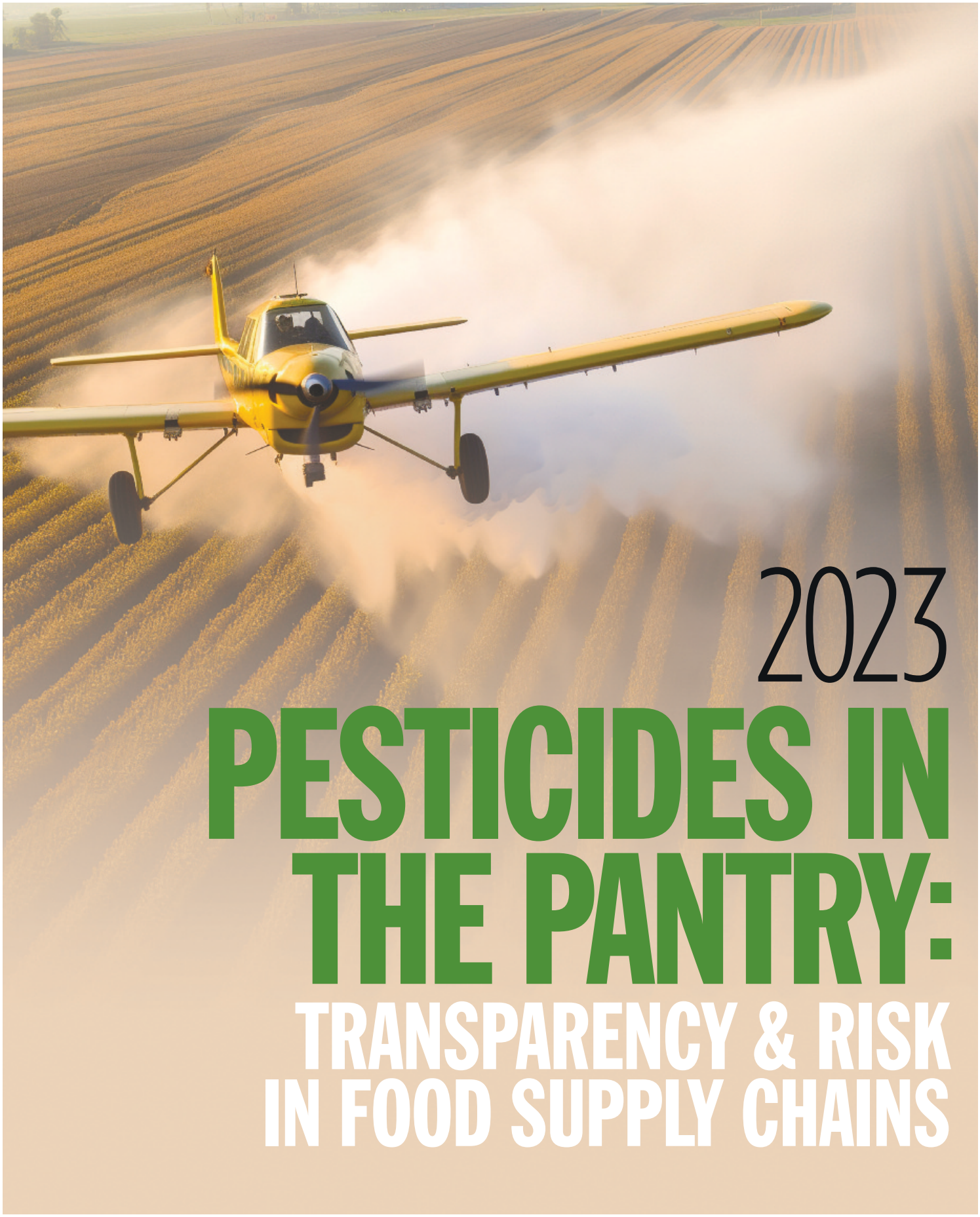

2023

PESTICIDES IN THE PANTRY:

TRANSPARENCY & RISK IN FOOD SUPPLY CHAINS

AS YOU SOW®

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BACKGROUND

The first edition of *Pesticides in the Pantry: Transparency & Risk in Food Supply Chains* was published in 2019 to communicate to investors the need for the food manufacturing industry to manage pesticide-related risk in agricultural supply chains.[1] It was also published to assess major food companies' progress, if any, in addressing the growing problem of pesticide-related risk. In 2021, our second edition of *Pesticides in the Pantry* highlighted food manufacturers' progress, successes, and failures in reducing pesticide-related risk. In this third edition of *Pesticides in the Pantry*, we provide updates on 17 food manufacturers' progress toward achieving past and current pesticide reduction goals. We also communicate to investors changes in the landscape of pesticide-related issues and solutions developed over the past two years.

INTRODUCTION

As discussed below, the United States' pesticide-intensive food production practices generate material risks and adversely impact human health. Over one billion pounds of conventional pesticides[2] are used in the U.S. annually. Globally, farmers are spending nearly $60 billion on pesticides a year,[3] which market researchers expect to increase.

Pesticide Use Impacts

Pesticides and Human Health

In the late 1800s, U.S. farmers struggled to protect their crops against the newly invasive codling moth. Farmers discovered that coating their fruit trees with lead and arsenic[4] effectively prevented the pests from interfering with crop yields. Consumers, however, began experiencing adverse health effects following their exposure to the toxic carcinogens. As agricultural professionals began searching for an alternative to lead and arsenic to maintain their crop yields while minimizing negative health effects, the cycle of pesticide whack-a-mole began.

Farmers replaced the harmful pesticides with an organophosphate, dichloro-diphenyl-trichloroethane (DDT), a chemical deemed safe for public use by the U.S. Food and Drug Administration (FDA).[5] Organophosphates were developed in 1903 by a German chemist[6] and, prior to their use as a pesticide, were used for mass genocide by Nazis. The FDA banned DDT in 1972[7] due to its adverse impacts on biodiversity and human health, but the agricultural industry continues to use a plethora of organophosphates today.

The U.S. agricultural industry has a longstanding history of regrettable substitutions.[8] Over the years, the Environmental Protection Agency (EPA) discontinued 134 pesticides[9] due to their adverse impacts on human health and the environment. Yet, the industry has continued a cycle of replacing de-listed toxic synthetic additives, like DDT, with pesticides that cause similar acute and long-term health effects.

