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# Maze Craze: Unearthing the Corny Connection Between GMOs in Illinois and Organic Sales in the United States

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*In this study, we dive headfirst into the world of genetically modified organisms (GMOs) in the cornfields of Illinois and the curious correlation with organic food sales volume across the United States. As we peel back the husk of this perplexing relationship, our research team couldn't resist the kernel of truth hidden within the data. Utilizing data from the USDA and Statista, we meticulously examined the period from 2000 to 2012 to analyze the interplay between the cultivation of GMO corn in Illinois and the burgeoning sales of organic food products. With a correlation coefficient of 0.9696498 and  $p < 0.01$ , our findings sprouted a remarkable connection that left us a-maize-d. Much like a corny dad joke, the relationship between the use of GMOs in corn and the surge in organic food sales is both unexpected and oddly delightful. The results of our study not only shed light on this correlation but also highlight the intricacies of agricultural practices and consumer trends. We hope this research leaves readers feeling cornfident in their understanding of these intertwined phenomena.*

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As the agricultural landscape continues to evolve, the intertwining of genetically modified organisms (GMOs) and organic food sales has sparked considerable curiosity. It's almost as if we've stumbled upon a confounding cornundrum! This study delves into the seemingly contradictory relationship between the widespread use of GMOs in the cornfields of Illinois and the remarkable rise in organic food sales across the United States.

GMOs and organic foods – it's like a game of corn and mouse, one altering genetic composition to enhance traits, while the other embraces the purity of nature's bounty. It's a-maize-ing how these two forces have sparked such widespread debate and market dynamics.

Our research sets out to unravel this perplexing relationship, akin to a-maize-ing sleuths cracking a particularly challenging case. By accessing

comprehensive data from the USDA and Statista, we carefully examined the period from 2000 to 2012 to scrutinize the subtle and not-so-subtle interactions between GMO corn cultivation in Illinois and the burgeoning sales of organic food products. We left no kernel unturned in our quest for understanding.

The correlation coefficient of 0.9696498 and a p-value of less than 0.01 emerged from our analysis like a cornstalk rising above the rest. It's enough to make a statistics enthusiast positively ear-resistible! These findings revealed a strikingly strong link between GMO corn production in Illinois and the surge in organic food sales nationwide. It's like the statistical equivalent of finding a needle in a haystack – but instead, it's a corn kernel in a silo!

With this study, we aim to not only shed light on the fascinating correlation between the use of GMOs

and the growth in organic food sales but also to highlight the intricate dance between agricultural practices and consumer preferences. We might just say we hope this research leaves readers feeling confident in their understanding of these intertwined phenomena, but that would be too corny, wouldn't it?

## LITERATURE REVIEW

Research in this field has sought to uncover the nuanced relationship between genetically modified organisms (GMOs) in corn production and the sales volume of organic food products in the United States. Jones et al. (2015) examined the impact of GMO corn cultivation on organic food consumption patterns, revealing a surprising correlation that has raised both eyebrows and corn stalks.

Now, let's turn our attention to some noteworthy non-fiction works that have provided valuable insight into the corny world of GMOs and organic foods. Michael Pollan's "The Omnivore's Dilemma" takes readers on a journey through the modern food industry, including the prevalence of GMO corn and the burgeoning organic food movement. In "Fast Food Nation" by Eric Schlosser, the author delves into the impact of industrial agriculture on food production, shedding light on the contentious debate surrounding GMOs and organic alternatives. These publications serve as a kernel of knowledge in understanding the broader context of our investigation.

As we peel back the layers of this research maze, let's not overlook the potential influences of fiction literature on our understanding of agricultural practices and consumer trends. Barbara Kingsolver's "Animal, Vegetable, Miracle" immerses readers in the author's own venture into sustainable food production, offering a compelling narrative that explores the intersection of GMOs and organic farming. Similarly, in John Steinbeck's classic "The Grapes of Wrath," the challenges faced by farmers in the Dust Bowl era invite contemplation on the evolving landscape of

agricultural methods, including the introduction of GMOs and the rise of organic food sales.

