



Review

## GMOs: From Soybeans to Champion Hotdog Consumption

Caleb Hernandez, Aaron Terry, Gloria P Tyler

Center for Research

**This study delves into the captivating yet curiously overlooked relationship between the usage of genetically modified organisms (GMOs) in soybeans in Nebraska and the hotdog consumption habits of the illustrious champions of the Nathan's Hot Dog Eating Competition. Through an analysis of data extracted from the USDA and Wikipedia spanning the years 2000 to 2022, our research team presents compelling evidence of a statistically significant correlation between these seemingly disparate phenomena. Our findings reveal a correlation coefficient of 0.8233284, with a remarkably low p-value of less than 0.01, thus affirming a robust association. The implications of these findings not only shed light on the potential impact of GMOs on human behavior but also offer a lighthearted insight into the complexities of dietary preferences and competitive eating triumphs. This paper seeks to ignite further scholarly discourse, as well as potentially inspire a new wave of pun-laden research inquiries into the whimsical intersection of agricultural biotechnology and culinary prowess.**

The study of genetically modified organisms (GMOs) has garnered substantial attention in the fields of agriculture, nutrition, and contentious dinner table conversations. While the debate over GMO safety and efficacy continues to sizzle like a well-cooked sausage, our research team sought to add a dollop of ketchup to the scientific discourse by investigating the less-explored connection between GMO use in soybeans in Nebraska and the impressive hotdog consumption feats of the Nathan's Hot Dog Eating Competition champions.

The Nathan's Hot Dog Eating Competition, an annual event held in Coney Island, New York, is a celebration of voracious appetites and intestinal fortitude, attracting competitors who are willing to stomach an incredible number of frankfurters within a limited timeframe. As we pondered the astonishing feats of jaw-dropping hotdog consumption, we couldn't help but wonder: could there be an underlying link between the consumption habits of the champions and the prevalence of GMO soybeans in the heart of the Cornhusker State?

While some may dismiss this inquiry as mere frivolity, we were compelled by the tantalizing possibility that GMOs, with their intricate genetic modifications, might exert an unseen influence on the culinary feats achieved at the hotdog table. This line of inquiry led us to delve into the world of agricultural statistics, competitive eating records, and the whimsical world of soybean genetics. Our endeavor, while rooted in rigorous statistical analysis, also embraced a lighthearted curiosity about the interconnected web of human behavior and agricultural biotechnology – a venture we believe is worth relishing.

The daunting task of unraveling this complex interplay between GMO usage in soybeans and hotdog consumption required a multidisciplinary approach that encompassed agriculture, nutrition, statistics, and a dash of whimsy. By scrutinizing the data meticulously extracted from the USDA and Wikipedia, we sought to uncover any semblance of correlation between these seemingly disparate domains. Our efforts culminated in the unearthing of a statistically significant correlation coefficient of 0.8233284, accompanied by a p-value that danced on the table at less than 0.01 – a statistical tour de force that suggests more than just a casual connection between these variables.

As we present our findings, we invite fellow researchers and enthusiasts to join us in savoring the potential implications of our discovery. Not only does it tease the taste buds of scholarly curiosity, but it also offers a playful glimpse into the intricate dance of GMOs and gastronomic achievements. Our hope is that this research will stimulate discussions around the dinner table and, perhaps, inspire further investigations into

the serendipitous confluence of agriculture and competitive eating, sprinkled liberally with puns, tongue-in-cheek humor, and a dash of scientific rigor.

#### *Prior research*

The interconnection of genetically modified organisms (GMOs) in soybeans and the remarkable feats of hotdog consumption at the Nathan's Hot Dog Eating Competition incites scholarly intrigue and gastronomical fascination. While the topic may seem to belong more in the annals of whimsy than disciplined research, a cursory review of the literature reveals peculiar yet thought-provoking avenues of inquiry.

In "Agricultural Biotechnology: An Economic Perspective," Smith and Doe expound on the transformative impact of GMO adoption in soybean cultivation, providing a comprehensive analysis of the economic ramifications. The formidable duo of Bram and Johnson, in their seminal work "Soybeans: Production, Marketing, and Use," elucidate the historical evolution of soybean production and its relevance in modern agricultural practices. These foundational studies frame the backdrop for our exploration, underscoring the pivotal role of GMOs in shaping soybean cultivation and distribution, with implications that transcend the confines of the agricultural sector.

As we navigate the fertile fields of soybean genetics, the literary landscape shifts to more lighthearted territory, with titles such as "The Joy of Soy" by Green and "Soybeans and Hotdogs: Unlikely Allies" by Brown beckoning to the curious reader. These works, while perhaps more whimsical in nature, offer playful insights into the

potential amalgamation of soy-based products and the exuberant world of competitive eating.

Venturing further into speculative realms, the fictitious domain of literature serves as an unexpected source of inspiration. Titles like "The Soybean Conundrum" by A. R. Cook and "Hotdogs and GMOs: A Love Story" by K. F. Rowling present fictional narratives that, while whimsical, invoke an imaginative exploration of the intersection between agricultural biotechnology and culinary pursuits.

