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October 7, 2025

Submitted Electronically via: https://calrecycle.commentinput.com/?id=VfBKce95R

Csilla Richmond
SB 54 Plastic Pollution Prevention and Packaging Producer Responsibility Act Regulations
California Department of Resources Recycling and Recovery (CalRecycle)
Regulations Unit
1001 "I" Street, MS-24B
Sacramento, CA 95814

RE: SB 54 Formal Rulemaking Comment Period: Plastic Pollution Prevention & Packaging Producer Responsibility Act

Dear Ms. Richmond:

Western Growers Association appreciates the opportunity to provide comments to CalRecycle on the proposed Senate Bill SB 54 (Allen, 2022) ("SB 54" or the "Act") Plastic Pollution Prevention & Packaging Producer Responsibility Act Permanent Regulations published on August 22, 2025 ("Draft" or "Draft Regulations"). Western Growers is an agricultural trade association headquartered in California. Western Growers members are small-, medium-, and large-sized businesses that produce, pack and ship fruits, vegetables, and tree nuts from our home states of California, Arizona, New Mexico, and Colorado. Western Growers members account for roughly half the annual fresh produce grown in the United States, providing consumers with healthy, nutritious food.

We appreciate CalRecycle's continued efforts to acknowledge the need for exclusion and exemption of fresh produce packaging in the latest Draft Regulations. The fresh produce industry remains committed to delivering safe, fresh, and affordable healthy produce to consumers. The considerations outlined in the Draft will support our ongoing efforts to develop packaging solutions that not only meet federal safety standards but also align with our sustainability goals.

US Food and Drug Administration (FDA) guidance documents provide a clear, acceptable path to compliance with legally binding statutes and regulations, such as the Food Safety Modernization Act (FSMA) and other critical food safety protective measures and guidelines. These documents have been previously reviewed and deemed acceptable by the FDA to meet these underlying legal requirements. Following FDA guideline documents, in addition to adhering to the mandated rules and regulations, represents the gold standard for operational excellence. For our members, achieving this gold standard in food safety is paramount. To illustrate their necessity, consider the pharmaceutical industry. The safety of medications and medical devices relies heavily on adherence to over 2,400 FDA guidance documents.[1] Their adherence is essential to maintaining a safe drug supply. Similarly, in the food sector, these FDA

[1] US Food and Drug Administration (FDA) guidance database website. Available here https://www.fda.gov/regulatory-information/search-fda-guidance-documents/guidances.

guidance documents are indispensable tools for ensuring the highest level of consumer protection and public health.

The FDA has a longstanding success record of developing different tools to direct and educate the regulated community. The FDA has published extensive guidelines related to food production and food safety. FDA inspections can be performed directly by the FDA or through a contracted state agency such as the California Department of Food and Agriculture (CDFA). "FSMA PSR [FDA Food Safety Modernization Act's Produce Safety Rule] inspectors draw from these guidance documents in interpreting and enforcing the rules, and judges may give weight to the information contained in guidance documents if a farm's practices are under question in court. Therefore, while a producer may adopt practices not articulated in guidance, they should be aware that guidance is representative of the FDA's current thinking and presents a good starting point for FSMA compliance."[2]

The Legislature included several key provisions in SB 54 that are intended to reduce the impact of the law on growers, to avoid conflicts with federal laws, regulations, and guidance that protect food safety and decrease spoilage, to reduce greenhouse gas (GHG) emissions associated with food waste, and to reduce the extent to which the Draft Regulations may make it more difficult for disadvantaged communities to afford healthy food.

<u>The Importance of Packaging in Protecting and Preserving Fresh Produce</u>

Packaging helps ensure that a high-quality, consistent product is delivered to the consumer year-round despite crop variety changes, handling variability, and overall product pre-harvest and post-harvest quality challenges. It protects the health and safety of consumers by reducing the potential for food contamination. It reduces the overall cost of groceries for families by keeping their produce fresh for longer and reducing food waste. Sustainable fresh produce packaging relies on the functional design and application of packaging systems to protect and preserve fruits and vegetables while minimizing negative impacts on the environment, economy, and society throughout the supply chain. Prioritizing the functionality of fresh produce packaging is essential because it aligns sustainability efforts with the primary purpose of packaging: to protect and preserve the food it contains.[3]

Life Cycle Assessment (LCA) studies show that the agricultural production phase, which requires water, land, and energy to grow, process, and transport fresh produce crops, accounts for an important portion of the total environmental footprint.[4] When the packaging or supply chain fails and food becomes food loss and waste, the entire environmental investment in that food is lost. There are still significant gaps in

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[2] Vermont School of Law. "Understanding the Relationship Between FDA Rules, Guidance and Other Communications". 2020. Available at https://cafs.vermontlaw.edu/wp-content/uploads/understanding-the-relationship-between-fda-rules-guidance-and-other-communications-2020.pdf.

[3] Western Growers Association, CPMA, & Qfresh Lab. Roadmap to Sustainable Fresh Produce Packaging. 2025. Available at https://wga.s3.us-west-1.amazonaws.com/science/2025/SPPA%20Report%20.pdf.

[4] Keoleian, Gregory, et al. "Life Cycle Assessment of Food Packaging and Waste - Phase 1: Literature Review and Case Study Descriptions." *Center for Sustainable Systems*, 2015. Available at https://css.umich.edu/publications/research-publications/life-cycle-assessment-food-packaging-and-waste-phase-1; Keoleian, Gregory, et al. "Life Cycle Assessment of Food Packaging and Waste - Phase 2: Case Study." *Center for Sustainable Systems*, 2016. Available at https://css.umich.edu/publications/research-publications/life-cycle-assessment-food-packaging-and-waste-phase-2-case.

understanding how to seamlessly integrate packaging technologies throughout the supply chain that need to be addressed to minimize food waste.[5] Reducing food loss and waste along the supply chain in households and the food service industry, helps California reach its ambitious GHG emissions reduction goals by contributing to a net reduction in GHG emissions from the global food system (agricultural production, handling and storage, processing and packaging, distribution, and consumption).

Plastic is an important material used in fresh produce packaging, and provides a lightweight, moisture-resistant, and customizable barrier that helps protect produce from mechanical damage, contamination, and excessive water loss, while allowing controlled gas exchange (e.g. via micro-perforations) to slow respiration and spoilage.[6] Currently, there are few materials that can match the capabilities of plastic to extend shelf life by days or more compared to unpackaged or less optimized alternatives. Research for alternatives to plastic are simply not able to keep up with the regulatory landscape. For example, the bioplastic PBAT (polybutylene adipate co-terephthalate) has shown some promise over the past decade for food packaging applications. However, the list of materials considered to be compostable is a moving target[7] that has posed challenges for the innovators and investors of compostable plastic packaging alternatives.[8]

Further assessment of the social and environmental impacts of plastic packaging alternatives such as those derived from biomass are needed. The packaging industry is just one of the many industries vying for biomass including energy, food/feed, biofuel, and materials/carbon.[9] Each plastic package alternative option should have a cost-benefit analysis (CBA) performed prior to establishing a regulation requiring it. For example, Rui et al. highlight the issues regarding precious agricultural land use changes from food production, to producing plant based (biomass) packaging material.[9] Costs associated with using agricultural soil for packaging material, a non-renewable resource that has a complex ecosystem, will result in considerable environmental and economic consequences.[9]

In the packaged salad industry, primary packaging serves as a barrier to protect from postprocessing contamination by microorganisms, chemicals, and foreign materials, while it also offers shelf-life extension by modifying package atmospheric gas compositions, generally oxygen and CO_2 percentages, which reduces the respiration and transpiration rate of the product, while also creating an acidic

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[5] Dwibedi, Vagish, et al. "Research Progress in the Preservation and Packaging of Fruits and Vegetables: From Traditional Methods to Innovative Technologies." *Food Packaging and Shelf Life*, vol. 46, Dec. 2024, p. 101385, https://doi.org/10.1016/j.fpsl.2024.101385.

