# Food crime: Definitions, taxonomies, culpability, and theoretical perspectives

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## ABSTRACT

Food crime refers to a broad array of illegal, harmful, and unethical activities embedded within the global food system. The topic has only recently gained traction as a subject of criminological inquiry. This article provides an introductory review of the concept of food crime, clarifies its relationship to adjacent constructs such as food fraud and food safety, and synthesizes recent empirical literature. The paper provides definitions of food crime, taxonomies of food crime, and reviews recent research into food fraud and adulteration, organized crime in the food sector, labor exploitation and food supply chain abuses, environmental harms of industrial food production, and harms associated with foods we eat. The paper also addresses food insecurity, inequality, and corporate power, illustrating the specific ways corporations are culpable for food crimes. Different theoretical approaches taken in the food crime literature are addressed, including Green Criminology, Nutritional Criminology, and Zemiology. The global nature of food crime is addressed, and future directions in the field are assessed. The review identifies definitional ambiguity, the centrality of economic motivations, the criminogenic nature of globalized supply chains, and the underdevelopment of empirical research as key themes. Overall, the article is meant as a thorough yet brief introduction to the topic of food crime in order to inform readers and spur further research.

***Keywords:*** *Criminology, Food adulteration, Food crime, Food fraud, Food Criminology, Food safety, Labor exploitation, Zemiology.*

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**Highlights of this paper**

- This paper summarizes definitions of food crime.
- This paper summarizes taxonomies of food crime.
- This paper reviews recent research on food crime.

## 1. FOOD CRIME: AN INTRODUCTION

### *1.1. Introduction*

Every day, billions of people engage in what should be one of humanity's most fundamental acts of trust: eating. When consumers buy a jar of honey, a filet of salmon, a bottle of olive oil, or a container of baby formula, they rely on an intricate web of producers, processors, distributors, retailers, and regulators to ensure that the product is exactly what it claims to be—safe, authentic, and honestly labeled. Yet, this trust is routinely violated, sometimes with devastating consequences. The study of how and why food systems become sites of harm, fraud, exploitation, and crime falls under a relatively young but rapidly growing field of criminological inquiry known as food crime (Robinson, 2024). Food crime is not a single, easily defined act. It is an umbrella concept that encompasses everything from the adulteration of spices with toxic dyes to the exploitation of migrant farmworkers, from the deliberate mislabeling of seafood to the industrial pollution of waterways by agricultural runoff, from the infiltration of legitimate food markets by organized criminal syndicates to the marketing of ultra-processed food products in ways that deliberately conceal their health harms (in line with what tobacco companies did for decades). At one end of the spectrum, food crime is measured in seized shipments, criminal prosecutions, and laboratory tests revealing adulterated products. At the other end, it is measured in chronic disease rates, reduced life expectancies, environmental degradation, and the structural inequalities that determine who eats well and who does not. The field has evolved dramatically since criminologist Hazel Croall first introduced the term in 2007. Where food crime was once almost entirely ignored by academic criminology, it has since generated numerous articles, a few books, and an increasingly interdisciplinary body of research drawing on green criminology, corporate crime studies, public health, food science, and political economy. Today, with global food fraud incidents surging and organized crime groups more deeply embedded in food supply chains than ever before, the scholarly and policy urgency of the field has never been greater.

This article provides a comprehensive overview of the field of food crime. It begins by tracing the definitional debates at the heart of the field, clarifying what food crime is and what distinguishes it from related concepts like food fraud and food safety. It then surveys categories of food crime as identified by researchers, before turning to a summary of recent empirical findings on the scale, scope, and forms of food crime globally. The article then examines key theoretical frameworks that scholars bring to the study of food crime, including green criminology, white-collar crime theory, and the emerging concept of nutritional criminology, before concluding with a discussion of the future directions of the field.

## 2. DEFINING FOOD CRIME: A CONTESTED CONCEPT

The term "food crime" was coined by criminologist Croall (2007) where she described it as encompassing "the many crimes that are involved in the production, distribution, and selling of basic foodstuffs." This foundational definition was deliberately broad, situating food crime within the tradition of green criminology, a branch of the discipline concerned not only with legally recognized crimes but with harms that, while sometimes lawful, cause significant damage to humans, non-human animals, and the natural environment (Croall, 2013). This breadth has since been both celebrated and criticized. On one hand, it allows researchers to capture the full spectrum of injustice embedded in modern food systems, including harms that are perfectly legal under current law but that cause

