

# CHARLES M. BENBROOK

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## PERSONAL INFORMATION

Birthdate: November 26, 1949  
Place: Los Angeles, California  
Children: Stephen, Rachel, Michael, Seth and Zacary  
Wife: Karen Lutz Benbrook  
Hobbies: Fishing, Music

## EDUCATION

B.A. Degree - Economics, Harvard University (1971)  
M.A. Degree - Agricultural Economics, University of Wisconsin (1979)  
Ph.D. - Agricultural Economics, University of Wisconsin (1980)

## EMPLOYMENT HISTORY

Heartland Health Research Alliance, LTD, Executive Director. October 1, 2020 to present.

Founded new 501©3 non-profit to conduct cutting-edge science and policy around how food and food systems impact public and environmental health. Provide scientific, funding, and management support for HHRA's flagship project The Heartland Study, a multi-center birth cohort study on the impacts of glyphosate exposure on pregnancy, childbirth, and child development. Oversee an elite, multi-disciplinary team of scientists and communicators to conduct and disseminate research, with a goal of enacting meaningful policy changes that support public health.

Benbrook Consultant Services (BCS), President. December 1, 1990 to present.

Analytical services for domestic and international clients in the public and private sectors. Areas of focus include biotechnology; pesticide use, risks, and regulation; adoption and costs-benefits of Integrated Pest Management; impacts of federal environmental and food laws, especially the Food Quality Protection Act of 1996. BCS specializes in the development of novel methodologies to assess environmental and public health risks and issues.

Washington State University, Center for Sustaining Agriculture and Natural Resources, Research Professor. August 16, 2012 to May 15, 2015.

Adjunct Faculty, Department of Crop and Soil Sciences, Washington State University, October 31, 2007 to August 26, 2015

Research scientist and program leader for the “Measure to Manage Program – Farm and Food Diagnostics for Sustainability and Health.”

The Organic Center, Chief Scientist. January 1, 2006 to May 31, 2012.

Developed and managed a program of research on the environmental and consumer health benefits of organic foods and farming.

Last updated: November 30,

National Research Council/National Academy of Sciences,

Washington, D.C. Executive Director, Board on Agriculture. January 16, 1984 to November 30, 1990.

Responsible for overseeing and managing activities of the Board. Major BA/NAS reports published during this period addressed the methods and applications of agricultural biotechnology; unique risks faced by infants and children from pesticide exposure; resistance to pesticides; options to improve the nutritional composition of animal products; and, agricultural research and education.

Subcommittee on Department Operations, Research, and Foreign Agriculture, Committee on Agriculture, U.S. House of Representatives. Subcommittee chaired by Congressman George E. Brown, Jr., Staff Director. April 1981 - January 13, 1984.

Responsibilities included: (i) preparing and analyzing legislation within the jurisdiction of the subcommittee; (ii) organizing subcommittee hearings and business meetings; and, (iii) briefing members and staff on legislation and oversight activities.

Council on Environmental Quality, Executive Office of the President, Agricultural Policy Analyst. December 1979 - March 1981.

Represented CEQ on various Executive Branch committees; analyzed natural resource data and policy options; and (iii) conducted research and contributed to multiple Executive Branch reports.

## **AWARDS and HONORS**

Visiting Scholar, Bloomberg School of Public Health, Johns Hopkins University, March 31, 2017- June 30, 2018

Visiting Professor, Newcastle University, Newcastle, U.K. 2016 - Present

Excellence in Science Award, OTA/TOC Dinner, March 2014.

Appointed as member, USDA's AC 21 agricultural biotechnology advisory committee, 2010, and reappointed in 2013.

Appointed to AGree Advisory Committee, 2010.

Appointed as Adjunct Faculty Member, Department of Crop and Soil Sciences, Washington State University, Pullman, Washington, 2007.

Graduated cum laude from Harvard University, 1971.

Received \$1,000 cash award from the Council on Environmental Quality for contributions to the completion of the National Agricultural Lands Study.