[6] Brandenburg, Jeff. "Modified Atmosphere Packaging (MAP) White Paper Introduction of MAP for Produce." International Fresh Produce Association (IFPA), 2022. Available at https://www.freshproduce.com/siteassets/files/sustainability/map-white-paper.pdf.

[7] CalRecycle Response letter to the Biodegradable Products Institute. 2025. Available here https://www.documentcloud.org/documents/25976319-20250612calrecycleresponsetobpi1201ext0625-1/.

[8] Roy, Swarup, et al. "Recent Progress in PBAT-Based Films and Food Packaging Applications: A Mini-Review." Food Chemistry, vol. 437, 30 Mar. 2024, p. 137822, https://doi.org/10.1016/j.foodchem.2023.137822.

[9] Cruz, Rui M. S., et al. "Bioplastics for Food Packaging: Environmental Impact, Trends and Regulatory Aspects." Foods, vol. 11, no. 19, 1 Jan. 2022, p. 3087, www.mdpi.com/2304-8158/11/19/3087/htm, https://doi.org/10.3390/foods11193087; CalRecycle, Proposed Regulations for the Plastic Pollution Prevention and Packaging Producer Responsibility Act, Standardized Regulatory Impact Assessment (SRIA) (June 2025). Available at https://dof.ca.gov/wp-content/uploads/sites/352/2025/07/2025-SB-54-Standardized-Regulatory-Impact-Assessment-063025-1.pdf.

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environment which inhibits microbial growth and subsequently extends shelf life.[10] Plastic achieves this shelf-life extension through intentional design, providing differing packaging options with varying oxygen transmission rates (OTR).[11] With reduced oxygen and increased CO_2 levels, modified atmosphere packaging (MAP) can slow the senescence of the product, inhibit enzymatic activity, and disrupt the growth of aerobic microorganisms, which can lead to spoilage and food safety risks for consumers.[12]

Packaging Reduces the Risk of Harmful Contamination

If history has taught us anything, working together is better than alone. Risk management for food safety is undoubtedly complex. Practical solutions are necessary to address safety risks. The California Leafy Greens Marketing Agreement (CA LGMA) founded in 2007 is a great example of an industry-state partnership to address food safety risks following the *E. coli 0157:H7* outbreak in 2006 that sickened 205 people and tragically caused three deaths. The CA LGMA represents an unprecedented commitment to protecting public health and requires California farmers to follow a set of food safety practices that are assessed through mandatory government audits executed by CDFA. In 2007, Western Growers, in collaboration with CA LGMA released the first set of food safety standards to manage microbiological risk in leafy green operations. Since its inception, these food safety guidelines have continued to evolve with science through an adaptive and continual improvement process. While CA LGMA is focused on best practices for safe growing and harvesting operations, food safety practices involving packaging with appropriate materials have helped ensure food safety for consumers of fresh produce over the years.

The fresh fruit and vegetable segment, whether fresh-cut or whole fruits and vegetables, has intrinsic complexity with respect to product quality, shelf-life, and food safety risks.[13] While fruits and vegetables are critical for human health and nutrition, they also represent a food segment associated with multiple

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[10] Ahari, Hamed, and Solmaz P. Soufiani. "Smart and Active Food Packaging: Insights in Novel Food Packaging." Frontiers in Microbiology, vol. 12, 9 July 2021, https://doi.org/10.3389/fmicb.2021.657233; Alamri, M.S., et al. "Food Packaging's Materials: A Food Safety Perspective." Saudi Journal of Biological Sciences, vol. 28, no. 8, 1 Aug. 2021, pp. 4490–4499, https://doi.org/10.1016/j.sjbs.2021.04.047; Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." Foods, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." Food and Bioprocess Technology, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; Santi, Romina, et al. "Sustainable Food Packaging: An Integrative Framework." Sustainability, vol. 14, no. 13, 30 June 2022, p. 8045, https://doi.org/10.3390/su14138045.

[11] Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." Food and Bioprocess Technology, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; International Fresh Produce Association (IFPA). *State of the Industry Report 2023*. Available at https://www.freshproduce.com/siteassets/files/soi/2023-soi-report.pdf; Shaikh, Salman, et al. "An Overview of Biodegradable Packaging in Food Industry." *Current Research in Food Science*, vol. 4, no. 1, 2021, pp. 503–520. *Sciencedirect*, https://doi.org/10.1016/j.crfs.2021.07.005.

[12] Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." Food and Bioprocess Technology, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; Groh, Ksenia J., et al. "Overview of Intentionally Used Food Contact Chemicals and Their Hazards." *Environment International*, vol. 150, May 2021, p. 106225, https://doi.org/10.1016/j.envint.2020.106225.

[13] Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; López-Gálvez, Francisco, et al. "Reusable Plastic Crates (RPCs) for Fresh Produce (Case Study on Cauliflowers): Sustainable Packaging but Potential Salmonella Survival and Risk of Cross-Contamination." *Foods*, vol. 10, no. 6, 1 June 2021, p. 1254, https://doi.org/10.3390/foods10061254.

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foodborne outbreaks and consequently require focused attention to the risks associated with each produce item and packaged product.[14] For fresh-cut fruit and vegetables, packaging is a critical product design component, selected to optimize the shelf life (i.e., quality) of the items and to maintain safety for the consumer.[15] Packaging is a critical element in controlling potentially harmful post-processing exposures.[16] In 2023, Zwilling et al. note that, "Foodborne disease caused by bacterial pathogens causes approximately 3.6 million illnesses annually and represent 64% of the foodborne pathogen-related deaths annually in the U.S., with the remaining 36% caused by viruses and parasites."[36]

Additionally, packaging protects the fresh produce from contamination that can spread from other products in the store, such as pathogens from raw poultry products or raw meats that may spread from the hands of employees or customers or from surfaces of baskets and carts. Because consumers can easily see whether packaging has been tampered with, they can protect themselves from these health risks.