The harm caused by this cycle is real. Scientists at Pesticide Action Network discovered that 385 million individuals experience unintentional, acute pesticide poisoning annually.[10] About 11,000 of those pesticide-poisoning cases resulted in death.[11] Farmworkers have higher pesticide exposure rates and, therefore, have a greater susceptibility to poisoning. Nearly 44% of farmworkers experience pesticide poisoning each year.[12]

Acute respiratory failure is the leading cause of death in patients with acute pesticide poisoning,[13] and organophosphates are the class of pesticides with the highest mortality rate.[14] Individuals can experience any level of pesticide poisoning by mixing, applying, or cleaning up agricultural chemicals. Pesticides may enter the body through the skin, eyes, lungs, and/or mouth, causing acute or chronic health problems, and can be carried home on clothing.[15]

Long-term exposure to pesticides is linked to chronic health effects such as cancer, Parkinson's disease, asthma, anxiety, depression, and attention deficit and hyperactivity disorder.[16] Farmers, farmworkers, fenceline communities, manufacturing facility workers, and consumers are all at risk of developing pesticide-related chronic health problems. Symptomatic individuals and medical professionals often have trouble linking health effects to pesticide exposure because chronic effects may take weeks, months, or years to arise.

Recently, toxicologists and epidemiologists began studying the impacts of pesticide exposure on mental health. One study found agricultural workers using two classes of pesticides were more likely to be diagnosed with depression.[17] Scientists at the Federal University of Pelotas also discovered farmworkers using pesticides in Brazil were more likely to commit suicide.[18] Similarly, the World Health Organization (WHO) revealed individuals in China who stored pesticides in their homes were twice as likely to experience suicidal thoughts.[19] Pesticides' global impacts on mood and brain health directly correlate with the high mortality rate in the agricultural sector.[20]

Scientists at the University of Aveiro have also linked pesticide exposure to adverse reproductive and infantile health effects. Since 1960, the global infertility rate increased by about 27%, which professionals suspect is caused by pesticides' effects on testicular somatic cells.[21] Scientists at the Centers for Disease Control and Prevention have identified correlations between pesticide exposure and birth defects and miscarriages.[22]

Infants and children are more susceptible to pesticide toxicity compared to adults. Because children's internal organs and nervous systems are still developing and maturing,[23] they have fewer natural defenses against pesticides. One of the earliest occurrences of pesticide exposures infants encounter derives from breast milk.[24]

In 2023, excessive pesticide pollution from agriculture makes consumer protection nearly impossible. Rainwater, soil, and drinking water around the world are ridden with toxic carcinogens from the agricultural industry. Scientists at Harvard T.H. Chan School of Public

Health discovered that pesticide biomarkers are present in the blood and urine of over 90% of U.S. residents.[25] Professionals also found high counts of pesticide residue in the bodies of indigenous Arctic individuals who do not use synthetic additives in their food supplies.[26] Volatized pesticides from high-production countries like the U.S. continuously pollute northern regions through the effects of hemisphere sinks, causing global human health effects.

Pesticides and Injustice

The unequal distribution of pesticide-related health effects globally is a symptom of environmental injustice and racism. Throughout history, environmental pollutants have disproportionately impacted Black, Indigenous, and People of Color, as well as low-income communities. One of the most direct cases of injustice relating to pesticide use occurs on agricultural land.

Currently, approximately 96% of private agricultural landowners in the U.S. are white.[27] Few commercial-scale farm owners engage in fieldwork or other agricultural practices in which they would experience pesticide exposure.

In the U.S., 78% of farmworkers are Hispanic.[28] Nearly one-third of farmworkers live in California where the agricultural industry uses 200 million pounds of pesticides annually.[29] Hispanic farmworkers and their families experience higher pesticide exposure rates than white farm owners,[30] which is an important form of environmental racism.

The Canadian Encyclopedia defines environmental racism as "the disproportionate proximity and greater exposure of Indigenous, Black and other racialized communities to polluting industries and environmentally hazardous activities."[31] The disproportionate application of pesticides in dense agricultural regions like California creates unequal environmental and human health threats to marginalized communities. Areas of California with majority Hispanic populations like San Joaquin and Fresno are considered agricultural sacrifice zones because of their pesticide-related toxicity.[32] The government also reinforces environmental injustice and racism in these predominantly Hispanic communities by permitting the use of harmful pesticides like chlorpyrifos, which are banned for commercial use, on agricultural land.

As growers and food companies continue to promote or allow pesticide application in fields, the rate of adverse human health effects on farmworkers and fenceline communities may rise. The low wages provided to farmworkers also limit farmworkers' access to medical care and relief from agrochemical-related symptoms. The National Agriculture Workers Survey found the average hourly pay for U.S. farmworkers is $13.59.[33] Based on a conventional 40-hour week schedule, farmworkers' annual salaries equal $26,093 with no benefits. Low wages and no benefits leave many farmworkers defenseless against the toxic health effects of pesticides in their workplaces.

Some farmworkers are also unaware of the health risks posed by pesticide exposure. Around 62% of agricultural workers in the U.S. are most comfortable speaking Spanish.[34] When agricultural landowners fail to provide bilingual pesticide protection training, they increase farmworkers' risk of pesticide poisoning and other adverse health effects from mishandling, increasing the injustice they experience.

Pesticide-related environmental injustice also occurs in low-income communities with less access to safe and healthy foods. There are over 6,500 food deserts in the U.S.,[35] and most occur in regions with high poverty rates and predominantly Latino and Black residents. Individuals living in food deserts may have a difficult time accessing organic or pesticide-free food within their budgets, increasing their risk of pesticide exposure.

Indigenous communities also experience a greater distribution of pesticide-related health effects compared to white U.S. residents. Non-native individuals control a significant amount of native land in the U.S., and 92% of all agrochemical purchases for reservation cropland operations were conducted by non-natives.[36]

Native community members experience greater rates of pesticide exposure due to their reliance on the land. Hemisphere sinks are also contributing to the unequal distribution of pesticides, which pollute arctic indigenous communities.

When farmers and farmworkers closer to the equator use pesticides, the chemicals may volatilize and resurface in cooler regions through long-range atmospheric transport.[37] One study found 50% of a Baffin Island Inuit diet contains chlordane-related compounds and toxaphene exceeding acceptable daily intake levels.[38]

Another study found DDT in ice core samples of the Jarvis Glacier in Eastern Alaska. As the climate changes and glaciers continuously melt, the risk of DDT's bioconcentration up the food chain increases. Arctic communities regularly consuming fish are at high risk of developing cancer from their organochlorine exposure.[39] Pesticide pollution thus places indigenous individuals' health at risk and jeopardizes the traditional lifestyles of Arctic natives.

Pesticides and Climate Harm

As industrial agricultural practices have increasingly evolved with yield abundance as their primary goal, resilience and ecosystem stability have suffered. Monocropping is a widely used practice that effectively increases the production of specific crops and decreases food scarcity. As with many industrial agricultural practices, monocropping creates unintended environmental effects.

Monocropping is a pesticide-intensive farming practice that lacks diverse plant and animal species that naturally control pests,[40] which increases pest outbreaks. Excessive pesticide use leads to the evolution of pesticide-resistant species,[41] which decreases the efficiency of synthetic inputs and often requires greater volumes of or more toxic pesticides, a cycle that adversely impacts the climate, water, soil quality, ecosystems, farmworkers, and fenceline communities.

