

2020

GMO Products and the Food Industry: A Literature Review of Opinions and Behaviors by U.S. Restaurants

Jake Harrison

Utah State University, jakethomasharrison@gmail.com

Kenneth Bartkus

Utah State University, uplandwss@yahoo.com

Follow this and additional works at: <https://digitalcommons.usu.edu/curiosity>



Part of the [Business Administration, Management, and Operations Commons](#)

Recommended Citation

Harrison, Jake and Bartkus, Kenneth (2020) "GMO Products and the Food Industry: A Literature Review of Opinions and Behaviors by U.S. Restaurants," *Curiosity*. Vol. 1 : Iss. 1 , Article 4.

Available at: <https://digitalcommons.usu.edu/curiosity/vol1/iss1/4>

This Article is brought to you for free and open access by the Journals at DigitalCommons@USU. It has been accepted for inclusion in Curiosity by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



GMO PRODUCTS AND THE FOOD INDUSTRY: A LITERATURE REVIEW OF OPINIONS
AND BEHAVIORS BY U.S. RESTAURANTS

Jake Harrison and Kenneth Bartkus

Department of Management

***Abstract:** The health implications of genetically modified organisms (GMOs) have been the subject of considerable debate in the literature. One aspect of the debate is the apparent disconnect between what is reported in the scientific communities and what is reported in the general public. Specifically, it has been reported that while “Nearly 9 out of 10 scientists from the American Association for the Advancement of Science say GMOs are ‘generally safe’ to eat, more than half of the general public believe it is not a good idea.” This presents somewhat of a dilemma for companies, such as restaurants, who are involved in food distribution to the general public. That is, should restaurants continue to use GMO food products given assurances from the scientific community? Or, should they respond to consumer concerns by adopting at least some form of a non-GMO policy? The purpose of this review is to gain a conceptual understanding of what the restaurant industry is saying and doing with regard to these questions. Preliminary results are explained, and further research direction is given.*

KEYWORDS: Adoption, Genetically Modified Organisms, Restaurants

1. THEORETICAL BACKGROUND

The use of genetically modified organisms (GMOs) in the production of food products designed for human consumption has been the subject of considerable debate in the literature (e.g., de Vendômois et al., 2010; Persson, 2018; Katirae, 2019). On the one hand, there are those who argue that GMO products are safe to consume. The *National Academy of Sciences*, for example, argues that: “GMO crops are as safe to eat as their non-GMO counterparts” (n.p., as reported in Kubitz, 2016). Similarly, one restaurant executive echoed this position by stating

that there is “broad scientific consensus that GMOs are safe to consume” (n.p., Clayton, as quoted in Food Insight, 2019).

On the other hand, opponents of GMO products counter that there is sufficient scientific evidence to conclude that there are harmful health effects from their use (Persson, 2018). Latham (2015), for example, notes that GMO crops are often resistant to herbicides and this resistance “is an invitation to farmers to spray large quantities of herbicides, and many do.” Given that herbicide residuals have been widely cited as a cause of cancer (e.g., Cassidy, 2015; Myers et al., 2016) this implies an unintended and negative side-effect of GMO products.

While the debate remains ongoing, there appear to be noticeable changes taking place in both public policy and industry practice in the direction of eliminating, or at least reducing, the use of GMO products. At the public policy level, the U.S. Department of Agriculture announced the *National Bioengineered Food Disclosure Standard*, ‘which requires food manufacturers, importers, and certain retailers to label foods containing genetically modified or bioengineered ingredients.’ (*Food Business News*, 2018). While restaurants are not required to adhere to the standard at the current time, it would be reasonable to suggest that this might change in the foreseeable future, especially if evidence becomes more conclusive that GMOs are as harmful as some evidence has shown. And, while labeling alone wouldn’t necessarily involve a significant cost to industry, such transparency may cause at least some consumers to avoid companies who use GMO products.

Aside from the labeling requirements in the U.S, there are emerging regulations throughout global markets. For example, 28 countries in Europe now prohibit biotech companies from selling GMO seed in their countries (Journey, 2019). The list includes such countries as

Germany, France, Italy, Austria, Greece, Poland, Scotland, Northern Ireland and Belgium, among others. Increased global action would presumably have an influence on National policy. As such, food companies in the U.S. should be prepared for possible increases in regulations.

In the meantime, it would seem rational to presume that affected companies will respond to the emerging trends by reducing or eliminating their dependence on GMO products. A plenary review of restaurants in the U.S. has revealed that changes are taking place, although the changes do not appear widespread at this time.

For example, Chipotle is one of the few restaurants that proudly promotes a non-GMO menu (Jennings, 2015). Other examples include independents such as Amy's Drive Thru (Smith, 2016) and smaller chains such as Noodles & Company, which uses non-GMO ingredients to make all their pasta (Wohl, 2015). These examples suggest that the adoption of a non-GMO policy at U.S. restaurants has extended to a variety of different sectors within the industry.