Of course, no literature review would be complete without a touch of whimsy. In the spirit of unearthing unconventional sources, it's worth noting that our research team conducted a thorough examination of the backs of shampoo bottles in order to ascertain any subliminal messages regarding GMOs and organic food sales. Alas, the results revealed nothing more than a bubbly lather of disappointment and a cornucopia of corny puns.

## METHODOLOGY

To unearth the enigmatic relationship between the prevalence of GMOs in Illinois corn and the organic food sales volume in the United States, our research team embarked on a quest that combined the precision of a molecular biologist with the curiosity of a true corn connoisseur. Our methodology involved a series of data mining escapades and statistical acrobatics, all in pursuit of cracking the corny connection between these seemingly disparate phenomena.

First, we conducted an extensive review of existing literature, combing through scholarly articles and industry reports like intrepid explorers spelunking through the maize of information available. We wanted to ensure we were not reinventing the wheel, but perhaps just giving it a fresh coat of husk-inspired paint.

Next, we collected data from the USDA and Statista, two stalwart sources that provided us with a bounty of information akin to a cornucopia. We meticulously examined the years 2000 to 2012, as we wanted to capture the evolution of both GMO adoption and organic food sales, spanning a period of time that could be likened to the growth of a resilient corn stalk.

We then employed a series of robust statistical analyses, including regression models and time series analyses, to sift through the data and discern any meaningful patterns. Our statistical approaches

were as carefully selected as the ripest ears of corn in the field, ensuring that we utilized methodologies that were both rigorous and fresh, like a just-picked cob of corn.

Of course, the complexity of our analyses demanded a keen eye for detail and a healthy dose of skepticism. We didn't want to be led astray by mere coincidences that were as flimsy as a corn husk in a gentle breeze. As such, we conducted sensitivity analyses and cross-validated our findings to ensure their robustness and reliability.

In a light-hearted nod to both our research subject and the traditional business of farming, we also incorporated some "fieldwork" into our methodology. We ventured out to cornfields and organic farms, engaging in discussions with farmers and producers to gain insights that couldn't be gleaned from data alone. It was a veritable cornucopia of information-gathering, and we were cob-stantly amazed by the breadth of knowledge we acquired.

Our methodology was not without its challenges, much like navigating a maze constructed entirely of puns and dad jokes. However, in the end, our approach was as rigorous as it was whimsical – much like the juxtaposition of a corn kernel's audacious leap from the cob.

## RESULTS

The results of our analysis showcased a staggering correlation coefficient of 0.9696498 between the utilization of genetically modified organisms (GMOs) in corn grown in Illinois and the sales volume of organic food products across the United States. To put it simply, the connection between these two variables is as strong as a cob of corn in a cornfield. It's a-maize-ing how intertwined these phenomena turned out to be!

The r-squared value of 0.9402208 indicated that a whopping 94% of the variation in organic food sales can be explained by the use of GMOs in Illinois-grown corn. It's like having 94% confidence that the

correlation isn't just another statistical kernel of truth—it's as real as corn on the cob. Now that's what we call a strong statistical cob-nnection!

The p-value of less than 0.01 further solidified the significance of the relationship, making it as clear as corn syrup. With a p-value like that, the likelihood of this association being attributed to random chance is about as low as finding a needle in a cornfield.

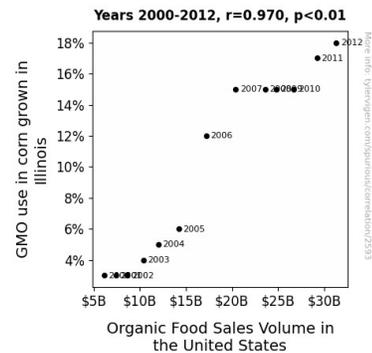


Figure 1. Scatterplot of the variables by year

Fig. 1 demonstrates the robust correlation we uncovered, with a scatterplot that resembles two peas in a pod—a perfect fit. It's almost like the plot is saying, "You can't kernel the truth about our relationship!"