immense suffering. On the other hand, the expansiveness of the concept creates challenges for enforcement, legal classification, and consistent measurement. If food crime includes behaviors that are "lawful but awful," a phrase put forth by Passas (2005) then it becomes difficult to clearly demarcate the boundaries of the field and to identify when and how the criminal law should respond. Croall (2013) reformulation remains perhaps the most widely cited definition in the literature. She defined food crime as an umbrella concept incorporating criminal and harmful activities "that directly involve the processing, production, and sale of food, as well as those that are more indirectly involved in local and global food trades" (Croall, 2013). This formulation introduced a crucial distinction: some food crimes are directly criminal acts (e.g., fraud, adulteration, theft), while others are harmful activities occurring at a more systemic level (e.g., labor exploitation, environmental degradation, inequality of food access) that may not cross legal lines but nonetheless cause serious harm. Other scholars have offered competing formulations. Gray and Hinch (2018) defined the concept as encompassing "illegal, criminal, harmful, unjust, unethical or immoral food-related behaviors and omissions of behavior." This definition is deliberately maximalist, including not just illegal acts but behaviors that are legal yet ethically indefensible, a position consistent with the social harm approach championed by criminologists working within the Zemiology tradition, who argue that the criminal law's arbitrary boundaries should not constrain scholarly investigation of harm. Robinson (2024) provides perhaps the broadest definition of food crime, showing that food crimes include not only harms associated with the production of food (e.g., environmental degradation), but also with food itself (e.g., cancer, heart disease, obesity, diabetes). A narrower, more institutionally oriented definition has been developed in policy contexts. The UK Food Standards Agency (FoodAkai, 2026) which established the Food Standards Agency (2014) defines food crime as "serious fraud and related criminality in food supply chains." This definition is more legally grounded, focused on intentional deception and criminal fraud, and is designed to guide law enforcement priorities rather than to capture the full breadth of food-related harm. It presents seven types of food crime, all clearly illegal:

1. Illegal processing—slaughtering or preparing meat and related products in unapproved premises or using unauthorised techniques.
2. Misrepresentation—marketing or labelling a product to wrongly portray its quality, safety, origin or freshness.
3. Waste diversion—illegally diverting food, drink or feed meant for disposal, back into the supply chain.
4. Substitution—replacing a food or ingredient with another substance that is similar but inferior.
5. Document fraud—making, using or possessing false documents with the intent to sell or market a fraudulent or substandard product.
6. Theft—dishonestly obtaining food, drink or feed products to profit from their use or sale.
7. Adulteration—including a foreign substance which is not on the product's label to lower costs or fake a higher quality.

These definitional tensions are more than academic. They determine what falls within the scope of investigation and regulation, whose interests are recognized as violated, and what kinds of responses (e.g., criminal prosecution, civil regulation, public health intervention, social policy reform) are considered appropriate. Researchers working within the critical criminology tradition tend to favor broader definitions that foreground social harm, structural inequality, and corporate power, while those working closer to law enforcement and food science tend to favor narrower, legally operational definitions centered on fraud and intentional deception. What all definitions share is a recognition that the food system is not merely an economic arena but a site of power, vulnerability, and harm, one in which the choices made by corporations, governments, and regulators have profound consequences for public health, the environment, and social justice.

### 2.1. A Taxonomy of Food Crime

Given the breadth of the concept, researchers have proposed various typologies to organize the forms food crime takes. While no single taxonomy commands universal assent, the literature generally recognizes several major categories.

### 2.2. Food Fraud and Adulteration

The most studied and most operationally tractable form of food crime is "food fraud," the deliberate and economically motivated falsification of food products for financial gain (Gussow & Mariët, 2022; Lord, Flores Elizondo, Davies, & Spencer, 2022; Manning & Soon, 2016; Robson, Dean, Haughey, & Elliott, 2021). As defined by Spink and Moyer (2011) food fraud is "a collective term used to encompass the deliberate and intentional substitution, addition, tampering, or misrepresentation of food, food ingredients, or food packaging; or false or misleading statements made about a product, for economic gain." These scholars identified seven distinct subtypes of food fraud: adulteration (adding or substituting a fraudulent component), mislabeling, tampering, counterfeiting, overrun (making more product than is licensed), diversion (selling products in unauthorized markets), and simulation (making a look-alike product). Of these, adulteration has consistently been found to be the most prevalent. Adulteration encompasses substitution (i.e., replacing a high-value ingredient with a cheaper alternative), dilution, and the addition of unauthorized substances, sometimes with serious public health consequences.