But why are restaurants responding differentially? Why do some restaurants proactively take action while others take a more restrained approach? It may be that some restaurants simply don't see a competitive advantage of changing, while others do. It might also be due to the complexity of their supply chains. For example, a spokesperson for McDonald's recently stated that their supply chain system is quite sensitive to change and that "even small changes require a great deal of planning and consideration" (n.p., as quoted in Weiner-Bronner, 2020). Because of that, even small adjustments that have been made to the supply chain "have been in development for several years" (Edmiston, 2019). Hence, any decision to adjust the supply chain requires careful consideration.

Restaurants may also be hesitant to make changes because of the perceived risk that any change might have on performance metrics. On the one hand, there is the risk of not responding early enough (in the event that consumer preferences and governmental regulations become dominant before a change can be implemented). On the other hand, by responding early, restaurants are presuming that there will be increased regulation, increased consumer preference for non-GMO products, and/or more clear evidence that GMOs are harmful. If these turn out to be untrue, the restaurant will have unnecessarily allocated resources that might have been better utilized in another area. Although the debate appears to be trending away from GMOs, restaurants must nevertheless determine if and when it is best to make changes.

In sum, while there is some evidence that the restaurant industry has responded to the GMO debate, the reasons for their responses have not been formally examined. Why is it that some restaurants alter their strategy while others do not? Is it due to the risk of change? Is it the complexity of the supply chain? The answers to these and related questions can provide additional insights into the decision processes that restaurants go through when faced with similar circumstances.

The current study, therefore, is intended to review reasons why some restaurants in the U.S. have decided to move towards a non-GMO strategy while others have not. The opinions and behaviors of restaurants are examined in an effort to identify and classify the reasons why restaurants do what they do with regard to GMO products. In doing so, the results are expected to be useful in the further development of a conceptual model that categorizes why or why not restaurants would adopt a non-GMO strategy.

2. THE CURRENT STUDY

The purpose of this study is to explore the opinions and behaviors of U.S. restaurants with regard to decisions to adopt (or not-adopt) a GMO policy. The central research question is: What are U.S. restaurants' opinions of GMO products, and how are they responding to the ongoing health safety debate? This question is addressed through a systematic review of secondary data reported in the popular press literature. The articles will be evaluated for common themes and then classified along those lines. Preliminary results suggest that the complexity of the supply chain is a major consideration. The results will contribute to: (1) providing a foundation for a more systematic review of restaurant GMO policies and (2) facilitating further refinement of a conceptual model that identifies the major classification of contributing factors (e.g., perceptions of relative advantage, ease of trial, compatibility) along with their perceived importance. The model will then be tested through a more in-depth analysis of major restaurant chains and independents across all sectors of the industry. The model attempts to explain the reason for differences among the various sectors of the restaurant industry with regard to the adoption of non-GMO policies. In doing so, the results should further contribute to our overall understanding of how restaurants adopt to a changing environment. To help ensure efficiency, the study is restricted to US restaurants opinions and reactions to the GMO debate.

3. RESEARCH METHOD

The research question is addressed first through a Google Internet search of relevant articles using the following terms: "Genetically Modified Organism", "GMO", "Genetically Engineered", "Foods", "Adoption", and "Restaurant." A subsequent review of articles identified through a search in Library databases (e.g., Academic Source Premier) will also be conducted to ensure that a comprehensive set of relevant articles will be harvested. All seemingly pertinent

articles that included the above-mentioned terms in either the title or the abstract were downloaded and reviewed. Given that the aim of this review is to address the GMO dilemma from the perspective of restaurant owners, the articles chosen for inclusion specifically examine what restaurants and restaurant owners are saying and doing concerning the issue. Articles that address consumer perceptions and behaviors, as well as general health drawbacks and benefits were excluded from this review because they have already been addressed in previous research and are outside the scope of this study. The majority of information collected was retrieved from trade and popular press sources because scholarly articles have not addressed restaurant perceptions of the issue at this time. Considering that this is an exploratory study designed to gain insights into the perceptions that restaurants have about using GMO products, statistical testing is not possible. Rather, it is intended to provide information that might be useful in the future development of the study, including hypothesis development and testing. In essence, the information provided in the review is expected to help facilitate the development of a more refined conceptual model capable of empirical testing; having a more complete understanding of what restaurants are reporting about their views on GMO products is a useful first step in the research stream.

4. PRELIMINARY RESULTS AND DISCUSSION

Currently, the preliminary results suggest that full-scale menu restructure is not widespread but is growing. For example, McDonald's has opted to produce their French fries using non-GMO potatoes ("GMO Foods", 2015). Additionally, some restaurants are promoting their non-GMO efforts. Chipotle is perhaps the most notable example. They promote themselves as wanting to "change the way people think about and eat fast-food...That means cooking with the

very best ingredients-- ingredients that are free of additives--but still serving food that is affordable, convenient, and most importantly delicious” (“Chipotle Ditches GMOs”, 2015). Similarly, a New York small-scale operation, The Little Beet, promotes its restaurant by providing “a customizable menu of lean meats and fish raised without antibiotics, and GMO-free vegetarian dishes” (Thorn, 2016). These examples illustrate some of the evidence that has already been harvested from the literature. As additional articles are harvested, the results will subsequently be classified and incorporated into the larger research project in order to provide context and direction for further analysis. While scholarly publications regarding GMO health impacts are abundant, articles that address restaurant owners’ perceptions of the issue are scant, thus limiting the majority of useful information to trade publications and popular press literature. Subsequent studies will use a mixture of these mediums to maintain credibility and capture multiple perspectives.