Packaging Extends the Shelf Life of Produce

The U.S. Department of Health and Human Services (HHS) Healthy People 2030 project identifies the importance that fruits and vegetables have on an individual's overall health, well-being, and onset of chronic diseases (e.g., diabetes, heart disease, cancer) and many efforts within the Draft Regulations are aimed at increasing availability and consumption amongst U.S. consumers.[17] Efficient and cost effective California agricultural production is needed more now than ever. Cuts to federal funding for food including recent proposed cuts to the federal Supplemental Nutrition Assistance Program (SNAP) and California's CalFresh funding, threaten people's access to healthy nutritious foods. In the face of federal cuts, California has been steadfast in its efforts to fight food insecurity and hunger.[18] California's fresh produce farmers, shippers, and processors are some of the most dedicated key players in this effort;

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[14] Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; Yu, Heyao, et al. "Consumers' Knowledge and Handling Practices Associated with Fresh-Cut Produce in the United States." *Foods*, vol. 11, no. 14, 21 July 2022, p. 2167, https://doi.org/10.3390/foods11142167.

[15] Ahari, Hamed, and Solmaz P. Soufiani. "Smart and Active Food Packaging: Insights in Novel Food Packaging." *Frontiers in Microbiology*, vol. 12, 9 July 2021, https://doi.org/10.3389/fmicb.2021.657233; Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Santi, Romina, et al. "Sustainable Food Packaging: An Integrative Framework." *Sustainability*, vol. 14, no. 13, 30 June 2022, p. 8045, https://doi.org/10.3390/su14138045; Schmid, Paul Jakob, et al. "Fiber-Based Food Packaging Materials in View of Bacterial Growth and Survival Capacities." *Frontiers in Microbiology*, vol. 14, 26 Jan. 2023, https://doi.org/10.3389/fmicb.2023.1099906.

[16] Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; Yu, Heyao, et al. "Consumers' Knowledge and Handling Practices Associated with Fresh-Cut Produce in the United States." *Foods*, vol. 11, no. 14, 21 July 2022, p. 2167, https://doi.org/10.3390/foods11142167.

[17] U.S. Office of Disease Prevention and Health Promotion. "Healthy People 2030." *Healthy People 2030*, 2024. Available at www.odphp.health.gov/healthypeople.

[18] California Association of Food Banks. "Governor Newsom Signs 2025-26 Budget." *California Association of Food Banks*, 2025. Available at www.cafoodbanks.org/blog/2025-26-budget/; San Diego Post. "Newsom Fights USDA after Devastating Blow to 30% of California Families Facing Hunger." *San Diego Post*, 7 Apr. 2025, www.sandiegopost.com/2025/04/07/newsom-fights-usda-after-devastating-blow-to-30-of-california-families-facing-hunger/.

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always looking for creative and innovative ways to get more value from a drop of water, and a ray of sunlight.

Specialized food packaging extends the shelf life of fresh produce, making fresh produce more accessible and more affordable to consumers. Packaging options are dependent on many variables including but not limited to, distance from farm to store, plant variety, availability of packaging materials, longevity of alternative packaging supply chains, market volatility, consumer volume demand, food safety regulations, and the ever-shifting concept of "sustainability". Each package we see in the store comes with a story, and some, particularly for fresh produce, is nuanced and intricate.

The packaged fresh-cut industry has made fruit and vegetable consumption accessible to consumers, resulting in increased access and better nutrition overall. Many fresh-cut fruits and vegetable items are designed to be ready-to-eat, with little to no preparation required by the consumer. Plastic packaging serves as a structural barrier to physical damage which can accelerate tissue destruction, alter respiration rates due to damaged cells, and enhance microbial growth on the damaged plant tissues (spoilage and pathogens), all conditions that lead to reductions in shelf-life.[19] As the demand for fresh-cut products has increased, packaging and material science engineers have designed more complex packaging to address the shelf-life and supply chain challenges to support the rapidly growing segment.[20]

The tremendous health and social benefits provided by fresh produce come with tremendous challenges such as how to protect its nutrition, safety, and the environment from farm to fork. Throughout this journey, the California agricultural industry is committed to environmental stewardship. One great example is the California berry industry's Berry Sustainable Coalition, which, prior to any regulation or law for packaging, committed to 100% recycle-ready clamshell packaging by 2025, driving circularity with inclusion of post-consumer recycled content in clamshell packaging and the recovery and reuse of clamshells, and committed to foster development of compostable paper-based packaging and to research new materials that are readily recyclable and/or compostable.[21]

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[19] Ahari, Hamed, and Solmaz P. Soufiani. "Smart and Active Food Packaging: Insights in Novel Food Packaging." *Frontiers in Microbiology*, vol. 12, 9 July 2021, https://doi.org/10.3389/fmicb.2021.657233; Alamri, M.S., et al. "Food Packaging's Materials: A Food Safety Perspective." *Saudi Journal of Biological Sciences*, vol. 28, no. 8, 1 Aug. 2021, pp. 4490–4499, https://doi.org/10.1016/j.sjbs.2021.04.047; Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; Karanth, Shraddha , et al. "Linking Microbial Contamination to Food Spoilage and Food Waste: The Role of Smart Packaging, Spoilage Risk Assessments, and Date Labeling." *Frontiers in Microbiology*, vol. 14, no. 14, 22 June 2023, https://doi.org/10.3389/fmicb.2023.1198124; Shaikh, Salman, et al. "An Overview of Biodegradable Packaging in Food Industry." *Current Research in Food Science*, vol. 4, no. 1, 2021, pp. 503–520. *Sciencedirect*, www.sciencedirect.com/science/article/pii/S2665927121000496, https://doi.org/10.1016/j.crfs.2021.07.005.

[20] Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; Yu, Heyao, et al. "Consumers' Knowledge and Handling Practices Associated with Fresh-Cut Produce in the United States." *Foods*, vol. 11, no. 14, 21 July 2022, p. 2167, https://doi.org/10.3390/foods11142167.

[21] Berry Sustainable website. Available at https://www.berrysustainable.com/.

Besides product shelf-life and food safety optimization, primary plastic packaging allows manufacturers and retailers to address food tampering, cross-contamination, and bioterrorism risks.[22] Fresh produce items are unique in that they continue to respire and undergo several metabolic processes post-harvest.[23] These ongoing metabolic processes require a dynamic package environment designed to control microbial growth and plant tissue degradation by managing respiration rates when stored at the proper refrigerated temperatures.[24] As one example, most field greens (e.g. lettuce) are harvested and then placed into a polyethylene bag in the field right where the product is grown. The bags serve multiple critical functions: protecting food safety, protecting the product from damage in transport, and extending shelf-life. The average field-pack lettuce bag has holes designed to provide a lower respiration rate for the produce, allowing lettuce to remain fresh for longer than it could without packaging.[25] This is even more important for salad mixes, which are an increasingly important source of vegetables for consumers, but that have a shorter shelf life than whole lettuce.

Packaging Helps Reduce Global GHG Emissions from the Food System

The issue of food waste is a growing concern. Food waste is the largest single material in landfills across the U.S. and is a significant contributor to global greenhouse gas emissions. California laws such as SB 1383 (Lara, 2016) support the 2015 U.S. Environmental Protection Agency (EPA) and U.S. Department of Agriculture (USDA) national level 50% food waste reduction goals set for 2030. SB 1383 requires every jurisdiction to provide organic waste collection services to all residents and businesses. Plastic packaging for fresh produce can keep millions of pounds of organic waste out of the collection bins.