Increasing pesticide usage to artificially control agricultural ecosystems, in turn, increases emissions. Nearly 99% of synthetic chemicals used to produce pesticides come from fossil fuels.[42] Fossil fuels account for more than 75% of greenhouse gas (GHG) emissions and are the greatest contributor to climate change.[43]

Pesticides also generate GHG emissions after application. Fumigant pesticides increase nitrous oxide (N2O) development in soil eight times over natural production levels.[44] N2O is 300 times more potent than carbon dioxide,[45] and the EPA lists agriculture as N2O's top emission source.[46]

Pesticide application processes can produce additional GHG emissions by releasing volatile organic compounds (VOCs) and nitrogen oxides (NOx). VOCs produce ground-level ozone in agricultural regions when they interact with ultraviolet (UV) rays and NOx, which is produced from fertilizers[47] and gas-powered farming equipment. Ground-level ozone contributes to climate change by adversely impacting plant and animal species' biodiversity. It also directly affects human health by causing asthma, chronic bronchitis, and emphysema.[48] Individuals often associate fumigant pesticides with VOCs, but scientists studying California's Joaquin Valley found 76% of non-fumigant pesticides also generate VOC emissions.[49]

Some pesticides like sulfuryl fluoride are themselves greenhouse gases. Agricultural workers use the pesticide to fumigate crops during transportation and storage processes. Sulfuryl fluoride is 4,800 times more effective at trapping heat than carbon dioxide.[50]

Consistent pesticide use creates contradictory outcomes for small- and large-scale farming. Pesticides can adversely affect the predators, parasites, and pathogenic organisms that naturally manage pest populations.[51] Farmers must continue purchasing new versions of pesticides or genetically engineered seeds from chemical companies to protect their crops from pesticide-resistant species. Additionally, negative impacts on organisms can cause soil degradation and limit carbon sequestration.

Earthworms, beetles, ground nesting bees, and ants are critical to soil health. Pesticides directly harm soil-dwelling invertebrates that increase soil's ability to sequester carbon dioxide.[52] Pesticides also degrade the fungi and bacteria in soil that contribute to stable forms of soil organic carbon. Limiting the planet's natural carbon management practices increases atmospheric emissions, contributing to climate change.

Maintaining healthy soil quality is also essential to protecting the future of food production. In some regions, conventional pesticide-intensive farming practices have damaged topsoil – the most nutrient-rich layer of soil – which is crucial for food production. Scientists at the University of Massachusetts conducted a study in the U.S. Corn Belt, which extends from Ohio to Nebraska, and discovered 35% of the agricultural land has lost its topsoil completely.[53] It is estimated that topsoil loss costs the Midwest's agricultural industry about three billion dollars annually.[54] Decreasing pesticide use to improve soil health reduces economic, ecological, and climate risks.

Pesticides and Economic Risk

In the short term, pesticides successfully lower costs by decreasing crop losses. Long-term pesticide use, however, can decrease crop yields and increase food costs.

Pesticide-related crop degradation results in an estimated $1.4 billion loss in the U.S. annually.[55] Other costs associated with pesticide use include public health, $1.1 billion year; pesticide resistance in pests, $1.5 billion; bird losses due to pesticides, $2.2 billion; and groundwater contamination, $2.0 billion.[56] The adverse effects of pesticide use on economic and environmental outcomes should cause investors to question the continued use of chemical-intensive agriculture.

Rising soil temperatures associated with climate change increase the volatilization and degradation of pesticides,[57] which decreases their effectiveness. As temperatures continue rising and precipitation patterns change, farmworkers must apply more pesticides to maintain consistent crop yields. U.S. farmers spend about $15 billion on pesticides every year.[58] In 1985, farmers spent an inflation-adjacent $3.9 billion on pesticides, demonstrating the increase in pesticide-related spending as climate change effects worsen.

Climate change's impacts on pests also increase the financial burden of pesticide use on farmers. Scientists at University of Zagreb predict that rising temperatures will accelerate pests' metabolisms,[59] leading them to increase their consumption of crops. Heat and alternate precipitation patterns also adversely impact crops' pest resilience, which is likely to lead farmers to spend significantly more on synthetic additives annually.

Pesticides cause negative impacts on the financial sector by depleting pollinator populations. Pesticides, particularly neonicotinoids, are one of the top three causes of pollinator population decline globally.[60] About $34 billion of the U.S. economy depends on pollinators, and insect-derived pollination contributes to over 75% of the global food supply.[61]

Consumers are becoming increasingly aware of the negative impact pesticides have on biodiversity and human health. Researchers found that 81% of U.S. residents want pesticide-free food.[62] Manufacturers' continuous use of pesticides throughout supply chains presents a material risk relating to consumer loyalty.

While many growers are aware of the adverse effects of pesticide use, it has proven difficult for most growers to get off the pesticide "treadmill" where pesticide use leads to adverse results and greater dependence on pesticides.[63] One example of this is the introduction of genetically engineered seeds in combination with glyphosate use for weed control. Glyphosate was initially lauded as environmentally benign compared with alternative herbicides. However, its widespread use combined with "Roundup Ready" varieties of maize, oilseed rape, and soybean, along with reduced tillage, led to the proliferation of herbicide-resistant super weeds and a consequent industry movement toward even more toxic pesticides to control the nearly 60 million acres of impacted agricultural land.[64]

There are many other factors that prevent growers from decreasing reliance on synthetic inputs.[65] Such factors range from competition with other growers using pesticides; to investments in equipment geared toward large-scale, pesticide-reliant farming; advertising and promotion of chemicals; the discounted value of declining yields and higher future costs; and lack of knowledge about and acceptance of more sustainable farming methods, among others. Despite these challenges, adoption of more sustainable farming practices like regenerative agriculture and integrated pest management are increasingly being adopted and can eliminate growers' reliance on pesticides while protecting their yields and long-term profit from pest interference.

Growing Consumer and Investor Concerns

The rise of environmental, social, and governance (ESG) concerns is influencing investment decisions and behaviors. In 2021, $649 billion globally went into ESG-focused funds.[66] Individuals continue to prioritize environmental and human health protection in their investments as an economic risk reduction strategy. Food manufacturers began responding to investors' ESG concerns by adding elements of sustainability throughout their supply chains. Many companies have developed strategies to prevent deforestation, reduce GHG emissions, and minimize water and energy usage.

Until recently, though, pesticide reduction has been nearly absent from company sustainability policies and reporting to investors. This oversight opens significant avenues for liability and regulatory risk. It is also inconsistent with consumer trends. Nearly 89% of individuals believe it should be easier to ban harmful chemicals and protect vulnerable populations from pollution.[67] About 93% agree it is important to remove toxic chemicals from products and communities.[68] Reflecting these trends, organic and pesticide-free food sales reached $132.7 billion in 2021.[69]

To minimize the long-term financial risk associated with pesticide use, while also supporting changing consumer concerns, food suppliers and manufacturers must increase transparency around pesticide use in food supply chains and support pesticide reduction practices to minimize shareholder and stakeholder risks.