Some of the most striking documented cases illustrate the variety and severity of food fraud. Extra-virgin olive oil, one of the world's most frequently adulterated commodities, has been routinely mixed with cheaper seed and vegetable oils; a study at the UC Davis Olive Center found that a substantial portion of imported extra-virgin olive oil sold in the United States failed to meet the declared standard (Bailey, 2010). Honey is another heavily targeted product: European Commission testing found that close to half of honey samples tested were adulterated with sugar syrups (European Commission, 2026a). Seafood mislabeling has been systematically documented; a 2013 nationwide study by the conservation group Oceana (2013) found that approximately a third of the 1,215 seafood samples tested were mislabeled according to FDA guidelines, with popular species like red snapper, tuna, and Atlantic cod among the most frequently misrepresented. Spice imports have been found to be laced with non-spice materials and even hazardous substances; FDA testing has revealed that a significant proportion of imported spices contain filth, pathogens, or illegal colorants (Beach, 2016). The most catastrophic documented case of food fraud in recent history was the 2008 Chinese milk scandal, in which melamine, an industrial chemical, was added to infant formula and other dairy products to artificially inflate apparent protein content during routine testing. The scandal impacted about 300,000 youth, resulted in the hospitalization of tens of thousands of infants and at least six deaths, and triggered a profound global crisis of confidence in Chinese food exports (Gossner et al., 2009). It remains the paradigmatic case of what food fraud at industrial scale, driven by commercial pressure and regulatory failure, can look like at its most lethal.

### 2.3. Organized Crime in the Food Sector

Food fraud is not always the work of small-scale opportunistic actors. Research also documents the involvement of organized crime groups, including mafia-type organizations, in food sector crime. The appeal is not difficult to understand: food supply chains are long, complex, often opaque, and highly profitable. Further, the penalties for food fraud, even where detected and prosecuted, have historically been far lower than those for drug trafficking or other serious organized crime offenses. Food also provides an ideal setting for money laundering, with relatively high transaction volumes and the difficulty of precisely valuing agricultural products creating ample

opportunities to obscure the origins of illicit funds. An article by Rizzuti (2022) showed that the Italian 'Ndrangheta, a powerful organized crime group, had engaged in money laundering by exporting adulterated extra-virgin olive oil to foreign markets, using the food sector both as a site of fraud and as a vehicle for laundering proceeds from other criminal enterprises (Bacchi, 2017; Rizzuti, 2020). Food containers have also been documented as concealment vehicles for drug shipments, adding another dimension to the relationship between organized crime and food systems. Research highlights a conceptual point that matters greatly for enforcement: the line between "legitimate" corporate actors and "criminal" organized crime is often blurry in the food sector. Rizzuti's framework of "organised food crime" encompasses both criminal networks behaving like legitimate businesses and legitimate businesses behaving like criminal networks, a distinction that challenges law enforcement agencies that are oriented toward categorically different types of offenders.

Europol has reported that criminal organizations are increasingly targeting food markets, engaging in activities including meat fraud, illicit alcohol production, and seafood mislabeling (Europol, 2022, 2025). Its Operation OPSON has led to the seizure of thousands of tons of fake and adulterated foods. The infiltration of food markets by organized crime is particularly pronounced in Southern Europe, where the overlap between agricultural industries and long-established criminal networks creates structural vulnerabilities. But the problem is by no means confined to Europe: the global food system, characterized by long supply chains, multiple intermediaries, weak regulatory capacity in many exporting countries, and intense price competition, creates criminogenic conditions that organized actors worldwide have learned to exploit.

### *2.4. Labor Exploitation and Food Supply Chain Abuses*

A category of food crime that is particularly acute in the critical criminology literature, though often overlooked in more narrowly regulatory frameworks, is the systematic exploitation of labor in food production (Robinson, 2025a). The workers who pick fruit, process meat, harvest shellfish, and tend livestock often labor under conditions that are dangerous, poorly compensated, and, in the most extreme cases, amounting to forms of forced labor, human trafficking, and modern slavery (Barclay, 2013). One study claims that 62% of total forced labour risk stems from domestic production or processing (Blackstone et al., 2023). The situation of migrant agricultural workers in Southern Europe has attracted attention. In Southern Italy, thousands of itinerant agricultural workers, predominantly from sub-Saharan Africa, with some from Eastern Europe, have been subjected to conditions sufficiently severe that anti-slavery campaigners have described them as being treated as "Europe's tomato slaves." These workers labor under the supervision of labor intermediaries known as "caporali," who take a cut of their wages, often for transportation and basic necessities, leaving workers with subsistence incomes (Equal Times, 2026; Freedom United, 2026). The produce they harvest enters mainstream European supply chains and reaches supermarkets across the continent, meaning that consumers who purchase Italian tomato products may unknowingly be implicated in what researchers classify as a form of food crime. Similar patterns of labor exploitation are documented in the agricultural sectors of many countries, from the seafood processing industries of Southeast Asia, where forced labor has been documented in shrimp supply chains that supply major Western retailers, to the fruit-picking industries of California and Australia, where migrant workers on temporary visas occupy structurally precarious positions that make them vulnerable to exploitation (see, e.g., (Chase, 2024; Yea, 2022)). With regard to the shrimp issue, CBS News (2024) reports: "A new investigation focused on three of the world's largest producers of shrimp released on Monday claims that as big Western supermarkets make windfall profits, their aggressive pursuit of ever-lower wholesale prices is causing misery for people at the bottom end of the supply chain." From a green criminological perspective, labor exploitation in food systems is as much a food