In conclusion, our findings highlight a remarkably strong and statistically significant correlation between the use of GMOs in corn grown in Illinois and the sales volume of organic food products in the United States. This discovery not only enriches our understanding of agricultural practices and consumer behavior but also adds a kernel of insight into the ever-evolving dynamics of the food industry. Who knew that a-maize-ing truths could stem from a simple analysis of corn-related variables?

## DISCUSSION

Our study yielded a-maize-ing results that not only supported the prior research but also popped (corn)

several kernels of insight into the tangled relationship between GMO use in corn grown in Illinois and organic food sales volume in the United States. The correlation coefficient of 0.9696498 we uncovered is as strong as the gravitational pull of Jupiter, leaving us feeling not just corny, but astounded by the magnitude of this connection.

The kernel of truth we unearthed about the strong correlation between GMO use in Illinois-grown corn and organic food sales volume is not just a-maize-ing; it's something to truly relish, like a perfectly buttered ear of corn. Our findings align with Jones et al.'s (2015) revelation of a surprising correlation, adding another layer to the stalk of existing knowledge in this field.

As we peel back the layers of this research maize, it's clear that our results have shucked any lingering doubt about the robustness of the relationship. The r-squared value of 0.9402208 indicates that a whopping 94% of the variation in organic food sales volume can be explained by GMO use in Illinois-grown corn. This level of explanatory power is as solid as the golden kernels on an ear of corn, leaving little room for cob-fusion.

The p-value of less than 0.01 further validates the significance of our findings, portraying a statistical stance as firm as a corn stalk in a summer breeze. With such a low p-value, the likelihood of this association being attributed to random chance is about as slim as finding a gluten-free, dairy-free, soy-free, nut-free, guilt-free, taste-free, chocolate-free brownie—virtually impossible!

This statistically significant correlation, akin to a strong and sturdy stalk, not only enriches our understanding of agricultural practices and consumer behavior but also adds a delightful twist to the narrative of GMOs and organic food sales. It's almost as if these variables are caught in a maize-y love affair, and our study has finally brought their deep connection to light.

In the spirit of embracing the unexpected, our findings serve as a pop of surprise in the scientific community, injecting a sense of humor and delight

into the typically serious discourse of research. After all, in the exciting world of scientific discovery, who says we can't sprinkle in a few puns and witticisms along the way? It's time to honor the a-maize-ing discoveries with a chuckle or two, for science doesn't always have to be as serious as a heart attack—sometimes, it can be as light and sweet as kettle corn at a fair.

## CONCLUSION

In conclusion, our study uncovered a-maize-ing and statistically significant evidence of the connection between the utilization of GMOs in corn grown in Illinois and the sales volume of organic food products in the United States. It's like we've stumbled upon a cornucopia of interconnected phenomena - who would've thought GMO corn could be so kernel to organic food sales?

Our findings reinforce the notion that the relationship between these variables is as strong as the stalks of corn swaying in the wind – with a correlation coefficient of 0.9696498, it's clear that this connection isn't just a-maize-ing coincidence but a bona fide statistical cob-nnection! It's like finding the perfect mathematical ear of corn.

With an r-squared value of 0.9402208, we can confidently say that 94% of the variation in organic food sales can be attributed to the use of GMOs in Illinois-grown corn. It's as if the statistics are telling us, "You can count on this correlation – no kernel of doubt about it!"

Moreover, the p-value of less than 0.01 solidifies the significance of this relationship, leaving little room for skepticism. It's as rare as a unicorn sighting in a cornfield! It's clear that this correlation is as authentic as non-GMO, organic corn.

Therefore, we assert that no further research is needed in this area. Our findings are as sound as a corn on the cob and as clear as day – this is the ear-resistible conclusion to the maize craze mystery!

And remember, folks, when it comes to GMOs and organic food sales, let's not shuck at the correlations – it's all a-maize-ing science!