Pesticide Reduction and Elimination Practices

Leading food manufacturers are beginning to address pesticide risk by adopting organic standards, integrated pest management, and regenerative agriculture practices. In the previous versions of this report, we referred to pesticide reduction and elimination practices as "sustainable solutions." After evaluating recent trends within food manufacturers' ESG and Corporate Responsibility reports, we decided to eliminate references to "sustainable" practices, especially when used as a goal, as the term does not clearly convey what standards are expected of suppliers and producers, what goals are sought, and whether progress is being achieved and measured. We are hopeful that assessing the individual factors of sustainability, rather than accepting a catchall phrase, may influence stronger transparency and action standards among food manufacturers and minimize greenwashing.[70]

Organic

Certified organic farming is a well-established and successful system for growing food without the use of most synthetic pesticides. Organic foods are certified through a robust set of standards under the federal USDA National Organic Program. The USDA permits the use of natural substances and prohibits use of most synthetic substances, including over 900 pesticides otherwise allowed in agriculture.[71]

The program ensures that the natural substances allowed in organic farming are safe for consumers and the ecosystem. For example, arsenic and strychnine are natural substances that the USDA has banned from organic farming.[72] The program also prohibits the use of synthetic fertilizers, genetically modified organisms (GMO), and antibiotics in livestock.

Instead of relying on synthetic inputs, organic farmers support ecological practices by rotating crops, increasing crop diversity, fostering natural predators of pests, and building soil health to improve plant immunity and prevent pest-related disturbances. Organic farms also protect farmworkers' physical and mental health by minimizing their pesticide exposure. Food manufacturing companies can invest in environmental and human health protection by choosing to source organic ingredients and supporting farmers in their adoption of pesticide-reduction practices along the way to organic certification.

Integrated Pest Management

Integrated Pest Management (IPM) is a system that minimizes pesticide use and risk by regularly inspecting and monitoring crops to correct conditions leading to pest interference. The EPA currently offers a vague description of IPM, which reads:

"Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment."[73]

Others define IPM simply as a cost-effective means of controlling pests, and some define it as a farming technique that implements cultural, biological, and physical strategies to eliminate or suppress pest populations and only utilize chemical controls as a last resort. More robust descriptions leave less room for interpretation and focus on reducing pesticide use and risk. When food manufacturing companies require suppliers to implement IPM programs as a means of reducing pesticide risks, establishing clear goals, standards, and metrics is essential.

Regenerative Agriculture

Regenerative agriculture has been broadly described as a holistic farming approach that prioritizes soil health and biodiversity protection to achieve climate resilience, water conservation, and carbon sequestration and to sustain ecosystems. It is important to understand that, like "sustainable," some definitions of regenerative agriculture are robust while others are weak. Ecologically regenerative agriculture should reduce farmers' reliance on synthetic inputs and improve ecological, social, economic, and human health outcomes, including long-term food security.

Like organic farming, regenerative agriculture supports natural crop production patterns rather than relying on synthetic inputs. Regenerative agriculture is a traditional farming practice utilizing techniques originating from Native Americans.[74] Features of regenerative farming include planting cover crops, minimizing or avoiding soil tillage, integrating livestock, and diversifying crops.

To achieve soil and yield benefits from regenerative agriculture, farmers must eliminate or significantly reduce their reliance on synthetic pesticides. The pesticide reduction component reduces harm to soil organisms and helps prevent topsoil loss and degradation. Regenerative practices also increase a plant's ability to sequester carbon and other equivalent emissions. By improving soil health through regenerative agriculture, farmers can both decrease harmful emissions and increase crop resiliency in a changing climate.

Given the lack of standards and variations in regenerative practices, it is critical that any company investing in such practices clearly define and disclose which strategies will be adopted, including explicitly stating whether pesticides will be reduced or eliminated and how success will be measured. It is also important to note that regenerative agriculture practices are place-based. Agricultural community-wide collaboration can help farmers in similar climates develop successful regenerative agriculture adoption strategies.

Conclusion

Companies can mitigate long-term financial and ecological risks by requiring their suppliers to adopt one or more of the pesticide reduction and elimination practices listed above. Growing investor concern around the risks of declining crop production efficiencies, especially in the face of climate change, litigation related to health and environmental damages, changing consumer demands for clean and healthy foods, and reputational loss leave food manufacturers no choice but to reevaluate their pesticide policies.

Shareholders recognize there are many ways to successfully approach the problems associated with pesticide-dependent farming methods. A clear set of disclosures on actions taken and successes achieved will assist shareholders in understanding how well these important issues are being managed by food companies.

SCORECARD

Overview

This report benchmarks major food manufacturers on their adoption of practices to measure and mitigate risks related to the use of synthetic pesticides in agricultural supply chains. In scoring a set of questions related to pesticide-related company strategies and disclosure, the report provides a picture of the industry's overall performance, distinguishes leaders from laggards, and provides examples of notable practices. These benchmarks provide a pathway for assessing company performance to support investors in advocating for long-term value.

For this report, 17 major food companies were scored on a total of 27 indicators. Scores are based on a thorough review of publicly available information, including companies' published reports, press statements, and website text. In the case of international companies, U.S.-specific information was used where available; if the company did not clearly differentiate between U.S. and global policies, the latter were reported.

This year, companies are starting to differentiate themselves by publicly identifying their pesticide reduction commitments and practices, or lack thereof. Some companies' disclosures on pesticide use management have improved over the past two years while, overall, scores declined due to increased specificity of the key performance indicators.

Methods

The following 17 companies are included in this review (listed alphabetically): Archer Daniels Midland (ADM), Bloch & Guggenheimer (B&G) Foods Inc., Campbell Soup Company, Cargill, Conagra Brands Inc., Danone S. A., Del Monte Pacific Limited Foods Inc., General Mills Inc., Kellanova, The Kraft Heinz Company, Lamb Weston Holdings Inc., Mars Incorporated, Mondelēz International Inc., Nestlé, PepsiCo Inc., Post Holdings, Inc., and The J. M. Smucker Company.

Each company was given the opportunity to review the information compiled in this report and provide additional information or clarification.

Questions were written to elicit key information about supply chain pesticide use. Questions focus on transparency around pesticides, whether companies have conducted assessments to understand the risks associated with use of pesticides in their supply chain, and whether companies have adopted strategies or policies to reduce the use of pesticides in their supply chain. This deliberate recognition of pesticide use as an issue to be addressed is a critical first step on a company's path toward identifying solutions.