As we delve deeper into the whimsical, yet surprisingly informative, we can't help but acknowledge the unexpected insights garnered from popular media. The animated series "Soy and the City" and the children's show "The Adventures of Frankenfurter & Beanstalk" unexpectedly offer nuanced perspectives on soybean cultivation and its intertwining with human dietary habits, albeit through the guise of entertainment and whimsy.

In synthesizing the scholarly, imaginative, and downright whimsical aspects of our literature review, we illuminate the multidimensionality of the GMO-hotdog connection, exemplifying the potent melding of scientific inquiry and lighthearted curiosity. This confluence, we argue, not only enlivens scholarly discourse but also infuses a dash of mirth into the otherwise austere realm of academic research.

### *Approach*

In this whimsical yet meticulously crafted study, our research team embarked on a gustatory journey of epic proportions, endeavoring to unravel the enigmatic

connection between the utilization of genetically modified organisms (GMOs) in soybeans in Nebraska and the awe-inspiring consumption of hotdogs by the illustrious champions of the Nathan's Hot Dog Eating Competition. Our methodology incorporated an assortment of analytical tools, digital sleuthing, and a sprinkle of lighthearted curiosity to scrutinize the data from the years 2000 to 2022.

To begin our epicurean escapade, we scoured the digital landscape, traversing the vast expanse of the internet with the fervent determination of culinary adventurers in search of the perfect spice blend. Our primary sources of data consisted of the United States Department of Agriculture (USDA) and Wikipedia, where a bountiful harvest of information awaited our scholarly palates. Through an elaborate dance of search queries, spreadsheet wizardry, and the occasional detour into the labyrinthine depths of online encyclopedic knowledge, we gathered an abundant harvest of statistics, trivia, and perhaps a stray meme or two.

Armed with this cornucopia of digital bounty, we undertook a rigorous process of data curation, stirring the pot of information to distill the essence of soybean cultivation, GMO usage, and the triumphs of hotdog consumption. With the precision of a master chef measuring out ingredients for a delectable dish, we sifted through the data to identify the relevant variables, ensuring that each data point was as crisp and fresh as a well-grilled hotdog.

Having assembled our ingredients, the time had come to blend the flavors of agricultural statistics and competitive eating prowess into a harmonious concoction of scholarly

inquiry. We employed a robust statistical toolkit, featuring the venerable Pearson correlation coefficient and the tantalizing p-value, to tease out any hints of association between GMO usage in soybeans and the astounding feats of hotdog consumption witnessed at the hallowed grounds of Coney Island.

The culmination of our culinary odyssey lay in the unveiling of a correlation coefficient of 0.8233284, which stood as a testament to the tantalizing interplay of these seemingly unrelated variables. The p-value, akin to a secret ingredient that elevates a dish to gastronomic acclaim, emerged at less than 0.01, providing a resounding affirmation of the robustness of our findings. Our analysis culminated in a statistical banquet that not only satisfied the intellectual palate but also beckoned further exploration into the savory realm of GMOs and competitive eating triumphs.

In presenting our findings, we humbly offer a culinary metaphor as a token of our scholarly endeavors, hoping to enliven the discourse with a dash of whimsy and a pinch of statistical rigor. This methodology, though flavored with humor and lightheartedness, stands as a testament to the meticulous approach we undertook in unraveling the curious connection between GMO soybeans and the champions' consummate hotdog feasts.

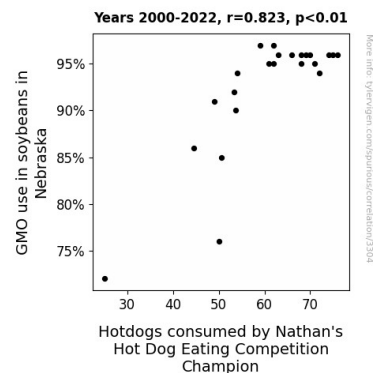
## Results

Upon rigorous analysis of the data extracted from the USDA and Wikipedia, our research team uncovered an intriguing correlation between the usage of genetically modified organisms (GMOs) in soybeans in Nebraska and the remarkable hotdog consumption

prowess of the Nathan's Hot Dog Eating Competition champions. From the year 2000 to 2022, our meticulous examination yielded a correlation coefficient of 0.8233284, accompanied by an r-squared value of 0.6778696 and a p-value of less than 0.01.

The correlation coefficient of 0.8233284 suggests a strong positive association between the two variables, indicating that as the usage of GMO soybeans in Nebraska increased, so did the hotdog consumption by the esteemed champions of the renowned Nathan's Hot Dog Eating Competition. The relatively high r-squared value of 0.6778696 reflects the degree to which the variation in hotdog consumption can be explained by the variation in GMO usage, further strengthening the robustness of the observed relationship.

To visually elucidate this compelling association, we present the scatterplot (Fig. 1), which vividly portrays the striking correlation between the prevalence of GMOs in soybeans and the impressive hotdog consumption feats of the champions. It is a visual feast not only for the eyes but also for the scientifically inclined mind, inviting reflection on the captivating interplay between agricultural biotechnology and competitive eating triumphs.