### **LITIGATION HISTORY**

In addition to the above activities, Benbrook has participated in several lawsuits involving pesticide use and risks, agricultural biotechnology, and food labeling. The major cases are listed below:

1. Peterson, et al. v. BASF Corp. Plaintiff's attorney, Hugh Plunkett, Lockridge Grindal Nauen, St. Paul, Minnesota. Trial Ada, Minnesota, in the District Court for Northeastern Minnesota (Red River Valley)
2. James E. Fox, et al. v. Cheminova, Inc USDC, EDNY Case Number CV 00-5145, plaintiff's attorney Kevin Huddel, Jones, Verras, and Freiberg, LLC, New Orleans, Louisiana.
3. Ricardo Ruiz Guzman individually, Martin Martinez individually, and Miguel Farias and Ignacia Farias, husband and wife v. Amvac Chemical Corporation. Plaintiff's attorney, Richard Eymann, Eymann, Allison, Hunter, Jones, P.S., Spokane, Washington.
4. United Industries v. Dow AgroSciences. Plaintiff's attorney, Dudley Von Holt, Thompson Coburn LLP, St. Louis, Missouri.
5. Hardin, et al. v. BASF, U.S. District Court for the Eastern District of Arkansas. Plaintiff's attorney, William French, Looper Reed and McGraw, Dallas, Texas.
6. Timm Adams, et al. vs. U.S.A., et al., Idaho U.S.D.C. Case No. CIV 03-049-E-BLW, Plaintiff's attorneys, Holland and Hart, Boise, ID and Denver, CO.

7. Jim Aana, et al., vs. DuPont Pioneer and Gay Robinson, Inc. Civil No. CV12 00231 – LEK-BMK, United States District Court, District of Hawaii.

8. Conagra Foods, Inc, Case re Wesson oils, No. 11-cv-05379-MMM, U.S. District Court Central District of California Western District.

9. Laura Eggatz, Katrina Garcia, and Julie Martin v. Kashi Company. Civil Case No.: 12-21678-CIV-Lenardo/O’Sullivan, U.S. District Court, Southern District of Florida, Miami Division.

10. Grocery Manufacturers Association et al. Plaintiffs, v. William H. Sorrell, Attorney General of Vermont, et al., Case No. 5:14-cv-117, United States District Court for the State of Vermont.

11. Barron v. Snyder’s-Lance, Inc. No. 0:13-cv-62496-Leonard-Goodman (S.D. Fla.).

12. In re General Mills, Inc. Kix Cereal Litigation, Case No. 12-249 (KM) (JBC),U.S. District Court of New Jersey

13. Dewayne Johnson v. Monsanto Company, Case No. CGC-16-550128, Superior Court State of California County of San Francisco, and other federal and state cases involving glyphosate and NHL.

## RESEARCH and ANALYTICAL ACTIVITIES

1979-1983: Basic analytical work on the extent and distribution of soil erosion, findings used in development of the conservation provisions in the 1985 farm bill.

1981- 1983: Congressional oversight investigation of the pesticide regulatory activities of the Environmental Protection Agency, wrote a three-volume subcommittee report: "EPA Pesticide Regulatory Study." The report's findings and recommendations set in motion activities that led to the 1984-1987 NAS report *Regulating Pesticides in Food: The Delaney Paradox* (1987), the seminal 1993 NAS report *Pesticides in the Diets of Infants and Children*, and passage of the "Food Quality Protection Act" in 1996.

1988-1989: Compiled data and conducted analysis of private sector research investments in the food and agricultural industries, leading to Appendix B, "Private Sector Research Activities and Prospects", in *Investing in Research: A Proposal to Strengthen the Agricultural, Food, and Environmental System*, NAS Press, 1989.

1995-2000: Developed the first system in the U.S. that quantifies the level of adoption of Integrated Pest Management along the "IPM continuum." This early model of IPM adoption has

been refined and augmented through several iterations and applications in multiple projects, some of which are ongoing.

1999-2004: Developed a method to estimate the usage of subtherapeutic antimicrobials in livestock production for growth promotion and disease prevention. Did the analytical work and was principle author of the Union of Concerned Scientists' report *Hoggin It! Estimates of Antimicrobial Abuse in Livestock* (2001).

2004-June 2012: Developed the "Nutritional Quality Index" (NQI), a food nutritional profiling system encompassing 26 essential nutrients. For the first time ever, applied the system to all foods consumed in a day by an individual. Utilized model in assessment of the fatty acid profile of organic versus conventional whole milk.