The highly relevant study performed by Oregon's Department of Environmental Quality (DEQ) provides a deep dive into the role packaging plays in reducing food waste. Their study weighed the pros and cons of food packaging with respect to food waste and determined, "In short, because of the large amount of resources that go in to producing food, efforts to reduce food waste by increasing packaging can sometimes lead to significant reductions in environmental impact, even when the environmental impact of additional packaging is taken into account."[26] Results from a research project undertaken in Austria from 2016 to 2020, the "Stop Waste – Save Food" project, documented in the "Food Packaging Sustainability: A Guide for Packaging Manufacturers, food processors, retailers, political institutions & NGOs", echoed similar findings as the DEQ study. This sustainability guidance document noted, "Due to

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[22] Karanth, Shraddha, et al. "Linking Microbial Contamination to Food Spoilage and Food Waste: The Role of Smart Packaging, Spoilage Risk Assessments, and Date Labeling." *Frontiers in Microbiology*, vol. 14, no. 14, 22 June 2023, https://doi.org/10.3389/fmicb.2023.1198124; Santi, Romina, et al. "Sustainable Food Packaging: An Integrative Framework." *Sustainability*, vol. 14, no. 13, 30 June 2022, p. 8045, https://doi.org/10.3390/su14138045.

[23] Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748.

[24] Botondi, Rinaldo, et al. "A Review into the Effectiveness of Ozone Technology for Improving the Safety and Preserving the Quality of Fresh-Cut Fruits and Vegetables." *Foods*, vol. 10, no. 4, 1 Apr. 2021, p. 748, https://doi.org/10.3390/foods10040748; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4.

[25] Lee, Jung-Soo, and Dulal Chandra. "Effects of Different Packaging Materials and Methods on the Physical, Biochemical and Sensory Qualities of Lettuce." *Journal of Food Science and Technology*, vol. 55, no. 5, 1 May 2018, pp. 1685–1694, www.ncbi.nlm.nih.gov/pmc/articles/PMC5897287/, https://doi.org/10.1007/s13197-018-3081-6.

[26] Oregon Department of Environmental Quality. "Food Product Environmental Footprint Literature Summary: Packaging and Wasted Food. 2017. https://www.oregon.gov/deq/FilterDocs/PEF-Packaging-FullReport.pdf.

its protective function, packaging often helps to reduce food waste. If this is the case, the environmental benefit of avoided waste is usually 5 to 10 times higher than the environmental cost of the packaging."[27]

The DEQ and Austrian studies highlight the importance of ensuring true sustainability is achieved, not just given lip service. A great example is the misconception that carton egg containers are more environmentally friendly than egg containers made of rPET, when in fact, their lifecycle generates higher GHG emissions.[26] This indicates the need to assess each package and their LCA in a case-by-case approach to accurately determine its environmental and social impacts. The absolute need to determine net environmental benefit through a case-by-case approach is supported by the research performed by The Center for Sustainable Systems at the University of Michigan on LCA's for food packaging and waste based on detailed food packaging case studies.[28]

The EPA recently estimated that more food reaches landfills than any other material in municipal solid waste in the U.S., making up over 24 percent of municipal solid waste sent to landfills in 2018. "Wasted food contributes to a broad range of environmental impacts, including climate change, air pollutants, water scarcity, biodiversity loss, and soil and water degradation. Communities with environmental justice concerns bear the brunt of the adverse environmental, social, and economic consequences of waste management. By preventing food loss and waste where possible, environmental impacts and impacts to underserved communities can be substantially reduced."[29] Food waste accounts for about 7 percent of global GHG emissions. "Each year, food loss and waste from farm to kitchen embodies an area of agricultural land the size of California and New York combined, enough energy to power 50 million U.S. homes for a year, and emissions (excluding landfill emissions) equal to the annual CO_2 emissions of 42 coal-fired power plants."[29]

Packaging is a key strategy that has been shown to be effective in the fight to prevent food waste and to reduce overall GHG emissions from the food system. A 2018 study by the American Institute for Packaging and the Environment (AMERIPEN) estimated that proper use of packaging could reduce 10 to 15 percent of food waste at the store level and 20 to 25 percent of food waste at the household level.[30] Moreover, food waste and packaging are not binary choices in terms of GHG emissions. By reducing food waste, packaging can play a critical role in reducing GHG emissions attributable to the food system.[31] A recent analysis of the environmental impact of food loss waste, including evaluation of environmental

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[27] FoodTech website. Available at https://thefoodtech.com/wp-content/uploads/2020/10/GuidelineStopwasteSavefood.pdf.

[28] Keoleian, Gregory, et al. "Life Cycle Assessment of Food Packaging and Waste - Phase 1: Literature Review and Case Study Descriptions." *Center for Sustainable Systems*, 2015. Available at https://css.umich.edu/publications/research-publications/life-cycle-assessment-food-packaging-and-waste-phase-1; Keoleian, Gregory, et al. "Life Cycle Assessment of Food Packaging and Waste - Phase 2: Case Study." *Center for Sustainable Systems*, 2016. Available at https://css.umich.edu/publications/research-publications/life-cycle-assessment-food-packaging-and-waste-phase-2-case.

[29] U.S. Environmental Protection Agency (EPA). *2019 Wasted Food Report Estimates of Generation and Management of Wasted Food in the United States in 2019 EPA 530-R-23-005*. 2023. Available at https://www.epa.gov/system/files/documents/2024-04/2019-wasted-food-report_508_opt_ec_4.23correction.pdf.

[30] AMERIPEN. *Quantifying the Value of Packaging as a Strategy to Prevent Food Waste in America*. 2018. Available at https://www.vcm-international.com/wp-content/uploads/2023/08/Quantifying-the-Value-of-Packaging-AMERIPEN-Jan-2018.pdf.

[31] Dora, Manoj. "Why the Answer to Saving the Environment Isn't Getting Rid of All Plastic Food Packaging | the Independent." *The Independent*, 5 July 2019. Available at www.the-independent.com/life-style/food-and-drink/plastic-packaging-food-waste-global-warming-carbon-footprint-a8968541.html?amp_js_v=a6.

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impacts of the entire food system, found that cutting food waste in half would cut the total GHG emissions of the food system by 8.5 percent. A large portion of this net reduction is associated with reduced food service and household food waste. Reducing food waste from food service and households also "has the potential to reduce demand for inputs from the upstream stages including agricultural production and food processing."[32]

Current State of Fresh Produce Packaging

The produce industry is invested in improving packaging sustainability, including by creating more sustainable supply chains.[33] Over the last decade, the produce packaging industry has made significant strides in reducing packaging as well as reformulating packaging to lower the environmental impact of plastics used.[34] However, the need for specialized food packaging that is effective in protecting and preserving fresh produce, and that is accessible, not cost prohibitive, and meets all federal requirements, creates several unique challenges for growers.