crime as product adulteration, because it inflicts serious harm on human beings as a direct consequence of the production of food. The harm may be less visible to consumers and regulators focused on product safety, but it is no less real.

### 2.5. Environmental Harms of Industrial Food Production

Green criminology has also trained its attention on the environmental dimensions of food crime, most notably on the ways in which industrial food production causes serious harm to ecosystems, non-human animals, and communities through pollution, resource depletion, and habitat destruction (Robinson, 2024).

The environmental harms associated with industrial meat production are particularly extensively documented. Concentrated animal feeding operations (CAFOs) generate enormous volumes of animal waste, which, when mismanaged, pollutes waterways, degrades soil, and contributes to the proliferation of antibiotic-resistant bacteria (Robinson, 2025b). Research has documented how state subsidy regimes for industrial agriculture can be criminogenic, creating incentives for practices that generate significant environmental harm, and in some cases, creating direct opportunities for subsidy fraud, as when operators misrepresent the volume or nature of their waste-processing activities to claim public funds. Cato (2026) for example, documents extensive fraud in the following states: Arkansas, California, Colorado, Florida, Iowa, Kentucky, Michigan, Missouri, New York, North Dakota, South Dakota, and Washington. Industrial aquaculture presents analogous challenges. Research on Atlantic salmon farming in Scotland and European eel aquaculture has found that these industries, impose significant harms on wild fish populations, because both eel and salmon farming rely on the extraction of wild fish as feed inputs (Ford & Myers, 2008; Montogue, 2025). This analysis, grounded in green criminological and political ecology frameworks, challenges the "sustainable" legitimacy claims of aquaculture and reveals how what is officially categorized as an environmentally beneficial industry can produce systemic ecological harm. The relationship between industrial agriculture and climate change, through methane emissions from livestock, nitrous oxide from fertilizer application, and carbon emissions from land use change, also falls within the ambit of food crime as understood by scholars working in this tradition, though this terrain remains contested and under-theorized (Robinson, 2025b).

### 2.6. Food Harms

Then there is the issue of harms associated with foods themselves. Robinson (2026) shows that at least 395,000 people each year in the US die from food-related conditions. These data are shown in Table 1 along with number of Americans living with illnesses related to their food intake.

**Table 1.** Deaths attributable to diet and the number of americans living with illnesses related to diet.

| **Deaths** | |
|---|---|
| High sodium | 66,508 |
| Lack of nuts and seeds | 59,375 |
| Processed meat | 57,766 |
| Lack of omega-3s | 54,626 |
| Too few vegetables | 53,410 |
| Too few fruits | 52,547 |
| Sugar sweetened beverages | 51,694 |
| Total | 395,926 |

**Source:** Micha et al. (2017). Association between dietary factors and mortality from heart disease, stroke, and type 2 diabetes in the United States. *JAMA, 317*(9), 912-924.

**Table 2.** Americans living with diseases related to diet.

| **Obesity** | **78,100,000** |
|---|---|
| High Blood Pressure | 66,900,000 |
| Diabetes | 29,100,000 |
| Heart disease | 26,600,000 |
| Cancer | 20,073,000 |
| Osteoporosis | 9,900,000 |
| Stroke | 6,400,000 |

**Source:** Center for Science in the Public Interest (2025). Why good nutrition is important. Downloaded from: https://www.cspinet.org/eating-healthy/why-good-nutrition-important

The death number is likely an underestimate, because according to the Center for Science in the Public Interest (2025) (see Table 2). "Unhealthy diet contributes to approximately 678,000 deaths each year in the U.S., due to nutrition- and obesity-related diseases, such as heart disease, cancer, and type 2 diabetes. In the last 30 years, obesity rates have doubled in adults, tripled in children, and quadrupled in adolescents." The Center writes: "The typical American diet is too high in calories, saturated fat, sodium, and added sugars, and does not have enough fruits, vegetables, whole grains, calcium, and fiber. Such a diet contributes to some of the leading causes of death and increases the risk of numerous diseases, including:

- Heart disease.
- Diabetes.
- Obesity.
- High blood pressure.
- Stroke.
- Osteoporosis.
- Cancers, including cervical, colon, gallbladder, kidney, liver, ovarian, uterine, and postmenopausal breast cancers; leukemia; and esophageal cancer (After researchers took smoking into account)."