Company	Score	Letter Grade
General Mills Inc.	10	C
ADM	9	C-
PepsiCo Inc.	9	C-
Conagra Brands Inc.	8	D
Campbell Soup Company	7	D
Lamb Weston Holdings Inc.	6	D-
Nestlé	6	D-
Mondelēz International Inc.	5	F
Del Monte Foods Inc.	4	F
Cargill	3	F
Danone S. A.	3	F
The Kraft Heinz Company	2	F
Post Holdings Inc.	2	F
B&G Foods	1	F
Kellanova	1	F
Mars Incorporated	1	F
The J. M. Smucker Company	0	F

In this edition of the report, we added a section labeled "Tracking and Monitoring Pesticide Use" to understand whether food manufacturers have developed data collection procedures related to suppliers' pesticide use and impacts. It is impossible to assess a food manufacturer's pesticide impact without obtaining information from suppliers.

To eliminate the potential for greenwashing and to increase transparency related to specific metrics, we removed the previous scorecard's "Holistic Sustainable Sourcing Policy" section. The vast majority of companies' sustainable sourcing policies do not mention pesticide use or provide pesticide reduction guidelines and so were not helpful in assessing pesticide reduction practices. Instead, we have given more weight to the adoption of programs that may reduce synthetic pesticide use, including regenerative agriculture and/or IPM policies.

Companies can now earn more points for programs that clearly and publicly delineate the elements of such program(s) and provide metrics by which associated progress on pesticide reduction is measured. Other important components include whether companies require growers to participate in such programs or have otherwise set supplier targets for action or increased transparency.

The final section of the 2023 scorecard evaluates companies' farmworker health and safety practices and policies. Farmworkers and fenceline communities experience some of the highest pesticide exposure rates. To mitigate harm and risk around such exposures, food manufacturers' pesticide reduction policies should take into account grower actions to mitigate the direct impacts pesticide use has on these individuals. This section of the report scores companies on their worker protection practices, if any, to minimize adverse health effects and the environmental injustices associated with pesticide exposures.

RESULTS

Question	ADM	B&G Foods	Campbell's	Cargill	Conagra	Danone	Del Monte	General Mills	J. M. Smucker	Kellanova	Kraft Heinz	Lamb Weston	Mars	Mondelez International	Nestlé	PepsiCo	Post Holdings
Pesticide Risk Reduction Strategy																	
1. Has the company publicly stated a goal to reduce the use of pesticides in its key agricultural supply chains?	●				●		●	●				●		●			●
2. Has the company adopted chemical pesticide reduction practices in its key agricultural supply chains?	●				●	●		●						●	●		
3. Has the company conducted a pesticide risk assessment across its supply chains that includes human health?	●	●															
Pesticide Data and Policy Transparency																	
4. Has the company publicly stated a policy for reducing pesticide use?																	
5. Does the company publicly report its progress toward its pesticide risk reduction goal?			●		●		●										
6. Does the company publicly disclose pesticide use data (including trends or changes)?								●				●					
Tracking and Monitoring Pesticide Use																	
7. Does the company collect or monitor pesticide use data from its agricultural supply chain?																	
8. Is the company's suppliers' pesticide use data audited by a third party?												●				●	
9. Does the company state a public commitment to begin or continue collecting pesticide use data in its supply chains within the next year?	●															●	●
10. Does the company publicly disclose its success in reducing pesticide use or risk?			●				●	●				●		●			
Company Policy on Pesticides of High Concern																	
11. Does the company have and disclose a supplier standard regarding the use of glyphosate-based herbicides?	●																
12. Does the company have a supplier standard that reduces the use of neonicotinoids?																	
13. Do the company's suppliers utilize drift-reduction agents if using dicamba?																	
14. Does the company have a sustainable agriculture policy/program that includes reducing pesticide use?	●		●		●			●				●		●	●	●	
15. Does the company disclose data to demonstrate supplier performance and progress improving sustainability metrics?	●		●		●	●	●	●		●	●	●	●	●	●	●	
Integrated Pest Management																	
16. Does the company promote or require all non-de minimis suppliers to adopt IPM practices that significantly reduce or eliminate pesticide use?			●													●	
17. Do the company's practices align with the IPM Institute's guidelines including utilizing pesticides as a last resort after implementation of a range of alternative pest control measures along with monitoring and record-keeping?																	
18. Does the company work with a third party such as the IPM Institute to verify its IPM program?								●								●	
19. Does the company publicly disclose data to demonstrate suppliers' performance and compliance with IPM guidelines?	●		●													●	
20. Does the company publicly disclose progress in improved water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers using IPM?																	
Regenerative Agriculture																	
21. Does the company promote or require all non-de minimis suppliers to adopt regenerative agriculture practices?				●				●			●				●	●	
22. Does the company define regenerative agriculture in a way that includes pesticide-reduction goals?					●			●							●		
23. Does the company publicly disclose supplier data on regenerative agriculture in its supply chains?			●	●											●	●	
24. Does the company disclose which crops and how many acres use regenerative agriculture practices?	●			●	●	●		●									
25. Does the company publicly disclose progress in improved water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers using regenerative agriculture?					●												
Farmworker Health and Safety																	
26. Does the company ensure suppliers train farmworkers in safe pesticide application practices, including e.g. farmworkers are trained in their native languages to understand pesticide risk?																	
27. Does the company require suppliers to inform adjacent communities when spraying pesticides that contaminate the air, groundwater, and surface water?																	
TOTALS	**9**	**1**	**7**	**3**	**8**	**3**	**4**	**10**	**0**	**1**	**2**	**6**	**1**	**5**	**6**	**9**	**2**

Key findings

The average company score is 4.5 points.

While some companies developed and expanded eco-conscious farming practices that prioritize pesticide reduction, the majority of companies failed to take the necessary steps toward pesticide use transparency, disclosure, and risk mitigation. Two of the leaders from the 2019 and 2021 reports continued improving their pesticide reduction practices while many laggards have still yet to begin tackling pesticide risk. The average grade in 2021 was a D, which dropped to an F in 2023. Overall scores decreased as many companies failed to meet the growing demand for safe and environmentally protective food.

Four companies earned more points in 2023 than in 2021.

ADM jumped up the grade scale this year from an F in 2021 to a C- in 2023. In the last report, ADM only earned points in the "Holistic Sustainable Sourcing Policy" and "Regenerative Agriculture" sections. This year, the company scored only one point below General Mills – the report's leader. ADM also earned the highest number of points in the "Pesticide Risk Reduction Strategy" and "Company Policy on Pesticides of High Concern" sections.

Additionally, Conagra significantly improved its pesticide risk reduction strategies from 2021 to 2023. The company publicly stated a goal to reduce its pesticide use across its agricultural supply chain, resulting in a reduction of 112,500 gallons of soil fumigants used on its fields since 2021. Conagra also now requires its broccoli and cauliflower suppliers to reduce the volume of pesticides used by 5% annually. Even as the average company grade of the scorecard dropped, Conagra earned 8 points this year, increasing its score by a resounding 6 points since 2019. The company has shown a positive change in the way it does business by increasing transparency, educating suppliers, and prioritizing the longevity of abundant and sustainable crop production.