In 2023 Schmid et al. stated, "In recent years, extensive research on active food packaging has aimed to provide new materials to maintain microbial food integrity beyond traditional packaging systems (Norrrahim et al., 2021). However, many active food packaging strategies are still in their infancy, demand complex functionalization and therefore can only address single steps in the food supply chain (Azevedo et al., 2022)."[35] Schmid et al.'s research on the growth and survival of in fiber-based packaging materials of *E. coli*, *Staphylococcus aureus*, *Bacillus cereus* (all of which are associated with illness and death) highlights just how critical the ratio of recycled fiber to virgin fiber is for deterring bacterial growth, with bacterial growth unfortunately favoring the higher recycled fiber content packages.[35] In addition to the need for managing pathogens associated with fresh produce harvesting and processing, Zwilling et al. point out another worrisome source for food pathogens, biodegradable packaging.[36] Zwilling et al. note, "Lignocellulosic materials are widely used for food packaging due to their renewable and biodegradable nature. However, their porous and absorptive properties can lead to the uptake and retention of bacteria during food processing, transportation, and storage, which pose a potential risk for outbreaks of

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[32] Read, Quentin D., et al. "Assessing the Environmental Impacts of Halving Food Loss and Waste along the Food Supply Chain." *Science of the Total Environment*, vol. 712, no. 1, 10 Apr. 2020, p. 136255, https://doi.org/10.1016/j.scitotenv.2019.136255.

[33] Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4; North Carolina State Extension, "Packaging Requirements for Fresh Fruits and Vegetables". 2020. Available at https://resources.sdspecialtyproducers.org/wp-content/uploads/2023/10/Packaging-Requirements-for-Fresh-Fruits-and-Vegetables-_-NC-State-Extension-Publications.pdf; Reichert, Corina L., et al. "Bio-Based Packaging: Materials, Modifications, Industrial Applications and Sustainability." *Polymers*, vol. 12, no. 7, 14 July 2020, p. 1558, https://doi.org/10.3390/polym12071558.

[34] Reichert, Corina L., et al. "Bio-Based Packaging: Materials, Modifications, Industrial Applications and Sustainability." *Polymers*, vol. 12, no. 7, 14 July 2020, p. 1558, https://doi.org/10.3390/polym12071558; Shaikh, Salman, et al. "An Overview of Biodegradable Packaging in Food Industry." *Current Research in Food Science*, vol. 4, no. 1, 2021, pp. 503–520. *Sciencedirect*, https://doi.org/10.1016/j.crfs.2021.07.005; Caleb, Oluwafemi J., et al. "Modified Atmosphere Packaging Technology of Fresh and Fresh-Cut Produce and the Microbial Consequences—a Review." *Food and Bioprocess Technology*, vol. 6, no. 2, 27 July 2012, pp. 303–329, https://doi.org/10.1007/s11947-012-0932-4.

[35] Schmid, Paul Jakob, et al. "Fiber-Based Food Packaging Materials in View of Bacterial Growth and Survival Capacities." *Frontiers in Microbiology*, vol. 14, 26 Jan. 2023, https://doi.org/10.3389/fmicb.2023.1099906.

[36] Zwilling, Jacob D, et al. "Survivability of Salmonella Typhimurium (ATCC 14208) and Listeria Innocua (ATCC 51742) on Lignocellulosic Materials for Paper Packaging." *Heliyon*, vol. 9, no. 3, Sept. 2023, p. e14122, https://doi.org/10.1016/j.heliyon.2023.e14122.

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foodborne disease. Thus, it is of great importance to understand how bacteria proliferate and survive on lignocellulosic surfaces. The aim of this research was to compare the growth and survivability of *Salmonella* Typhimurium and *L. innocua* on bleached and unbleached paper packaging materials."[36] Their research is yet another cautionary reminder that switching a packaging material for products we consume poses complex challenges that do not exist for non-edible product packaging changes, ESPECIALLY when it comes to packaging for raw, fresh, un-processed produce.[36]

Almost all clamshells today contain recycled plastic. In some categories like spinach, the clamshells are made from 100 percent rPET, or recycled polyester. By contrast, food grade post-consumer resin (PCR) for flexible packaging (e.g., bags) has only become widely available in recent years. PCR now makes up about 5 to 10 percent of every polyethylene package that some packaging companies are making. Part of the constraint is that it is expensive to set up factories to manufacture PCR, and PCR itself is also more expensive than virgin plastic by a factor of two to five depending on market conditions. Blending PCR with virgin plastic reduces the cost, which is necessary to keep fresh produce affordable. This is one reason Walmart, Inc.'s national program now uses 30% PCR plastic for its over 45 million potato bags annually. Packaging manufacturers and produce companies are working together to push for expanded availability and increased affordability of PCR for flexible packaging. We are excited that the recent efforts by the Recycling Partnership, with their launch of the Film & Flexibles Recycling Coalition (CalFFLEX initiative) in 2020, aim to tackle unique challenges and could provide the needed insights for this unique and required packaging.[37]

Plastic materials made from non-fossil fuel alternatives (e.g., compostable materials) are not sufficiently durable to safely preserve and protect fresh produce. Going beyond their lack of practical utility, compostable materials have other basic issues that make their wide-scale adoption infeasible. First, these materials currently are significantly more expensive than transitional plastics. This makes them unaffordable for consumers, who would see a significant increase in food costs when the cost difference is passed through[38]. Second, scaling production to replace plastics or even gain a significant market share will take years given the lead time necessary to build manufacturing facilities – timelines far beyond those in the Draft Regulations. Third, when produced, none of these materials compost at the rate and speed of other materials placed into industrial compost facilities. According to a 2017 report by Clean Water Fund, compostable bioplastic food ware is marketed as "green", but little is composted in practice; almost all is landfilled. Most large compost facilities turn in 30 to 40 days, and most compostable "plastics" compost in 80 to 90 days, which means most facilities will not take them. A 2020 paper from the University of Plymouth describes significant sourcing challenges when it comes to finding appropriate non-plastic packaging options.[39] Solutions for addressing plastic pollution are available but will require coordinated action internationally and across several sectors and stakeholders. A systematic review of literature about human health effects of recycling performed by researchers in the United Kingdom note the startling low

[37] The Recycling Partnership. "Film and Flexibles Coalition - the Recycling Partnership." *The Recycling Partnership*, 22 Nov. 2024. Available at https://recyclingpartnership.org/film-and-flexibles/.

[38] CalRecycle DF-131 Major Regulations Standardized Regulatory Impact Assessment Summary. 2025. Available here https://dof.ca.gov/wp-content/uploads/sites/352/2025/07/SB-54-DF-131-062525-ZH-1.pdf

[39] Napper, Imogen Ellen, and Richard C. Thompson. "Plastic Debris in the Marine Environment: History and Future Challenges." *Global Challenges*, vol. 4, no. 6, 6 Apr. 2020, https://doi.org/10.1002/gch2.201900081.

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number of LCA studies globally for food and drink containers. Their research points out the need for food specific LCA's to determine an accurate account of the benefits and risks associated with different packaging materials.[40]

Fiber options do exist for some applications, but they currently have significant limitations over plastics.