References

- Cassidy, E. (2015, October 6). Did you know that Monsanto's glyphosate doubles the risk of cancer? Retrieved from <https://www.ewg.org/agmag/2015/10/monsanto-s-gmo-herbicide-doubles-cancer-risk>
- Chipotle ditches GMOs without raising prices: restaurant will eliminate the remaining artificial ingredients from its tortillas. (2015, June). *Nutraceuticals World*, 18(5), 14. Retrieved from https://link.gale.com/apps/doc/A418088701/AONE?u=utah_gvrl&sid=AONE&xid=9470d225
- Edmiston, J. (2019, August 6). McDonald's makes tweaks to the Big Mac, Quarter Pounder in quest for a hotter, juicier product. Retrieved from <https://business.financialpost.com/news/retail-marketing/mcdonalds-new-method>
- Food Business News*. U.S.D.A. announces G.M.O. labeling standard. (2020, April 14). Retrieved from <https://www.foodbusinessnews.net/articles/13064-usda-announces-gmo-labeling-standard>
- Food Insight. (2019, February 14). Survey: Nearly Half of U.S. Consumers Avoid GMO Foods; Large Majority Primarily Concerned About Human Health Impact. Retrieved from <https://foodinsight.org/survey-nearly-half-of-u-s-consumers-avoid-gmo-foods-large-majority-primarily-concerned-about-human-health-impact/>
- GMO Foods: What You Need to Know - Consumer Reports. (2015, February 26). Retrieved from <https://www.consumerreports.org/cro/magazine/2015/02/gmo-foods-what-you-need-to-know/index.htm>

- Jennings, L., & Ruggless, R. (2015). Chains clean up menus. *Nation's Restaurant News*, 49(8), 22–24. Retrieved from <http://search.ebscohost.com/dist.lib.usu.edu/login.aspx?direct=true&db=buh&AN=103038667&site=ehost-live>
- Journey, E. (2019, November 13). Where are GMO's banned? Retrieved from <https://gmowatch.com/where-are-gmos-banned/>
- Katirae, L. (2019, October 16). 10 times science challenged 'studies' suggesting GMOs are harmful. Retrieved from <https://geneticliteracyproject.org/2019/01/25/10-times-science-challenged-studies-suggesting-gmos-are-harmful/>
- Kubitz, L. (2016, May 31). Science Sent: GMOs Are Safe to Eat. Retrieved from <https://foodinsight.org/science-sent-gmos-are-safe-to-eat/>
- Latham, J. R. (2019, January 7). GMO Dangers: Facts You Need to Know. Retrieved from <https://nutritionstudies.org/gmo-dangers-facts-you-need-to-know/>
- Myers, J. P., Antoniou, M. N., Blumberg, B., Carroll, L., Colborn, T., Everett, L. G., Hansen, M., Landrigan, P. J., Lanphear, B. P., Mesnage, R., Vandenberg, L. N., Vom Saal, F. S., Welshons, W. V., & Benbrook, C. M. (2016). Concerns over use of glyphosate-based herbicides and risks associated with exposures: a consensus statement. *Environmental health : a global access science source*, 15, 19. <https://doi.org/10.1186/s12940-016-0117-0>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4756530/>
- Persson, S. (2018, October 2). Why You Need To Stop Eating GMOs Now! Retrieved from <https://www.cancerwisdom.net/gmo-health-risks/>

Smith, M. D. (2016, March 1). 7 Ways to Eat out GMO-Free. Retrieved from

<https://www.betternutrition.com/features-dept/7-ways-to-eat-out-gmo-free>

Thorn, B. (2016). The Little Beet. *Nation's Restaurant News*, 50(14), 26. Retrieved from

<http://search.ebscohost.com.dist.lib.usu.edu/login.aspx?direct=true&db=buh&AN=118349678&site=ehost-live>

de Vendômois, J. S., Cellier, D., Vélot, C., Clair, E., Mesnage, R., & Séralini, G. E. (2010).

Debate on GMOs health risks after statistical findings in regulatory tests. *International Journal of Biological Sciences*, 6(6), 590–598. <https://doi.org/10.7150/ijbs.6.590>

Wiener-Bronner, D. (2020, March 13). It took three years, but here's how she got thousands of

McDonald's stores to switch to fresh beef. Retrieved from

<https://www.cnn.com/2020/03/13/business/mcdonalds-marion-gross-risk-takers/index.html>

Wohl, J. (2015, October 6). Noodles & Company Launches Branding Push, Cleans Up Menu.

Retrieved from <https://adage.com/article/cmo-strategy/noodles-company-launches-branding-push-cleans-menu/300781>