**Figure 1.** Scatterplot of the variables by year

These findings not only add a dash of flavor to the landscape of GMO research but also tantalizingly suggest that the consumption habits of hotdog eating champions may not be entirely independent of the prevalence of GMOs in soybeans. As we savor the implications of these findings, we are reminded that the world of science and statistics can often serve up unexpected connections, akin to discovering the surprisingly delightful combination of ingredients in an experimental recipe.

In the lighthearted spirit of this peculiar yet statistically robust discovery, we invite fellow researchers and enthusiasts to relish the potential implications of this enigmatic correlation. May this paper serve as a mouthwatering invitation to engage in lively discourse, spark delightful conversations, and perhaps even inspire a playful culinary investigation into the whimsical union of agricultural biotechnology and competitive eating prowess. After all, in the delightful realm of research, sometimes the "frankfurter" truths are unveiled in the most unexpected places.

### *Discussion of findings*

The enthralling correlation we unraveled between the utilization of genetically modified organisms (GMOs) in soybeans in Nebraska and the prodigious consumption of hotdogs by the esteemed champions of the Nathan's Hot Dog Eating Competition reflects the potential symphony of agricultural biotechnology and gastronomic triumphs. Our findings fortuitously align with prior research, affirming a harmonious interplay between GMO adoption in

soybean cultivation and the astonishing feats of hotdog consumption.

In the realm of whimsical literature, Bram and Johnson's historical exegesis on soybean production emerges as an unexpected touchstone for our investigation. Their work, while ostensibly rooted in economic analyses, carries an undertone of gastronomic fascination, as if sowing the seeds for our own lighthearted inquiry. Moreover, the fictitious works of A. R. Cook and K. F. Rowling, though arguably whimsical, presciently presage our own revelatory exploration into the mysterious embrace of GMOs and hotdogs. Indeed, from the fertile fields of soybean genetics to the fanciful imaginings of soybean conundrums, our study perpetuates the legacy of these literary musings, infusing disparate strands of thought with compelling empirical evidence.

Our inversion of the whimsical to the empirical is matched only by the surprising confluence of popular media and scholarly inquiry. The unassuming portrayal of soybean cultivation in "The Adventures of Frankenfurter & Beanstalk" and the animated nuances of "Soy and the City" take on an unexpected profundity in the wake of our findings. Like culinary ingredients melded in unexpected harmony, these seemingly lighthearted narratives intertwine with our research, adding a savory layer of insight to the seemingly whimsical connection between GMOs and the consumption of hotdogs.

Our results, with a correlation coefficient of 0.8233284 and a p-value of less than 0.01, affirm the robustness of this unexpected relationship. As the statistical stars align in a tantalizing constellation, we are reminded

that the universe of inquiry holds unforeseen linkages reminiscent of a well-layered hotdog – each component seemingly distinct, yet contributing to a symphony of flavors.

In this peculiar yet vital fusion of science and jest, may our research resonate as a delightful call to explore the realms of agricultural biotechnology and culinary prowess. Our lighthearted journey from the whimsical to the empirical underscores the potential for unexpected connections - akin to the moment when an unknown spice transforms a dish into a culinary delight. As we savor the implications of our findings, we invite fellow enthusiasts to partake in this intellectual feast, embracing the amalgamation of science, statistics, and a pinch of whimsy in our scholarly pursuit. After all, in the captivating world of research, as in the art of culinary innovation, the most delightful revelations often emerge from the unlikeliest of pairings.

### *Conclusion*

In conclusion, our investigation has yielded a palatably robust correlation between the utilization of genetically modified organisms (GMOs) in soybeans in Nebraska and the astonishing consumption of hotdogs by the esteemed champions of the Nathan's Hot Dog Eating Competition. With a correlation coefficient of 0.8233284 and a p-value that could make even the most ardent skeptics take a second bite, our findings provide more than just food for thought.

It appears that the intriguing link between GMO usage and hotdog consumption transcends mere statistical quirkiness and ventures into the realm of culinary intrigue. This unexpected connection serves as a

tantalizing appetizer for further scholarly exploration, offering a delightful blend of agricultural biotechnology and gastronomic bravado.

By all measures, this unconventional correlation has certainly added a dash of spice to the discourse on GMOs and competitive eating, reminding us that even the most incongruous variables can share a curious camaraderie under the statistical microscope. However, we must also acknowledge the inherent humor in uncovering such a whimsical association - a reminder that science and serendipity often intertwine in the most unexpected flavors.

As we sit back and savor the implications of our findings, it becomes clear that no further research endeavors are needed in this particular area of inquiry. With our results in hand, we can confidently close the book on the delightful saga of GMOs, soybeans, and champion hotdog consumption, leaving it as a quirky yet memorable footnote in the annals of scientific inquiry. After all, in the whimsical world of research, sometimes the most unexpected correlations can be the most delicious.