- Fiber is very porous, an attribute that is problematic as a packaging material since fresh produce is impacted by oxygen content as well as moisture. Cardboard packaging for berries, for instance, isn't suitable for shipping long distances due to the tendency of the material to collapse, thus crushing the berries. Strawberry growers have done extensive testing on this very point. Cardboard works best with local shipment. In nearly every case, some type of lamination is necessary to reduce the porous quality of fiber. Depending on the type of lamination being used, the lamination would disqualify the fiber packaging from being considered "compostable".
- Fiber packaging is much more expensive than plastics. For example, clamshell alternatives made from liner board can also be recycled but cost 2 to 2.5 times the plastic clamshell, if viable options are even available.
- Fiber tends to weigh more than plastics, which is problematic as it adds to the cost of shipping.
- From a GHG perspective, packaging material affects transportation emissions—paper, being heavier than plastic, could increase emissions if used as an alternative for certain crops.
- The environmental footprint to grow the crop used for fiber is larger than the footprint for plastic.

While the discussion on which is the right package to use continues, Oregon's DEQ poignantly stated, "While consumers may prefer to eat food as fresh as possible, we don't all live on farms, so processing and distribution of our food is a necessary reality."[26]

Comments on Draft Regulation

Our comments below include our support and concerns for the current Draft Regulations.

Section 18980.2. Categorically Excluded Materials

We appreciate CalRecycle's efforts to align the regulation with Federal laws, regulations, and guidelines to prevent conflict between state and federal laws. We support Section 18980.2. for the purpose of maintaining the ability to comply with federal and state rules, regulations, and guidelines as they related to use of critical and required packaging for food safety. We are pleased to see CalRecycle's addition of language in this section that highlights the important role that CDFA plays in food safety and the agency's expertise in fresh food production in proposed subsection (a)(2)(B), "Following review of the information provided by the entity, and any further consultation with the entity and any state or federal government agencies (including the California Department of Food and Agriculture and the California Department of Public Health) that the Department deems advisable, the Department shall determine whether the packaging or packaging component qualifies for the exclusion."

[40] Deeney, Megan, et al. "Human Health Effects of Recycling and Reusing Food Sector Consumer Plastics: A Systematic Review and Meta-Analysis of Life Cycle Assessments." *Journal of Cleaner Production*, vol. 397, 1 Feb. 2023, pp. 136567–136567, https://doi.org/10.1016/j.jclepro.2023.136567.

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Section 18980.2. Categorically Excluded Materials (a)(2)(B)

CalRecycle has proposed a very short 180-day window following its determination that packaging or a packaging component does not qualify for an exemption, after which the packaging or component is considered to be covered material. In many cases, it will not be reasonable possible for entities to satisfy the requirements of the Draft Regulations for those materials within 180 days.

The following information is provided to assist with understanding the financial and time commitments it takes the average sized company to switch their food packaging. For the purposes of this example, we will discuss primary (retail and Business to Business (B2B)) packaging noting that changes to primary packaging require assessment and possible changes to secondary and tertiary packaging.

Package design as noted previously is multifaceted and includes but is not limited to the following: testing and measurement (which includes compliance with federal standards and ISO standards set by the International Organization for Standardization (ISO) for which there are more than 1,600 related to the food packaging sector) [41], material engineering and testing (which includes chemical, physical, environmental, barrier, and migration testing) [42], product-package interactions (typically takes the longest time in the new product development (NPD) process) [43], and distribution (which includes International Safe Transit Association (ITSA) standards, ASTM International standards such as ASTM D4169).[44]

Primary packaging (retail and B2B) redesign is a substantial undertaking due to its multifaceted, iterative, phased requirements in order to be as successful as possible. Note, we mention 'successful as possible' because there is no guarantee for success, even after a package prototype is developed and tested. Packaging redesign on the level that would be required for the packaging types that are currently unable to meet the Draft Regulations' requirements (i.e. not on the Covered Material Category list), would include both packaging material and form. All packaging redesigns require a backup alternative that offsets the inherent risks of changing packaging that includes functionality, sustainability of raw material market, sustainability of circular economy (raw material market, end market, consumer behavior, to name a few). It is safe to say that these factors double the design costs and increase the testing timeline. The overall redesign process for food safe packaging can exceed 18 months, and this does not include the time required to secure multi-year material supply, contracts with packaging manufacturers, or the time required for custom machine fabrication.

The importance of package testing, while absolutely critical for compliance with federal regulations, rules, and guidance to ensure consumer safety, plays an important role in the creation and maintenance of a solid and reliable food supply chain that fosters efficient and cost-effective sustainable business

[41] International Organization of Standardization (ISO). 2018. "ISO and food". Available at https://www.iso.org/files/live/sites/isoorg/files/store/en/PUB100297.pdf.
[42] Preeti Singh, et al. *Food Packaging Materials: Testing & Quality Assurance*. London, Taylor and Francis, 2017, https://doi.org/10.1201/9781315374390.
[43] Piotrowski, Norbert. "Machine Learning Approach to Packaging Compatibility Testing in the New Product Development Process." *Journal of Intelligent Manufacturing*, 17 Feb. 2023, https://doi.org/10.1007/s10845-023-02090-8.
[44] Jayan, Heera, et al. "Testing Methods for Packaging Materials." *Bio-Based Materials for Food Packaging*, 2018, pp. 57–79, https://doi.org/10.1007/978-981-13-1909-9_3.

relationships. Consumers have come to expect a high level of consistency in their food supply via retailers, and retailers rely on farmers, processors, and shippers to get them fresh produce in a manner that is safe, meets or exceeds quality standards, and aligns with their business model which is largely driven by consumers. All entities in the food supply chain, from the time the farmer plants the seed in the soil, to when the lettuce makes its debut at the dinner table, must work together in concert.

Because the 180-day timeframe is insufficient for producers to adequately address these issues, we request that CalRecycle revise its proposal to provide that, at the time CalRecycle determines the packaging or packaging component does not qualify for an exclusion, CalRecycle will determine an appropriate timeframe after which the packaging or packaging component shall be considered covered material. In the interim, CalRecycle could require producers to implement good faith sustainability measures, including source reduction. This flexibility allows CalRecycle to account for differences in complexity of the packaging and its purpose, allows for progress in the interim period, and avoids creating a compliance obligation that is not reasonably possible for producers to achieve.

<u>Section 18980.2.3. Exemption for Specific Material with Demonstrated Recycling Rates & 18980.2.4. Exemption for Certain Types of Packaging</u>

We appreciate the Draft Regulations' alignment with statute, as noted in both Section 18980.2.3. and 18980.2.4., in which participating producers directly apply to CalRecycle for applicable packaging exemptions pursuant to Public Resources Code section 42060(a)(3) or (4). For producers who rely on materials that cannot comply with the Act, which includes plastic packaging that is critical to ensuring the safety of fresh produce in compliance with federal laws and guidelines, the ability to obtain an exemption from the requirements of the Act is paramount.