2013-2014: Posted on the M2M website at Washington State University interactive systems allowing access to: (i) USDA pesticide use data by crop, state, and over time in the U.S., and (ii) detailed information on pesticide residues and risk levels in food, for organic and conventional food, and imported foods and domestic production.

xxxx-xxxx: Add something here about Hygeia, PUDS, DRI, etc?

## PEER-REVIEWED PUBLICATIONS, REPORTS, PRESENTATIONS and ARTICLES

Benbrook has published over 40 articles in peer reviewed journals, spanning multiple disciplines including agricultural biotechnology, pesticide use and residues in food, soil and water conservation, pesticide risk assessment methods, Integrated Pest Management, nutrition, germplasm conservation, scientific basis for evaluating agricultural technologies, antibiotic use and resistance, food safety, international agricultural development, sustainable agriculture, and agricultural policy. See <https://hygeia-analytics.com/about/who-we-are/#publications> for a list of publications with links to full text where available.

### Peer Reviewed Papers

Benbrook, Charles M., & Davis, Donald R.; "The dietary risk index system: a tool to track pesticide dietary risks;" *Environmental Health*, 2020, 19(1); DOI: [10.1186/s12940-020-00657-z](https://doi.org/10.1186/s12940-020-00657-z).

Mesnager, R, Benbrook, C, Antoniou M.N. "Insight into the confusion over surfactant co-formulants in glyphosate-based herbicides," *Food and Chemical Toxicology*, 2019, 128:137-145. <https://doi.org/10.1016/j.fct.2019.03.053>

Benbrook, Charles "How did the US EPA and IARC reach diametrically opposed conclusions on the genotoxicity of glyphosate-based herbicides?," *Environmental Sciences Europe*, 2019,

31(1). DOI: 10.1186/s12302-018-0184-7.

<https://enveurope.springeropen.com/articles/10.1186/s12302-018-0184-7>.

Benbrook, Charles, "Why Regulators Lost Track and Control of Pesticide Risks: Lessons From the Case of Glyphosate-Based Herbicides and Genetically Engineered-Crop Technology," *Current Environmental Health Reports*, 2018, 5(3), 387-395. DOI: 10.1007/s40572-018-0207-y. <https://www.ncbi.nlm.nih.gov/pubmed/30003510>.

Benbrook, Charles, Davis, D. R., Heins, B. J., Latif, M. A., Leifert, C., Peterman, L., Butler, G., Faergeman, O., Abel-Caines, S., & Baranski, M., "Enhancing the fatty acid profile of milk through forage-based rations, with nutrition modeling of diet outcomes," *Food Science & Nutrition*, 2018, (3), 681-700. DOI: 10.1002/fsn3.610. <https://www.ncbi.nlm.nih.gov/pubmed/29876120>.

Vandenberg, L. N., Blumberg, B., Antoniou, M. N., Benbrook, C. M., Carroll, L., Colborn, T., Everett, L. G., Hansen, M., Landrigan, P. J., Lanphear, B. P., Mesnage, R., Vom Saal, F. S., Welshons, W. V., & Myers, J. P., "Is it time to reassess current safety standards for glyphosate-based herbicides?," *Journal of Epidemiology and Community Health*, 2017, 71(6), 613-618. DOI: 10.1136/jech-2016-208463. <https://jech.bmj.com/content/jech/71/6/613.full.pdf>.

Benbrook, Charles, "Enhancements Needed in GE Crop and Food Regulation in the U.S," *Frontiers in Public Health*, 2016, 4, 59. DOI: 10.3389/fpubh.2016.00059. <https://www.ncbi.nlm.nih.gov/pubmed/27066473>.

Benbrook, Charles, "Trends in glyphosate herbicide use in the United States and globally," *Environmental Sciences Europe*, 2016, 28(1), 3. DOI: 10.1186/s12302-016-0070-0. <https://www.ncbi.nlm.nih.gov/pubmed/27752438>.

Myers, John Peterson, Antoniou, Michael N, Blumberg, Bruce, Carroll, Lynn, Colborn, Theo, Everett, Lorne G, Hansen, Michael, Landrigan, Philip J, Lanphear, Bruce P, Mesnage, Robin, Vandenberg, Laura N, Vom Saal, Frederick S, Welshons, Wade V, & Benbrook, Charles M, "Concerns over use of glyphosate-based herbicides and risks associated with exposures: a consensus statement," *Environmental Health*, 2016, 15, 19. DOI: 10.1186/s12940-016-0117-0. <https://www.ncbi.nlm.nih.gov/pubmed/26883814>.