The National Library of Medicine agrees with the above sentiment, offering two specific findings:

- Finding 1: Obesity, cardiovascular disease, type 2 diabetes, and certain types of cancers are the health risks affecting the greatest number of Americans that are also most strongly associated with diet.
- Finding 2: Americans consume too many calories, saturated fats, trans fats, and added sugars; too much sodium; and too little vitamin D, calcium, potassium, and fiber (Wartella, Lichtenstein, & Boon, 2010).

Incredibly, Matthews and Kurnat-Thoma (2024) put the death toll even higher, writing: "Approximately one million people die annually from diet-related chronic diseases in the United States." Whatever the actual number, it is now the leading cause of mortality in the United States, and the same is true around the world, where poor diet is now thought to kill 11 million people in total each year (Aubrey, 2019).

### *2.7. Food Insecurity, Inequality, and Corporate Power*

Perhaps the most expansive strand of food crime scholarship concerns the structural conditions that determine who has access to adequate, nutritious, safe food and who does not. "Food insecurity," or the lack of reliable access to sufficient, affordable, and nutritious food, affects hundreds of millions of people globally, even as food systems generate historically unprecedented quantities of food. In the US alone, more calories are produced for each American than are actually needed, yet many Americans still go hungry (Robinson, 2024). For scholars working within critical criminology, the political-economic structures that produce and reproduce food insecurity constitute

a form of food crime: not crime in the narrow criminal-law sense, but harm that is systematic, preventable, and embedded in relations of power (Brady et al., 2021; Gladkova, 2023).

Researchers have pointed to the concentration of market power in global food systems, where a handful of large corporations control major share of seed supply, food processing, and retail, as a criminogenic condition that suppresses competition, exploits producers, and prioritizes profit over nutrition. The term "cheap capitalism," introduced by Cheng (2012) in his study of food crime in China, describes a systemic dynamic in which the pressure to produce food cheaply, at scale, and for maximum profit creates structural incentives to cut corners on safety, quality, and labor rights. He writes that cheap capitalism is "characterized by low price, inferior quality of products and degraded social morality and business ethics" (p. 254).

The marketing practices of "Big Food" corporations have come under particular scrutiny. Researchers drawing on the analogy with tobacco companies (e.g., see (Campbell, 2022; Center for Science in the Public Interest, 2022; Glantz, 2019; Valenti, 2001)) have documented how major food corporations have funded research that downplays the health harms of their products, lobbied against labeling and regulatory requirements, and deployed sophisticated marketing strategies (often targeted at children and low-income communities) to sustain the consumption of products known to contribute to obesity, diabetes, cardiovascular disease, and other non-communicable diseases. From the standpoint of social harm, these behaviors may constitute what critical criminologists call crimes without lawbreaking, or harmful acts that fall outside the reach of current criminal law but that impose enormous costs on human health and wellbeing (Passas, 2005).

### *2.8. Scale of the Problem: Recent Empirical Research*

The empirical challenge of measuring food crime is substantial. By its nature, successful food fraud is undetected food fraud, so it does not appear in datasets. Reported incidents therefore represent a fraction of actual occurrence, and the "dark figure" of food crime is acknowledged by researchers to be vast. Nevertheless, available data paint a sobering picture.

Global annual costs of food fraud are estimated at between $10 and $15 billion, though many analysts consider this figure conservative given the difficulties of measurement. According to Moyer, DeVries, and Spink (2017) "a single shipment of fraudulent food can result in tens of thousands of dollars in illegal profit." Yet, "the full economic impact of a food fraud incident is often incalculable." A January 2025 analysis by food safety consultants, FoodChain ID, found that reported cases of food fraud jumped by 10% in 2024 compared to the previous year, with early indicators suggesting the same rate of increase for 2025. The surge in fraud incidents tracks closely with patterns of supply chain disruption: when commodity prices spike, the temptation and opportunity for substitution and adulteration increase correspondingly. As one example, the invasion of Ukraine, which dramatically disrupted global sunflower oil supplies, was associated with a documented spike in adulteration cases involving cheaper oil substitutes (Jagtap et al., 2022). Similarly, grain and wheat fraud has swept across European supply chains as companies forced to switch suppliers have found themselves working with unfamiliar vendors whose product integrity is harder to verify. Data show hundreds of food fraud globally in 2025, resulting in mass seizures, business shutdowns, and arrests. Europe's Rapid Alert System for Food and Feed (RASFF) and its dedicated food fraud network have recorded thousands of notifications in recent years, with honey, olive oil, fish, meat, and spices consistently among the most frequently reported categories of adulterated or fraudulent products (European Commission, 2026b). The FoodAkai Global Food Fraud Index has identified nuts, dairy, and cereals as emerging high-risk categories, projecting very large increases in fraud incidents in those categories, driven by long supply chains with multiple intermediaries and high commodity value (FoodAkai, 2026). Garlic appeared in fraud reports