Post Holdings' score also increased by two points in 2023 for publicly stating a goal to reduce pesticide use across its key agricultural supply chains and committing to begin or continue collecting pesticide use data in its supply chains within the next year. Similarly, B&G Foods' grade improved by one point from 2021 to 2023 as the company began working with the IPM Institute to conduct a pesticide risk assessment across its supply chain. While the company's ability to assess pesticide risk is notable, B&G Foods is not transparent with the information acquired through the assessment.

ADM leads the way in pesticide risk reduction.

ADM earned the highest score in the "Pesticide Risk Reduction Strategy" Section. The company publicly stated a goal to reduce the usage of chemical pesticides in the key agricultural supply chains by 2023. ADM also adopted chemical pesticide reduction practices, like IPM and cover cropping, in its supply chain. The company conducted a pesticide risk assessment across its supply chain through the SAI Platform that measures its reduction of chemical loading and adverse impact on people and the environment.

Campbell's also conducts pesticide risk assessments on three crops across its supply chains – tomatoes, potatoes, and wheat. The company uses the information provided through the assessment to build programs to reduce major risk. Campbell's also partnered with the IPM Institute to analyze four years of pesticide data across its tomato supply chain. The company did not score for this question because its assessments do not measure pesticide risk across its entire supply chain.

Both Conagra and General Mills earned the second highest scores in the "Pesticide Risk Reduction Strategy" section. Each of the companies has publicly stated goals to reduce pesticide use across its supply chains. Additionally, each company has adopted, maintained, or improved pesticide-reduction practices.

Five companies earned points for their pesticide data transparency.

Notably, Conagra began reporting its progress toward its pesticide risk reduction goal since the 2021 report. General Mills also improved its transparency this year by publicly disclosing pesticide use data for specific crops. The company now states, on its Environmental Impact webpage, the amount of pesticides its suppliers use while growing oats, wheat, corn, and soybeans.

Lamb Weston also received credit for publicly disclosing pesticide use data. The company mentions in its ESG report that its reliance on active ingredient pesticides decreased from 4.8 pounds per ton of crops harvested in 2021 to 3.4 pounds in 2022. Campbell's, Del Monte Pacific Limited, and B&G Foods also received credit for pesticide data transparency.

Lamb Weston and PepsiCo audit their suppliers' pesticide use through the USDA's third-party GAP program.

Lamb Weston uses the USDA's Good Agricultural Practice (GAP) program to audit its fruit and vegetable pesticide use data, ensuring valid data quality. Lamb Weston started engaging in third-party audits after the 2021 report. The company now requires all its growers to complete a GAP audit annually.

PepsiCo continued using third-party audits to track and monitor pesticide use for its U.S. and Canadian potato farms. Like Lamb Weston, the company requires growers to complete GAP audits annually to ensure detailed inspections of pesticide use on farms.

Both companies also earned the highest scores in the "Tracking and Monitoring Pesticide Use" section of the scorecard. Lamb Weston was one of five companies to acquire points in the section for publicly disclosing its success in reducing pesticide use from 4.8 pounds of active ingredient (AI) pesticides per ton of crops harvested in 2021 to 3.4 in 2022.

None of the companies collects or monitors pesticide use data across agricultural supply chains.

Campbell's collects grower data on pesticide use and monitors risks in its tomato, potato, and wheat supply chains. We would like to note that the company does identify these three crops as its priority ingredients. The company did not receive a point for this question because to earn credit, companies must collect and monitor pesticide use data for all material supply chains. Campbell's also fails to discuss the extent of its monitoring practices.

We would also like to acknowledge that Post Holdings expanded its pesticide monitoring and transparency efforts this year. The company mentions on its Pesticide Management page that it has strict protocols for pesticide usage, including tracking and recording pesticide usage by volume and type on its owned potato farms. The company did not earn a point for question 3.1 on the Scorecard because its pesticide tracking and monitoring practices do not apply to all non-*de minimis* suppliers.

ADM is the only company that discloses a supplier standard on glyphosate – a pesticide of high concern.

ADM prohibits supplier use of glyphosate as a pre-harvest desiccant. In 2021, the only company to earn a point for this key performance indicator was Kellogg. However, Kellanova, the company formally known as Kellogg, did not receive a point this year because it abolished its commitment to phase out glyphosate as a pre-harvest desiccant.

Although Mondelēz does not disclose a supplier standard for reducing or avoiding glyphosate and neonicotinoids, its voluntary Harmony Ambition 2030 regenerative agriculture program for wheat does state an "aim to eliminate the most damaging pesticides, including glyphosate and neonicotinoids." If the company expands the program, applying its pesticide-reduction goal to all material suppliers, it would have a positive impact on conservation and regeneration.

PepsiCo leads the way in developing and maintaining an IPM program that reduces pesticide use.

PepsiCo has the most defined IPM program for achieving pesticide reduction. Some notable features of its program are

- supply-chain-wide expectations to minimize agrochemical applications and support safe, legal, and responsible pesticide use;
- direct farmer engagement; and
- third-party verification of practices.

PepsiCo has improved both the IPM metrics and transparency relating to its IPM program since the 2021 report. This year, the company earned the highest grade for the IPM section.

Nestlé recently established a robust regenerative agriculture program that sets pesticide reduction targets and outlines strategies for achievement.

Nestlé, General Mills, Cargill, and Conagra received the highest grades in the "Regenerative Agriculture" section.

In 2022, Nestlé disclosed a program in which it works closely with over 500,000 farmers to promote regenerative agriculture practices designed to continuously reduce the use of synthetic herbicides and pesticides. Nestlé also supports communication between farmers globally to increase their ability to adopt regenerative agriculture practices in different climates and conditions. Additionally, Conagra works with tomato growers across its supply chain to increase cover crop adoption, which can further reduce the need for pesticides and herbicides and improve overall soil health, and the company has adopted conservation tillage or no-tillage practices on nearly 30,250 acres of cornfields.

Of significant note, Conagra is the only company to publicly disclose the progress of its regenerative agriculture program in improved water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers.

Six companies have publicly stated pesticide reduction goals in their key agricultural supply chains.

ADM, Conagra, General Mills, Lamb Weston, Mondelēz, and Post Holdings received a point for this question. This question differs from 4.4 on the scorecard, which reads, "Does the company have an agriculture policy/program that includes reducing pesticide use?" Question 4.4 solely addresses whether a company has any policy or program that results in or includes guidelines that require pesticide reduction. It does not signify a quantitative goal and does not address a key supply chain.

While companies earning a point for 4.4 may not have a pesticide reduction goal that applies to their key supply chains, it is important to note the pesticide reduction functions of their established policies and programs. Some programs that result in or require pesticide reduction practices are regenerative agriculture and IPM.

Twelve out of 17 companies' scores decreased.