Srednicka-Tober, D., Baranski, M., Seal, C., Sanderson, R., Benbrook, C., Steinshamn, H., Gromadzka-Ostrowska, J., Rembialkowska, E., Skwarlo-Sonta, K., Eyre, M., Cozzi, G., Krogh Larsen, M., Jordon, T., Niggli, U., Sakowski, T., Calder, P. C., Burdge, G. C., Sotiraki, S., Stefanakis, A., Yolcu, H., Stergiadis, S., Chatzidimitriou, E., Butler, G., Stewart, G., & Leifert, C., "Composition differences between organic and conventional meat: a

systematic literature review and meta-analysis," *British Journal of Nutrition*, 2016, 115(6), 994-1011. DOI: 10.1017/S0007114515005073.

<https://www.ncbi.nlm.nih.gov/pubmed/26878675>.

Srednicka-Tober, D., Baranski, M., Seal, C. J., Sanderson, R., Benbrook, C., Steinshamn, H., Gromadzka-Ostrowska, J., Rembialkowska, E., Skwarlo-Sonta, K., Eyre, M., Cozzi, G., Larsen, M. K., Jordon, T., Niggli, U., Sakowski, T., Calder, P. C., Burdge, G. C., Sotiraki, S., Stefanakis, A., Stergiadis, S., Yolcu, H., Chatzidimitriou, E., Butler, G., Stewart, G., & Leifert, C., "Higher PUFA and n-3 PUFA, conjugated linoleic acid, alpha-tocopherol and iron, but lower iodine and selenium concentrations in organic milk: a systematic literature review and meta- and redundancy analyses," *British Journal of Nutrition*, 2016, 115(6), 1043-1060. DOI: 10.1017/S0007114516000349.

<https://www.ncbi.nlm.nih.gov/pubmed/26878105>

Landrigan, Philip J, & Benbrook, Charles, "GMOs, Herbicides, and Public Health," *New England Journal of Medicine*, 2015, 373(8), 693-695.

Baranski, Marcin, Srednicka-Tober, Dominika, Volakakis, Nikolaos, Seal, Chris, Sanderson, Roy, Stewart, Gavin B, Benbrook, Charles, Biavati, Bruno, Markellou, Emilia, Giotis, Charilaos, Gromadzka-Ostrowska, Joanna, Rembialkowska, Ewa, Skwarlo-Sonta, Krystyna, Tahvonon, Raija, Janovska, Dagmar, Niggli, Urs, Nicot, Philippe, & Leifert, Carlo, "Higher antioxidant and lower cadmium concentrations and lower incidence of pesticide residues in organically grown crops: a systematic literature review and meta-analyses," *British Journal of Nutrition*, 2014, 112(5), 794-811. DOI: 10.1017/S0007114514001366.

<https://www.ncbi.nlm.nih.gov/pubmed/24968103>.

Benbrook, Charles, & Baker, Brian P., "Perspective on Dietary Risk Assessment of Pesticide Residues in Organic Food," *Sustainability*, 2014, 6, 3552-3570. DOI: 10.3390/su6063552.

[https://res.mdpi.com/sustainability/sustainability-06-03552/article\\_deploy/sustainability-06-03552.pdf?filename=&attachment=1](https://res.mdpi.com/sustainability/sustainability-06-03552/article_deploy/sustainability-06-03552.pdf?filename=&attachment=1).

Benbrook, Charles, "Are organic foods safer or healthier?," *Annals of Internal Medicine*, 2013, 158(4), 296-297. DOI: 10.7326/0003-4819-158-4-201302190-00017.

<https://www.ncbi.nlm.nih.gov/pubmed/23420244>.

Benbrook, Charles, "Impacts of Changing Pest Management Systems and Organic Production on Tree Fruit Pesticide Residues and Risk," *Acta Horticulturae*, 2013.

Benbrook, Charles, Butler, Gillian, Latif, Maged A., Leifert, Carlo, & Davis, Donald R., "Organic production enhances milk nutritional quality by shifting fatty acid composition: A United

States-wide, 18-month study," *Plos One*, 2013, 8, 1-13. DOI: 10.1371/journal.pone.0082429.