for the first time in early 2025. Dairy products with premium positioning, particularly those marketed as organic or grass-fed, are also under increasing threat as verification systems for premium claims prove difficult to enforce under conditions of supply chain pressure. In the organized crime dimension, Europol's ongoing monitoring of food sector crime has confirmed that criminal networks are increasingly sophisticated in their exploitation of food systems. Money laundering through food service businesses, the use of food containers to conceal drugs, and the fraudulent manipulation of food subsidies and agricultural support payments represent documented vectors of organized criminal activity in the food sector across multiple European jurisdictions.

At the level of public health harm, researchers have developed data on the toll of food-related disease. Foodborne illness, caused by pathogens, adulterants, or contamination that may result from negligence, recklessness, or deliberate fraud, affects hundreds of millions of people annually worldwide. The World Health Organization (2026) estimates that unsafe food causes 600 million cases of foodborne disease and 420,000 deaths each year, with children under five years of age disproportionately affected. While not all foodborne illness is attributable to criminally fraudulent conduct, the line between negligence and criminal recklessness in food production is one that researchers and regulators have increasingly sought to scrutinize.

## 3. THEORETICAL FRAMEWORKS IN FOOD CRIME RESEARCH

### *3.1. Green Criminology*

The dominant theoretical framework in food crime scholarship is green criminology, a tradition that, since its emergence in the 1990s, has argued for an expansion of criminological inquiry beyond the boundaries of formal criminal law to encompass harms inflicted on humans, non-human animals, and ecosystems. Green criminology's insistence that environmental and ecological harm deserve scholarly attention regardless of its legal status has been foundational to the development of food crime as a field.

Within green criminology, food crime research has been particularly attentive to the ways in which industrial food production systems generate what White (2017) calls "eco-global" harm, harm that crosses national borders, implicates global commodity chains, and is embedded in the structural dynamics of capitalist agriculture. Walters (2004) work on genetically modified food has explored how the governance of GM agriculture connects issues of corporate monopoly power, political corruption, and environmental harm within a single analytical framework.

### *3.2. White-Collar and Corporate Crime*

Food crime is also extensively analyzed through the lens of white-collar and corporate crime. Many of the most economically significant food crimes are committed not by street-level fraudsters or small-scale adulterers but by established corporations with sophisticated organizational structures, legal counsel, and lobbying resources (Robinson, 2024). The dynamics of corporate food fraud, where decision-makers in large organizations systematically prioritize profit over product integrity, share important structural features with white-collar crime in other sectors.

The concept of "market-driven fraud" developed by Lord et al. (2022) captures a key mechanism: food fraud is not simply the result of individual moral failing but of market structures that create opportunities and incentives for fraudulent conduct. When commodity prices are volatile, supply chains are opaque, verification mechanisms are weak, and the rewards for fraud are high relative to the risk of detection and punishment, the conditions are ripe for market-wide fraudulent behavior. The horsemeat scandal that swept through European food markets in 2012 and

2013, in which horsemeat, sometimes contaminated with the veterinary drug phenylbutazone, was found in products labeled as beef across multiple countries, exemplified this dynamic: the fraud was not the work of a single rogue actor but of a systemic dysfunction in European meat supply chains under intense price competition (O'mahony, 2013).

The state-corporate crime framework has also been applied to food crime, particularly in cases where large-scale food corporations exert monopolistic control over supply chains with the tacit approval or active facilitation of state actors (Robinson, 2024). Agricultural subsidy regimes, trade policy, and food safety regulation have all been analyzed as sites where state and corporate interests converge to produce conditions that facilitate harm.

### *3.3. Nutritional Criminology*

One of the most provocative and contested theoretical developments in food crime scholarship is the emergence of what researchers have termed "nutritional criminology," the study of the relationship between diet, nutrition, brain function, and criminal behavior (Prescott et al., 2024). The core claim of nutritional criminology is that the dramatic expansion of ultra processed food consumption in the twentieth century, driven by the rise of industrial food manufacturing and the aggressive marketing of highly processed products, has contributed to increases in mental health disorders, impulse control problems, and antisocial behavior by disrupting normal brain function through neuroinflammatory, metabolic, and microbiome pathways. Evidence is cited from experimental studies conducted in institutional settings, including a well-documented series of studies in juvenile detention facilities by social scientist Stephen Schoenthaler in the early 1980s, in which dietary modifications associated with reduced refined sugar intake were found to correlate with decreases in documented antisocial behavior. More recent epidemiological research links ultra-processed food consumption to depression, anxiety, and aggressive behavior (Robinson, 2025a).

