

How Food Safety is Affected by Climate Change

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DESCRIPTION

Climate change is transforming the world in profound ways, from rising sea levels to more intense weather events. But one of its less-discussed impacts is on food safety. As global temperatures rise and weather patterns become more unpredictable, the food we eat faces new risks from climate-induced factors. This article discovers how climate change affects food safety and what scientific research reveals about this critical issue.

Rising temperatures and foodborne pathogens

Higher global temperatures can create favourable conditions for foodborne pathogens like *Salmonella*, *E. coli*, and *Listeria*. A 2019 study published in *Environmental Health Perspectives* found a significant correlation between rising temperatures and an increase in foodborne illnesses. The warmer climate encourages the proliferation of bacteria in food products, particularly those requiring refrigeration. Moreover, temperature fluctuations can affect food transportation and storage. A 2021 study in the "Journal of Food Protection" indicated that higher temperatures can compromise the cold chain, leading to food spoilage and an increased risk of contamination. As climate change continues, the challenge of maintaining safe temperatures for food safety will grow.

Changing weather patterns and crop contamination

Climate change is leading to more frequent and intense extreme weather events, such as hurricanes, floods, and droughts. These events can contaminate food crops through waterborne pathogens or pollutants. A 2018 report from the Food and Agriculture Organization (FAO) highlighted that floods could spread pathogens from animal waste to croplands, increasing the risk of contamination. Similarly, droughts can cause soil to lose its fertility, leading to increased use of fertilizers and pesticides, which may end up in the food supply.

Additionally, changes in precipitation patterns can affect the quality and safety of crops. A 2020 study in *Global Change*

Biology found that erratic rainfall can lead to higher levels of mycotoxins, toxic compounds produced by fungi, in grains like corn and wheat. These mycotoxins can pose significant health risks if ingested.

Sea level rise and aquatic food safety

Rising sea levels and ocean temperatures can impact the safety of seafood. Warmer waters promote the growth of harmful algae, leading to algal blooms that produce toxins dangerous to marine life and humans. A 2017 study in *Marine Drugs* documented the link between climate change and the increase in harmful algal blooms. These toxins can accumulate in seafood, posing risks like paralytic shellfish poisoning.

Furthermore, rising sea levels can lead to saltwater intrusion into freshwater sources, affecting the quality of irrigation water for crops and potentially introducing contaminants. The *Journal of Water and Health* reported in 2022 that saltwater intrusion could increase the presence of certain pathogens in irrigation water, impacting crop safety.

Adaptation and mitigation strategies

Given the impact of climate change on food safety, adaptation and mitigation strategies are essential. Researchers are exploring various approaches to address these challenges, strengthening regulations on food safety, including stricter temperature controls during transport and storage, can reduce the risk of foodborne illnesses. Developing crop varieties resistant to extreme weather conditions and promoting sustainable farming practices can help mitigate the risks posed by climate change. Implementing systems to monitor weather patterns and predict potential food safety risks can enable timely responses to mitigate contamination.

CONCLUSION

Climate change is reshaping the food safety landscape in complex ways. As temperatures rise and weather patterns become more erratic, the risks of foodborne pathogens, crop

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contamination, and seafood safety increase. Educating the public about food safety risks associated with climate change can encourage safer food handling and consumption practices. Addressing these challenges requires a multifaceted approach,

combining scientific research, improved regulations, and public awareness. By understanding the impact of climate change on food safety, we can take proactive steps to ensure a safe and secure food supply for the future.