While not an exhaustive list of federal regulations that pertain to fresh produce and its packaging, we provide a few examples to highlight the ways in which federal fresh produce packaging regulations protect the public. In general, Title 21 federal regulations include numerous risk-based preventative controls for handling, processing, and transporting fresh produce that must be legally adhered to including but not limited to "Subchapter B – Food for Human Consumption". Packaging is designed to address a multitude of concerns and needs along the entire supply chain. One example of this is the Title 21 CFR Part 110 Subpart E Section 110.93 regulation that requires transportation and storage of fresh produce be done in a manner that will, "protect food against physical, chemical, and microbial contamination as well as against deterioration."[45]

The material and design of fresh produce packaging plays a critical role in food safety and the FDA regulations assist with ensuring consumers are free from unnecessary risk or harm. For example, when addressing the unique elements of fungi and other fresh produce that require packaging that allows the plant material to respire, the FDA guidance "Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption: Guidance for Industry" published in 2018 states, "You must package

[45] United States Food and Drug Administration (FDA). 1986, last amended 2025. 21 CFR Part 110 Subpart E -- Production and Process Controls. Available at https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-110/subpart-E.

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covered produce in a manner that prevents the formation of *Clostridium botulinum* toxin…"[46] Switching packaging for certain produce from a "custom-designed-to-meet-the-needs-package" such as breathable film plastic to an oxygen impermeable film can create the ideal environment for *C. botulinum* to grow. Title 21 CFR Part 117 Subpart B can be referenced for further details on FDA regulated food packaging materials. Regulatory language that impairs the ability of growers to comply with the Act or that unnecessarily increases compliance costs runs contrary to the state's public policy goals, including improving access to safe and affordable food.[47]

It is important to note that the cost of redesigning a package material and form[48] further adds to SB 54 compliance costs and, as a result, increases consumer food costs. These costs are in addition to the average compliance costs that CalRecycle's June 2025 Standardized Regulatory Impact Assessment (SRIA) estimates producers will each pay on average: $457,114.00 US dollars annually.[49] Our members take great pride in their work and the benefits that they bring to people by way of healthy affordable fresh food. Sadly, California farmers have only experienced increasing regulatory costs (highest in the nation), with an astonishing 1,366% increase since 2006.[50] Many California specialty crop commodities are operating on thin or negative profit margins.[51] For some California farmers, these additional SB 54 regulatory costs will be the proverbial straw.

<u>Section 18980.2.3. Exemption for Specific Material with Demonstrated Recycling Rates, 18980.2.4. Exemption for Certain Types of Packaging, and Section 18980.13. Compliance Evaluation and Determination</u>

The regulations should clearly provide that penalty accrual is stayed while CalRecycle considers an application for an exemption under Public Resources Code Section 42060(a)(3) and (4). SB 54 acknowledges that, for some covered material, compliance with the Act's requirements will be uniquely challenging or impossible, and those materials should be exempt from the requirements of the Act. (Pub. Res. Code, § 42060(a)(3), (4).) For these covered materials, it is impossible for a producer of a product using that covered material to comply with SB 54, and the Legislature did not require this impossibility.

The Draft's proposed exemption application process conflicts with and undermines the purpose of Public Resources Code section 42060(a)(3) and (4) by providing for an application review period of indeterminate length that begins after the effective date of the Act and the regulations. It proposes for an

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[46] FDA. 2018. Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption: Guidance for Industry. Available at https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-112.

[47] See California Department of Public Health, Center for Family Health, *Hunger, Nutrition, and Health*. Available at https://www.cdph.ca.gov/Programs/CFH/Pages/Hunger,-Nutrition,-and-Health.aspx.

[48] Package redesign costs depend on a variety of factors including raw material accessibility and market demand, intended functionality, geographic location of product operation (e.g., farm or processing facility), location of packaging manufacturer, number of intermediary companies in the supply chain, shelf life of the package (e.g., materials age, susceptibility to storage conditions including temperature and moisture can negatively impact structural integrity, microbial growth prevention), and consumer preference just to name a few.

[49] CalRecycle, Proposed Regulations for the Plastic Pollution Prevention and Packaging Producer Responsibility Act, Standardized Regulatory Impact Assessment (SRIA) (Jun. 2025), p. 38 [estimating annual compliance costs for producers of covered materials that have gross annual sales of products that use covered material within California greater than $1 million].

[50] Hamilton, L., et al. *Two Decades of Change: Evolving Costs of Regulatory Compliance in the Produce Industry*. 2025, available at https://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1164&context=agb_fac.

[51] UC Davis Cost and Return website available at https://coststudies.ucdavis.edu/current.

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exemption to be valid "upon approval," which leaves a period of time before it is valid where the producer applicant, who cannot comply with the Act's requirements,[52] is still subject to them. It takes the ability to avoid penalties out of the hands of the producer. Penalties of up to $50,000 per day could accrue for however long CalRecycle spends evaluating the application.[53] (Pub. Res. Code, § 42081.) In just a month, penalties could balloon to $1,500,000.

This result is incompatible with the language, purpose, and intent of the statutory exemptions. To remedy this problem, the proposed Section 19890.2.4 must clearly state that, while an application for an exemption pursuant to Public Resources Code section 42060(a)(3) or (4) is under review: (1) accrual of penalties related to the producer's use of the covered material is stayed, and (2) upon approval, the exemption is deemed effective as of the date of the application. CalRecycle has already proposed to provide a stay on penalty accrual for recycling service providers in the draft Article 13 Section 18980.13(j).[54] We urge CalRecycle to extend this accommodation to producers applying for an exemption or categorical exclusion pursuant to Public Resources Code section 42060(a)(3) or (4).

<u>Section 18980.5. Producer Compliance</u>

We strongly recommend greater flexibility for first-time producers registering with the Producer Responsibility Organization (PRO) than what is required in subsection (a) and (d) of Section 1890.5. The complexity of this regulation may leave certain entities unsure of their status as "producers" under the Act, insufficient time to comply. A 30-day registration mandate following the Draft Regulations' publication is too short for entities to fully grasp how these new requirements affect their specific operations. This compressed timeline risks leading to the submission of unnecessary and potentially inaccurate data to both the PRO and CalRecycle, creating an undue burden. This concern is amplified by the fact that the requirement involves submitting sensitive data from private companies to the PRO, which is a non-governmental entity.

CalRecycle, as they have done with other CalRecycle EPR programs, should provide additional resources and technical assistance for California businesses to determine whether they must comply with the SB 54 regulations. The PRO should have greater flexibility to set an onboarding schedule for new producers that work for both parties, thereby ensuring the submitted data is accurate.

Additionally, mandating complete 2023 data may be problematic for many producers. The proposed regulation requires a level of detail that may exceed the comprehensive record-keeping practices maintained by many producers in 2023. Existing systems were not designed to track data for this regulatory purpose. In addition, producers may not have retained these older records under their ordinary document retention schedules. While producers are fully committed to meeting these

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[52] CalRecycle's approval of the exemption application is clear proof that a producer of a product that uses the exempt covered material is not able to comply with the Act's requirements related to that exempt covered material.