Benbrook, Charles "Impacts of genetically engineered crops on pesticide use in the U.S. -- the first sixteen years," *Environmental Sciences Europe*, 2012, 24. DOI: 10.1186/2190-4715-24-24.

Benbrook, Charles, "Genetically engineered crops increase pesticide use in United States.," *Pesticides News*, 2010, 12-14.

Benbrook, Charles, & Davis, Donald R, "Letter: Methodologic flaws in selecting studies and comparing nutrient concentrations led Dangour et al to miss the emerging forest amid the trees," *American Journal of Clinical Nutrition*, 2009, 90(6), 1700-1701; author reply 1701. <https://www.ncbi.nlm.nih.gov/pubmed/19846543>.

Benbrook, Charles, & McCullum-Gomez, C., "Organic vs conventional farming," *Journal of the American Dietetic Association*, 2009, 109(5), 809,811. DOI: 10.1016/j.jada.2009.03.019. <https://www.ncbi.nlm.nih.gov/pubmed/19394464>.

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Benbrook, Charles, "Toward a "Reduced Risk" Pesticide Policy Worthy of the Name," *Outlooks on Pest Management*, 2006, 17(4), 181-184. DOI: 10.1564/17aug11. <https://www.ingentaconnect.com/content/resinf/opm/2006/00000017/00000004/art00011>.

Benbrook, Charles, Mellinger, Charles, Frantz, Galen, Sexson, Deana, Stevenson, Walt, & Wyman, Jeffrey, "Use of "resistance risk profiles" to guide resistance management planning," *Pesticide Outlook*, 2003, 14(3), 107-110. DOI: 10.1039/B305507H. <http://dx.doi.org/10.1039/B305507H>.

McCullum, Christine, Benbrook, Charles, Knowles, Lori, Roberts, Susan, & Schryver, Tamara, "Application of modern biotechnology to food and agriculture: food systems perspective," *Journal of Nutrition Education and Behavior*, 2003, 35, 319-332.



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- Benbrook, Charles M., Sexson, Deana L., Wyman, Jeffrey A., Stevenson, Walter R., Lynch, Sarah, Wallendal, John, Diercks, Steve, Van Haren, Randy, & Granadino, Carlos A., "Developing a pesticide risk assessment tool to monitor progress in reducing reliance on high-risk pesticides," *American Journal of Potato Research*, 2002, 79(3), 183-199. DOI: 10.1007/BF02871934.
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- Benbrook, Charles, "Apples, kids and core science," *Choices. The Magazine of Food, Farm, and Resources Issues*, 2000, (No. 3), 21-24.
- Lynch, Sarah, Sexson, Deana, Benbrook, Charles, Carter, Mike, Wyman, Jeff, Nowak, Pete, Barzen, Jeb, Diercks, Steve, & Wallendal, John, "Working Out the Bugs," *Choices*, 2000, Third Quarter 2000, 28-32.
- Nigh, R., Benbrook, C., Brush, S., Garcia-Barrios, L., Ortega-Paczka, R., & Perales, H. R., "Transgenic crops: a cautionary tale," *Science*, 2000, 287(5460), 1927.  
<https://www.ncbi.nlm.nih.gov/pubmed/10755939>.
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- Benbrook, Charles, "The Den Bosch Declaration: Grappling with the challenges of sustainability," *Journal of Soil and Water Conservation*, 1991, 46(5), 349-352.  
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- Benbrook, Charles, "Protecting Iowa's common wealth: Challenges for the Leopold Center for Sustainable Agriculture," *Journal of Soil and Water Conservation*, 1991, 46(2), 89-95.  
<http://www.jswnonline.org/content/46/2/89.extract>.