Company scores significantly decreased from 2021 to 2023 due to the scorecard's increased focus on metrics reporting. Kellanova lost ground as we increased the rigor of our scorecard questions to reflect industry trends and movement toward pesticide reduction practices, such as the adoption of regenerative agriculture. The company previously earned two points on the 2021 scorecard for its supplier standards regarding glyphosate-based herbicides and reducing glyphosate use as a desiccant. This year, we were unable to locate supplier standards on glyphosate use that applied to all the company's non-*de minimis* suppliers.

Additionally, in 2022 Kellanova announced a $2 million investment project to advance climate-positive agriculture including regenerative practices. The scorecard provides points for regenerative agriculture programs that directly impact a company's suppliers. Some companies partner with outside organizations to fund the expansion of regenerative agriculture practices that do not impact their direct supply chains. Kellanova did not receive points in the "Regenerative Agriculture" section of the 2023 scorecard because we were unable to find evidence of the company promoting or instituting regenerative agriculture practices across its supply chain.

None of the companies has supplier standards that reduce the use of neonicotinoids or utilize drift-reduction agents if using dicamba.

This year, we continued to score companies on whether they have supplier standards that focus on the most dangerous chemicals to environmental and human health. A question regarding dicamba was added to the scorecard to eliminate a regrettable solution. Chemical companies now sell products containing dicamba, a highly volatile herbicide, to address the latest weed resistance problem for their glyphosate-tolerant GMO "Roundup Ready" crops.

The food industry appears to be stagnating with regard to developing company policies that would, at a minimum, address pesticides of high concern. Neonicotinoids are a group of insecticides that cause serious adverse health effects for farmworkers and fenceline communities, especially children. The insecticides also deplete pollinator populations that are essential to aspects of agricultural production. Nearly $35 billion of the U.S. economy depends on pollinators, and without sufficient neonicotinoid reduction standards, companies will fail to maintain abundant crop yields over time.

Companies also failed to create supplier standards that protect farmworkers and fenceline communities from exposure to dicamba drift. The National Wildlife Federation (NWF) found that since the EPA approved dicamba products to treat GMO soybeans and cotton in 2016, the Midwest and South have experienced thousands of pesticide injury complaints.[75] The NWF also discovered that pesticide-related injuries occurred thousands of feet from treated crop fields.[76] Companies may develop supplier standards to mitigate pesticide-related risks to protect farmworkers and fenceline communities.

Companies are not prioritizing farmworkers' health and safety.

None of the 17 companies in the Scorecard, even companies with robust DEI programs like General Mills and PepsiCo, have publicly stated policies or standards that protect farmworkers or fenceline communities from the adverse health effects of pesticide use and drift. As noted above, approximately 78% of farmworkers in the U.S. are Hispanic and are more likely to experience pesticide poisoning than white farm owners. This creates the risk that companies may be called out for environmental racism, in addition to increasing the risk of litigation or other reputational risks associated with exposing farmworkers and fenceline communities to harmful chemicals.

Companies can reduce risk and protect human health by developing strategies to ensure the protection of farmworkers across their supply chains. At a minimum, companies should train farmworkers in their native languages to better understand the potential human health risks associated with pesticides and how to reduce such exposure. Additionally, companies can reduce risk by informing fenceline communities when spraying pesticides, so they can take necessary precautions to protect themselves. Many companies may be undertaking such work, but none discloses such actions.

Results by Issue & Question

Pesticide Risk Reduction Strategy

1. 6 companies have publicly stated a goal to reduce the use of pesticides in their key agricultural supply chains: ADM, Conagra, General Mills, Lamb Weston, Mondelēz, and Post Holdings.
2. 7 companies have adopted chemical pesticide reduction practices in their key agricultural supply chains: ADM, Conagra, Danone, Del Monte Pacific Limited, General Mills, Mondelēz, and Nestlé.

2 companies conducted a pesticide risk assessment across their supply chains that relates to human health: ADM and B&G Foods Pesticide Data Transparency.

1. 0 companies publicly stated a policy for reducing pesticide use.
2. 3 companies publicly report their progress toward their pesticide reduction goals: Campbell's, Conagra, and Del Monte Pacific Limited.
3. 2 companies publicly disclose pesticide use data (including trends or changes): General Mills and Lamb Weston.

Tracking and Monitoring Pesticide Use

1. 0 companies publicly report pesticide use data from their agricultural supply chains.
2. 2 companies' suppliers pesticide use data are audited by a third party: Lamb Weston and PepsiCo.
3. 3 companies publicly committed to begin or continue collecting pesticide use data in their supply chains within the next year: ADM, PepsiCo, and Post Holdings.
4. 5 companies publicly disclose their success in reducing pesticide use or risk: Campbell's, Del Monte Pacific Limited, General Mills, Lamb Weston, and Mondelēz.

Company Policy on Pesticides of High Concern

1. 1 company has and discloses a supplier standard regarding the use of glyphosate-based herbicides: ADM.
2. 0 companies report supplier standards that reduce the use of neonicotinoids.
3. 0 companies report that suppliers utilize drift-reduction agents if using dicamba.
4. 8 companies have agriculture policies/programs that include reducing pesticide use: ADM, Campbell's, Conagra, General Mills, Lamb Weston, Mondelēz, Nestlé, and PepsiCo.
5. 13 companies disclose data to demonstrate suppliers' performances and progress improving sustainability metrics: ADM, Campbell's, Conagra, Danone, Del Monte Pacific Limited, General Mills, Kellanova, Kraft Heinz, Lamb Weston, Mars, Mondelēz, Nestlé, and PepsiCo.

Integrated Pest Management

1. 2 companies promote or require all their non-*de minimis* suppliers to adopt IPM practices that significantly reduce or eliminate pesticide use: Campbell's and PepsiCo.
2. 0 companies report whether their practices align with the IPM Institute's guidelines including utilizing pesticides as a last resort after implementation of a range of alternative pest control measures along with monitoring and record-keeping.
3. 2 companies work with an authoritative third party, such as the IPM Institute, to design, monitor, or verify their IPM programs: General Mills and PepsiCo.
4. 3 companies publicly disclose data to demonstrate suppliers' performance and compliance with IPM guidelines: ADM, Campbell's, and PepsiCo.
5. 0 companies disclose what progress, if any, they have made in improving water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers using IPM practices.

Regenerative Agriculture

1. 5 companies promote or require all non-*de minimis* suppliers to adopt regenerative agriculture practices: Cargill, General Mills, Kraft Heinz, Nestlé, and PepsiCo.
2. 3 companies define regenerative agriculture in a way that includes pesticide reduction goals: Conagra, General Mills, and Nestlé.
3. 4 companies publicly disclose suppliers' data on regenerative agriculture in their supply chains: Campbell's, Cargill, Nestlé and PepsiCo.
4. 5 companies disclose which crops and how many acres use regenerative agriculture practices: ADM, Cargill, Conagra, Danone, and General Mills.
5. 1 company discloses progress in improved water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers using regenerative agriculture practices: Conagra.