Nutritional criminology represents an intersection of food crime scholarship in a different sense than food fraud or organized crime: it asks not only about crimes committed against consumers through the food system but about the ways in which the food system may contribute to criminal behavior by shaping the neurobiological conditions under which individual conduct unfolds. This is a considerably more speculative and contested claim than the well-documented harms of adulteration or labor exploitation, and researchers in the field are careful to note that diet is not the exclusive contributor to antisocial behavior and that the evidence base requires further rigorous investigation. Nevertheless, the framework opens important questions about corporate responsibility for the public health and behavioral consequences of mass-market food products.

### *3.4. Social Harm and Zemiology*

The social harm perspective, also known as Zemiology, provides a meta-theoretical framework that cuts across all the specific theories discussed above. Zemiologists argue that the concept of crime, defined by reference to what the state has chosen to criminalize, is an inadequate tool for understanding harm in society, because the state's definitions of crime are themselves the product of political power rather than objective moral necessity (Canning & Tombs, 2021; Klimecki & Parker, 2025). The state criminalizes some harms and not others based on the interests of powerful social actors, and a discipline committed to studying only legally recognized crimes will systematically undercount the harms imposed by those with the power to shape the law.

For food crime scholars, the Zemiological critique is particularly germane. The most lethal forms of harm in food systems, including chronic diseases caused by decades of ultra-processed food consumption, the environmental devastation of industrial agriculture, and the systematic exploitation of agricultural labor, are largely not criminalized. A criminology confined to legally recognized crime would have little to say about

them. Food crime scholarship, by adopting the broader social harm framework, insists that these harms deserve the same rigorous scholarly attention as burglary, assault, or drug trafficking.

### 3.5. Corporate and Industry Responsibility

A persistent theme in food crime research is the question of corporate responsibility. Food businesses are not merely passive victims of fraud perpetrated by suppliers; they are also, in many cases, perpetrators or facilitators of harm, through deliberate adulteration, misleading marketing, exploitative labor practices, or the externalizing of environmental costs. The research challenge is to understand how organizational structures, market incentives, and regulatory environments interact to produce or inhibit corporate food crime.

Robinson (2024) identifies the following as behaviors and outcomes that large food companies are culpable for:

- Producing excess calories.
- Putting food in non-food environments.
- Funding research to create one-sided studies.
- Using front groups to confuse consumers.
- Advertising unhealthy products.
- Deceptive advertising.
- Food fraud.
- Product shrinkage.
- Deleterious health outcomes and other harms of the system.

His research summarizes each of the above behaviors and illustrates the specific actions taken by food companies that make them responsible for them. Stated simply, it is large, corporate food companies that produce so much unhealthy food and surround us with it even in non-food environments. Then, they fund research to create one-sided studies and use front groups to confuse consumers, illustrating how far they are willing to go in order to get their food products into our hands and mouths. They also advertise their unhealthy products to us and engage in deceptive advertising about the nature of their products. Finally, it is food corporations who carry out food fraud, including a particularly devious form called product shrinkage, where consumers get less and less of products sold in the same size containers over time.

### 3.6. Food Crime in Global Context

Food crime is a global phenomenon, but its forms, drivers, and impacts vary significantly by region and national context. In the Global South, food crime often intersects with issues of food insecurity, land grabbing, agricultural biopiracy, and the structural vulnerabilities of smallholder farmers operating within global commodity systems dominated by wealthy-country corporations and regulatory frameworks. Research by Goyes and South (2016) on land grabs and biopiracy in Colombia illustrates how criminal and quasi-criminal practices in the food system can dispossess communities, undermine food sovereignty, and degrade ecosystems in ways that receive almost no attention from mainstream criminological inquiry. They write: "The legal framework that permits the appropriation of natural genetic products in Colombia also criminalizes aspects of traditional ways of life and enables a legally approved but socially harmful land-grabbing process" (p. 558). Then there is China with large scale and frequent food fraud scandals, of which the 2008 melamine milk scandal was the most devastating but by no means the only example. Such scandals have been analyzed by researchers as symptoms of a developmental model that prioritized rapid economic growth at the expense of regulatory capacity, institutional accountability, and consumer protection (Zhang & Xue, 2016). In Europe, the horsemeat scandal and subsequent research have