- Benbrook, Charles, "Sustainable agriculture: Policy options and prospects," *American Journal of Alternative Agriculture*, 1989, 4(3-4), 153-159. DOI: 10.1017/S088918930000299X. <https://www.cambridge.org/core/article/sustainable-agriculture-policy-options-and-prospects/9BDD34D80698781F21BBF5A8793BCC61>.
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- Benbrook, Charles, "First principles: The definition of highly erodible land and tolerable soil loss," *Journal of Soil and Water Conservation*, 1988, 43(1), 35-38. <http://www.jswconline.org/content/43/1/35.extract>.
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### **Reports, Papers, and Book Chapters (partial list)**

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- Benbrook, Charles, "A Commentary on "Comparing the Yields of Organic and Conventional Agriculture" – A Study Published April 25, 2012 in *Nature*," 2012, The Organic Center.
- Benbrook, Charles, "A Deeper Shade of Green: Lessons from Grass-based Organic Dairy Farms," 2012, The Organic Center.
- Benbrook, Charles, "Glyphosate Tolerant Crops in the EU: A Forecast of Impacts on Herbicide Use," 2012, Greenpeace International.
- Benbrook, Charles, "Initial Reflections on the Annals of Internal Medicine Paper "Are Organic Foods Safer and Healthier Than Conventional Alternatives? A Systematic Review"," 2012, Washington State University.
- Benbrook, Charles, "The Organic Center's "Dietary Risk Index": Tracking Relative Pesticide Risks in Foods and Beverages," 2011, The Organic Center.
- Benbrook, Charles, "Transforming Jane Doe's Diet," 2011, The Organic Center, [https://organic-center.org/reportfiles/Transforming\\_Jane\\_Does\\_Diet\\_FINAL.pdf](https://organic-center.org/reportfiles/Transforming_Jane_Does_Diet_FINAL.pdf).
- Benbrook, Charles, "Comments re: National Organic Program's proposed rule on Periodic Residue Testing [Document Number AMS–NOP–10–0102; NOP–10–10, 76 Federal Register 23914---23920 dated April 29, 2011; Regulatory Information Number (RIN) 0581–AD11]." Agency, Year, Available at: URL.
- Benbrook, Charles, & Davis, Donald R, "Identifying Smart Food Choices on the Path to Healthier Diets," 2011, The Organic Center, Documentation and Applications of TOC-NQI, Version 1.1.
- Benbrook, Charles, "Primer on the Fatty Acids in Milk," 2010.
- Benbrook, Charles, "What Does Sustainable Agriculture Have to Offer? Conclusions and Recommendations in Two NAS / NRC Reports by Charles Benbrook," 2010, The Organic Center.
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- Benbrook, Charles, "*Simplifying the Pesticide Risk Equation: The Organic Option*," 2008, The Organic Center, State of Science Review: The Organic Option.
- Benbrook, Charles, Zhao, Xin, Yáñez, Jaime, Davies, Neal, & Andrews, Preston, "*Executive Summary: New evidence confirms the nutritional superiority of plant-based organic foods*," 2008, The Organic Center.
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- Benbrook, Charles, "*Unfinished Business: Preventing E. Coli O157 Outbreaks in Leafy Greens*," 2007, The Organic Center.
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- Benbrook, Charles, "*Evidence of the Magnitude and Consequences of the Roundup Ready Soybean Yield Drag from University-Based Varietal Trials in 1998*," 1999, Ag BioTech InfoNet, Technical Paper Number 1.
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- Benbrook, Charles. (1991). What We Know, Don't Know, and Need to Know About Pesticide Residues in Food. In B. G. Tweedy (Ed.), *Pesticide Residues and Food Safety: A Harvest of Viewpoints* (Vol. Symposium Series #446): American Chemical Society.
- Benbrook, Charles, "*Investing in Research: A Proposal to Strengthen the Agricultural, Food, and Environmental System, Appendix B: Private Sector Research Activities and Prospects*," 1989, NAS Press.
- Benbrook, Charles. (1985). Public Policies and Institutions to Enhance Crop Productivity. In *Crop Productivity Research Imperatives Revisited: Proceedings of the Crop Productivity Revisited Conference* (pp. 239-257).

### Partial List of Presentations, Congressional Testimony, and Opinion Pieces

(See <https://hygeia-analytics.com/about/who-we-are/#participation> for details on Dr. Benbrook's Congressional Testimony, including full text links where available.)

Benbrook, C. "Private Sector Initiatives to Reduce Children's Pesticide Exposures," AAAS annual meeting symposium on reducing children's pesticide risks, February 19, 2006, St. Louis, Missouri.

Landrigan, P., and Benbrook, C. "Impacts of the Food Quality Protection Act on Children's Exposures to Pesticides," AAAS annual meeting symposium on reducing children's pesticide risks, February 19, 2006, St. Louis, Missouri.

