Kosher...*, 164-5; Ashlie Stevens, "Is Kimchi Kosher? Are GMOs? Naturally, Rabbis Disagree," *National Geographic*, Aug. 12, 2015, <https://on.natgeo.com/2BcW48l>

⁷ Lytton, *Kosher...*, 164-5; Zoloth, "When you Plow the Field..." 94-5, 110.

Additional Resources

Primary Sources:

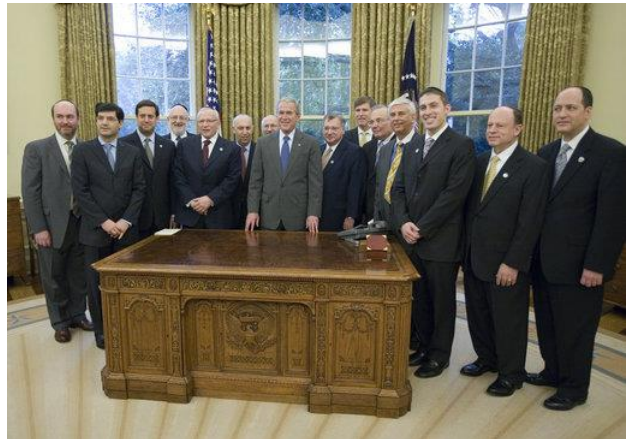
- Orthodox Union rulings on GM foods (accessed 2019): <https://bit.ly/2WGfTxZ>
- Editorial from the Jewish weekly newspaper The Forward on Judaism and GMOs (2012): <https://bit.ly/2WANf1z>
- Editorial from The Forward, “Are GMO’s Kosher?” (2013): <https://bit.ly/2I1V1yj>
- Editorial on GM salmon from Jewish News Arizona (2013): <https://bit.ly/2t0blFe>

Secondary Sources:

- National Geographic article on rabbinical debates about GM foods (2015): <https://on.natgeo.com/2BcW48l>
- Jewish Telegraphic Agency article on kosher and GMO food labelling issues in Vermont (2016): <https://bit.ly/2RAULpu>
- Times of Israel article on the massive profits made by kosher certification agencies (2014): <https://bit.ly/2S6saNz>
- Newsweek article on one Israeli rabbi’s approval of cloned, GM pork (2018): <https://bit.ly/2D3A9kk>

Discussion Questions

- Orthodox Jews are far more likely to keep kosher and are generally more strict in their interpretation of kashrut, but are largely unified in their approval of GM foods. Conservative, Reform, or Reconstructionist Jews, all groups who are less likely to keep kosher day-to-day, are more likely to be concerned about GM foods.⁸ Why do you think this might be? Why might Jews who do not keep kosher care about whether GM foods are kosher?
- What do you think motivates the differences of opinion on GM foods among Jews?
- Why do you think so many different kosher certification agencies exist?
- Read the articles in the secondary sources from the Jewish Telegraphic Agency and the Times of Israel. How does money influence the creation of kosher regulations?
- Why might different Jews have such diverse interpretations of the prohibition on kilayim?



Former President George W. Bush poses with the leadership of the Orthodox Union (OU) on the 110th anniversary of their founding. White House photo by Joyce N. Goghossian in 2008. Via Bush White House Archives: <https://bit.ly/2UCqKHK>

⁸ Zoloth, “When you Plow the Field...” 95.