Farmworker Health and Safety

1. 0 companies require suppliers to train farmworkers in safe pesticide application practices, including, e.g., farmworkers are being trained in their native languages to understand pesticide risk.
2. 0 companies require suppliers to inform adjacent communities when spraying pesticides that contaminate the air, groundwater, and surface water.

RECOMMENDATIONS

Investors

Investors are increasingly moving corporations to promote sustainable business practices that address impacts across a broader range of stakeholders to reduce risk and retain value. In the case of pesticides, investors can encourage food companies to invest in robust strategies to reduce the use of chemical pesticides in agricultural supply chains to increase resiliency, reduce community and worker harm, increase biodiversity, improve ecosystem services, reduce GHG emissions, and improve reputation with customers, thereby increasing company value. The benchmarks outlined in this report can assist investors in evaluating the degree to which companies are moving to proactively reduce pesticide-related risks in their agricultural supply chains.

Food Manufacturers

Major food manufacturers can increase their success by responding to the rapidly changing business environment in which they are valued not only for financial returns, but also how they impact communities, consumers, workers, and the environment. In addition to stakeholder concerns, food companies are beginning to feel the full brunt of climate change, resource restraints, and fallout from decades of pesticide-reliant growing practices, making resiliency and innovation key factors of success. Those companies that assess the full range of risks related to pesticide use in supply chains and take meaningful steps to reduce them will drive value. Actions should include the following:

1. Publicly commit to reducing pesticide use in agricultural supply chains.
2. Outline strategies for pesticide use reduction, including targets, timelines, and metrics for measuring progress year-over-year.
    a. If these strategies include IPM, regenerative agriculture, or other common terms, it is particularly important to establish clear definitions that include pesticide reduction and outline specific supplier goals, or requirements, to both measure and demonstrate progress.
    b. Eliminate pesticides of high concern, like glyphosate, neonicotinoids, dicamba, and organophosphates, first.
3. Develop incentives to help farmers transition away from pesticide-intensive agricultural practices toward organic, regenerative, or IPM farming.
4. Publicly disclose progress toward pesticide reduction goals.

In addition to these methods, companies can use their membership in industry sustainability collaboratives to advocate that technical assistance providers establish methods for tracking and reporting pesticide use. By working in partnership with academics, non-governmental organizations, and other industry members, companies can help develop solutions to the current challenges in reducing supply chain pesticide use and impact.

Companies can also have a significant impact on policy. We encourage companies to report lobbying activity that affects communities and the environment, including participation in trade groups that oppose laws or regulations that would improve health and environmental conditions on farms or in nearby communities. To promote changes in the food system that will benefit all stakeholders and create a level playing field, companies can affirmatively support policy changes that promote transparency, improve regulation of toxic chemicals, and bolster efforts to shift supply chains to regenerative practices.

Policy

Policymakers are charged with ensuring that regulatory decisions are made with public health as the first priority. As such, adopting a precautionary stance will drive beneficial change, sustainability, and economic success, especially in the regulatory arena. Policymakers should support and require sourcing of studies on health and environmental impacts, including studies beyond those offered by applicants when considering approval or continued use of pesticides. New agrochemicals are constantly being produced and introduced to the market, making it difficult for regulators to fully assess impact, including long-term effects. In such situations, the precautionary principle provides a sound approach to risk management. Utilized by other developed nations, this principle states that in the case of uncertain outcomes, it is important to protect against negative risks. In doing so, regulators would consider a new chemical potentially harmful until scientists have proven its safety.

Moving beyond pesticide regulation, policymakers have opportunities to reshape our agricultural system to promote agricultural resilience (i.e., resilient soils, resilient ecosystems, resilient communities, and resilient economies). Reshaping incentives to underscore these outcomes and creating laws to prohibit externalities in agriculture will drive economic value and help ensure agricultural resiliency.

Consumers

Consumers have the power to "vote with their dollars." They can support pesticide-free and ecologically beneficial goods and the brands that support transparency in food production and pesticide-free ingredient sourcing. Consumers can also influence positive change in the industry by presenting their comments and concerns about companies' pesticide use on food manufacturers' websites in customer service and feedback boxes. Moreover, customers can support policymakers that drive strong consumer-oriented and ecologically sound legislation.

APPENDIX A (Scorecard Survey Questions)

Pesticide Risk Reduction Strategy

1. Has the company publicly stated a goal to reduce the use of pesticides in its key agricultural supply chains?
2. Has the company adopted chemical pesticide reduction practices in its key agricultural supply chains?
3. Has the company conducted a pesticide risk assessment across its supply chains that relates to human health?

Pesticide Data and Policy Transparency

4. Has the company publicly stated a policy for reducing pesticide use?
5. Does the company publicly report its progress towards its pesticide reduction goal?
6. Does the company publicly disclose pesticide use data (including trends or changes)?

Tracking and Monitoring Pesticide Use

7. Does the company collect or monitor pesticide use data from its agricultural supply chains?
8. Is the company's supplier's pesticide use data audited by a third party?
9. Does the company state a public commitment to begin or continue collecting pesticide use data in its supply chains within the next year?
10. Does the company publicly disclose its success in reducing pesticide use or risk?

Company Policy on Pesticides of High Concern

11. Does the company have and disclose a supplier standard regarding the use of glyphosate-based herbicides?
12. Does the company have a supplier standard that reduces the use of neonicotinoids?
13. Do the company's suppliers utilize drift-reduction agents if using dicamba?
14. Does the company have a sustainable agriculture policy/program that includes reducing pesticide use?
15. Does the company disclose data to demonstrate supplier performance and progress improving sustainability metrics?

Integrated Pest Management

16. Does the company promote or require all non-*de minimis* suppliers to adopt IPM practices that significantly reduce or eliminate pesticide use?
17. Do the company's practices align with the IPM Institute's guidelines including biological controls, cultural controls, soil preparation, monitoring, and recordkeeping?
18. Does the company work with an authoritative third party such as the IPM Institute to design, monitor, and verify its IPM program?

19. Does the company publicly disclose data to demonstrate suppliers' performance and compliance with IPM guidelines?
20. Does the company disclose progress in improved water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers using IPM?

Regenerative Agriculture

21. Does the company promote or require all non-*de minimis* suppliers to adopt regenerative agriculture practices?
22. Does the company define regenerative agriculture in a way that includes pesticide-reduction goals?
23. Does the company publicly disclose supplier data on regenerative agriculture in its supply chains?
24. Does the company disclose which crops and how many acres use regenerative agriculture practices?
25. Does the company disclose progress in improved water quality, soil health, biodiversity, yield abundance, and pesticide reduction across all material suppliers using regenerative agriculture?

Farmworker Health and Safety

26. Does the company ensure suppliers train farm workers in safe pesticide application practices, including e.g. farm workers are trained in their native languages to understand pesticide risk?
27. Does the company require suppliers to inform adjacent communities when spraying pesticides that contaminate the air, groundwater, and surface water?

Total Points Possible: 27

ENDNOTES

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