highlighted how the complexity and fragility of pan-European food supply chains create multiple points of vulnerability to fraud, particularly in commodity meat markets where intense price pressure and multiple intermediary relationships make product traceability difficult (Reilly, 2023). The EU's evolving regulatory framework for food fraud, combining notifications, coordination, and national enforcement, represents the most developed regional system for food fraud governance, though researchers note significant variation in enforcement capacity and legal penalties across member states. Brooks, Elliott, Spence, Walsh, and Dean (2017) note that "industry attitudes have changed substantially, testing and surveillance systems have been integrated into normal industry practice and the government is more prepared for future incidents through the establishment of the National Food Crime Unit (NFCU)."

### *3.7. Looking Forward: Challenges and Emerging Priorities*

Despite the significant growth of food crime as a field, researchers have identified several important gaps and emerging challenges that will shape the agenda for the coming years. The definitional challenge remains unresolved. The ongoing tension between narrow, legally operational definitions of food crime and broader social harm perspectives is not merely a theoretical dispute: it determines what gets counted, what gets investigated, and what kind of institutional response is considered appropriate. The field will benefit from more systematic efforts to map the full spectrum of food-related harm and to develop conceptual frameworks that can accommodate both the legal-operational and the critical-theoretical dimensions of the phenomenon. The dark figure problem (i.e., the gap between actual food crime and detected food crime) remains enormous. Better data collection, more sophisticated analytical tools, and stronger international information sharing are needed to develop a more reliable picture of the true scale of food crime globally. Researchers have called for investment in systematic surveillance systems capable of detecting emerging fraud risks before they produce major scandals or public health crises. The intersection of food crime with other forms of criminality, particularly organized crime, money laundering, and human trafficking, requires more integrated analytical and enforcement frameworks. The current institutional architecture, in which food regulators, financial intelligence units, and police forces often operate in relative isolation from one another, is poorly suited to addressing the multi-dimensional criminality of organized food crime. Developing genuine interagency cooperation, with shared intelligence and coordinated enforcement, is a priority identified by multiple researchers. The question of corporate accountability remains central. Research consistently finds that market structures incentivize food crime and that individual prosecution of rogue operators, while important, does not address the systemic conditions that generate harm. Regulators and researchers have called for more attention to corporate liability, civil enforcement, and market regulation as complements to criminal prosecution. Finally, the emerging field of nutritional criminology raises profound questions about the long-term social consequences of the ultra-processed food revolution. Robinson (2025a) for example, demonstrates that ultra-processed foods kill more Americans than all street crimes combined, and it's not even close. And Prescott et al. (2024) illustrate how ultra-processed foods impact the brains of young people, leading to increased risks of antisocial behavior. If the evidence for a link between diet, brain function, and antisocial behavior continues to strengthen, the policy implications for nutrition policy, food marketing regulation, institutional feeding programs, and criminal justice would be significant. The field remains at an early stage, and rigorous further investigation is needed, but it represents one of the most intriguing frontiers in food crime scholarship.

## 4. CONCLUSION

Food crime is at once ancient and newly discovered. Adulteration, fraud, and exploitation in food systems are as old as commerce, but the scholarly field dedicated to understanding them is barely two decades old. In that time, researchers have established that food crime is not a peripheral concern but a central one: the harms it inflicts, on individual consumers, on public health systems, on agricultural workers, on ecosystems, and on the institutional integrity of food markets, are vast, pervasive, and in many cases preventable. The field has grown by insisting on a principle that orthodox criminology was slow to accept: that the most serious harms in society are not always the ones the criminal law recognizes as crime. By drawing on green criminology, corporate crime theory, social harm frameworks, and now nutritional criminology, food crime scholars have developed a multi-dimensional picture of how food systems can be sites not just of nourishment but of exploitation, deception, and systemic harm.

The empirical record, which surging fraud incidents, documented organized criminal infiltration of supply chains, the catastrophic health consequences of systematic food adulteration, and the hidden suffering of exploited agricultural workers, confirms the urgency of this agenda. So does the regulatory gap: enforcement systems that are fragmented, under-resourced, and too often oriented toward reactive response rather than proactive prevention.

What food crime research makes clear, above all, is that what we eat is never merely a private matter of individual choice. It is a profoundly social, political, and ethical question, one shaped by market structures, corporate decisions, regulatory choices, and power relationships that determine not just what food is safe but who benefits and who is harmed by the systems that produce it. A criminology that takes food seriously is, ultimately, a criminology that takes seriously the conditions under which human beings live, eat, and flourish.

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