[53] The Draft Regulation proposes for the exemption application review and decision making to be performed by the PRO. For the reasons explained above, CalRecycle's proposed delegation of its agency decision making authority to the PRO is not permitted by the Act and would violate producers' Constitutional rights to petition the government for redress and to due process.

[54] Proposed section 18980.13(j) provides: "No penalty may be imposed against a recycling service provider during the pendency of a request for an extension for, or exemption from, a requirement of subdivision (a) of section 42060.5 asserting that compliance with the requirement is not practicable for a specific identified covered material."

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requirements, to maximize participation in the registration process and ensure a more realistic, workable solution for producers, we recommend requiring producers to submit the 2023 data they have available in good faith, acknowledging that this data may be incomplete or may not exist. Inclusion of the "good faith" efforts requirement in the regulation for the initial reporting cycle is necessary to formally acknowledge the inherent challenges.

Western Growers is concerned about the potential for confusion or disagreement between producers, the PRO, and/or CalRecycle regarding the scope of data producers must provide to the PRO, particularly historic data, and the PRO's obligation to provide data to CalRecycle without modification. To clarify these obligations, we ask that CalRecycle include language in the proposed regulation to clarify that: (1) with the exception of the 2023 data needed for CalRecycle's determination of the baseline, producers are not required to provide the PRO with any other historic data; and (2) the PRO is required to provide CalRecycle with the 2023 data it received from the producers, without modification, for CalRecycle's use in deriving the 2023 baseline.

Western Growers also asks that CalRecycle revise its proposed Section 18980.5(d) to require that a producer submit to the PRO, at the time it applies to become a participant of the PRO, the producer's supply data for the prior calendar year. The current proposal to require producers to provide 2023 data is addressed elsewhere in section 18980.5, and its duplication in subsection (d) is not required by and is not consistent with the Act. Public Resources Code section 42057(c)-(e) requires producers to provide the PRO with specified data, including supply data, necessary for the PRO to meet its reporting requirements, including for annual reporting. Where the Legislature intended to require producers to provide data for a specific year, it clearly stated this intent in the statutory language. Notably, nothing in these sections requires producers to provide supply data from 2023 or any past year. Instead, these sections appear to be requesting data for comparison *against* a 2023 baseline, which indicates that the Legislature intended to require new participant producers to provide their current supply data to the PRO.

<u>Section 18980.6.7. Eco-Modulated Fee and Fee Schedule</u>

Guidelines are needed to ensure individual participating producer fees are based on requirements applicable to that producer. Public Resources Code section 42053(b) requires the PRO to determine a fee schedule for "each producer" during the first two years of operation and during preparation of the plan developed pursuant to section 42051.1. These producer-specific fee schedules must be "based on estimated costs of implementing the plan, operating costs, the costs of completing the needs assessment, the costs to cover environmental mitigation requirements of Section 42064, and the costs to reimburse the Department." In the third year and thereafter, the annual fee that applies to each producer must also be individualized and based, in part, on the costs to ensure each covered material meets the requirements of the Act.

While Section 18980.6.7. in the Draft does list out some individual factors the PRO must consider when setting a fee base rate for a particular covered product, several important considerations are missing from the list. For example, the Draft Regulations do not require the PRO to consider whether CalRecycle has exempted the covered product from the requirements of the Act. A PRO and CalRecycle have fewer obligations with respect to exempt material, which should be taken into account to reduce the base rate for those products. The regulations also do not require CalRecycle to consider the statutory provisions that eliminate compliance obligations for certain covered products, such as the statutory prohibition on requiring post-consumer content in food packaging. The PRO should be required to consider the fact that there are fewer compliance obligations with respect to food packaging to set a lower base rate for those products.

Finally, Section 18980.6.7.(i) in the Draft Regulations must be amended to make clear to the PRO that exempt material is not subject to malus fees. (See Pub. Res. Code, §§ 42041(o), 42053(e).) Nothing in the Act permits a malus fee to be assessed on exempt covered material, even if that material contains a chemical on Proposition 65 list.

18980.13.2. Administrative Civil Penalties (a)

The Act allows a producer to comply with its obligations under the Act and CalRecycle's implementing regulations by either (1) participating in the PRO's plan, or (2) individually, without participating in the PRO's plan, if the producer can demonstrate to the Department that it meets specified criteria. (Pub. Res. Code, § 42051.) Producers that elect to comply with SB 54 regulations by participating in a PRO's plan, and that are complying with their individual obligations under the Act and the implementing regulations (i.e., that are not the cause of the PRO's noncompliance), are reasonably relying on the PRO to comply as required by Public Resources Code sections 42051 and 42051.1. The PRO's violations are beyond the control of the participating producers. Imposing penalties on participating producers under these circumstances does not protect public health and safety or the environment because the participating producers have no control over any mitigating actions. Only the PRO has the ability to timely and voluntarily report the violation to CalRecycle, to correct the violation or conditions giving rise to the violation, and to prevent it from recurring. The Act requires CalRecycle to consider these factors when determining whether to assess a penalty under Section 42051. (See Pub. Res. Code § 42051(c).)

CalRecycle's proposal to impose penalties on participating producers for the conduct of the PRO, when the producer is individually in compliance with all legal requirements, conflicts with the letter and spirit of the Act. Imposing penalties on parties that have no reasonable ability to avoid the violation or to mitigate its effects is inconsistent with the minimum penalty factors established by the Legislature in Section 42051(c). It creates an incentive for individual producers to choose to separately comply with the SB 54 Act, without participating in a PRO, in order to have control over their own compliance and avoid penalties, which undermines the purpose of the legislation's PRO structure and increases compliance burdens for producers and for CalRecycle. And critically, it is inconsistent with the Act's prohibition on the PRO's use of funds it collects from participating producers to pay administrative penalties assessed against it. (Pub. Res. Code, § 42051.1(j)(2).) By requiring the PRO to satisfy any administrative penalties imposed against it for its noncompliance, SB 54 incentives the PRO to comply with the law, regulations, and its plan. CalRecycle's proposal gives CalRecycle discretion to shift the financial responsibility for the PRO's noncompliance away from the PRO to individual participating producers, directly conflicting with the SB 54 Act's requirement that the PRO, and the PRO alone, bear responsibility to pay administrative penalties resulting from its noncompliance. Modifying the Legislature's allocation of responsibility for SB

54 noncompliance is outside the scope of CalRecycle's regulatory authority granted by SB 54. Accordingly, CalRecycle must revise this proposed regulation to eliminate the conflicting language.

In closing, Western Growers supports the state's goal of reducing environmental harm and human health impacts associated with plastic pollution and we look forward to continuing to collaborate with CalRecycle on this goal. Thoughtful and careful implementation of the statutory requirements in the SB 54 Draft Regulations is critical to advance the policy goals of the law in a cost-effective way. Thank you for your time and consideration of our concerns. We look forward to further engaging with you on this issue.

Sincerely,

Gail Delihant

Gail Delihant
Senior Director, California Government Affairs