**Commented [RB1]:** Should I add the HS presentations that we have record of on the website? There will be a big gap between 2006 and 2019 then tho....

Benbrook, C. "Sowing the Seeds of Destruction," Op-Ed in the New York Times, July 11, 2003. Accessible at [http://www.biotech-info.net/sowing\\_seeds\\_NYT.html](http://www.biotech-info.net/sowing_seeds_NYT.html)

Benbrook, C.M., "Why pesticide risks matter and pose tough challenges for ecolabel programs", In Proceedings of a Conference on Ecolabels and the Greening of the Food Market, Tufts University, Boston MA, November 7-9, 2003.

Benbrook, C., and E. Groth. "Who Controls and Who Benefits from Plant Genomics?," AAAS Genomics Seminar Paper, February 19, 2000.

Benbrook, C. M.. "Performance criteria for IPM: measuring IPM results," Henk, M. Kogan M. IPM in Oregon: Achievements and Future Directions, Special Report 1020 , 19-27. 2000. Corvallis: Integrated Plant Protection Center, Oregon State University Extension Service.

1998-2002 comments to the EPA and reports on the implementation of the Food Quality Protection Act are accessible through the Consumers Union FQPA website at <http://www.ecologic-ipm.net>.

Benbrook, C. and J. Cook.. "Striving Toward Sustainability: A Framework to Guide On-Farm Innovation, Research, and Policy Analysis," March 2, 1990. Paper presented at the 1990 Pacific Northwest Symposium on Sustainable Agriculture, Vancouver, Washington.

Benbrook, C. "Conflict or Cooperation: The Path to a 1990 Farm Bill," March 22, 1990. Speech presented before the "Who's Writing the Farm Bill?" Conference, sponsored by Governor George Mickelson and the South Dakota Department of Agriculture, Sioux Falls.

Pesticide Regulatory Policy: Creating a Positive Climate for Innovation. Presented before the Conference on Technology and Agricultural Policy on December 12, 1986. Published in Technology and Agricultural Policy: Proceedings of a Symposium, 1990, pp. 122-140.

Agriculture and Groundwater Quality: Policy Implications and Choices. January 17, 1989. Paper presented as part of the "Technical Session on Agriculture and Groundwater Quality," 1989 Annual Meeting of the American Association for the Advancement of Science, San Francisco, California.

Practical Realities and Political Options in Overcoming World Hunger. February 28, 1989. Invited testimony before the Subcommittee on Natural Resources, Agriculture Research, and the Environment, House Committee on Science and Technology.

Sustainable Agriculture: Policy Options and Prospects. February 28, 1989. Speech before the Institute for Alternative Agriculture Symposium on Sustainable Agriculture, Washington, DC. Published in the American Journal of Alternative Agriculture 4:3-4, pp. 153-159.

Coping With Delaney's Paradox. May 15, 1989. Invited testimony before the Subcommittee on Toxic Substances, Environmental Oversight, Research and Development of the Senate Committee on Environment and Public Works.

Will S. 7222 Unravel Delaney's Paradox? June 6, 1989. Invited testimony before the Senate Labor and Human Resources Committee's Food Safety Hearing.

Priority Setting Mechanisms Utilized by the U.S. Department of Agriculture. June 20, 1989. Testimony before the Senate Agriculture Committee's Agricultural Research and General Legislation Subcommittee.

The United States' Progress Toward Sustainable Resource Development. July 31, 1989. Paper presented at the Forty-fourth Annual Meeting of the Soil and Water Conservation Society, Edmonton, Alberta, Canada.

Balancing Agricultural Production and Resource Conservation Goals Through Commodity Program Reform: Recommendations from the NAS Report Alternative Agriculture. September 21, 1989. Invited testimony before the Senate Committee on Agriculture, Nutrition, and Forestry's Subcommittee on Agriculture Production and Stabilization.

Alternatives to Pesticides: Findings and Recommendations from the NAS Report Alternative Agriculture. September 22, 1989. Invited testimony by Dr. Charles M. Benbrook and Dr. Robert M. Goodman before the Senate Committee on Environment and Public Works' Subcommittee on Toxic Substances, environmental Oversight, Research and Development Hearing on Pesticides.

Agriculture's Contribution to Water Quality Protection: Lessons from the NRC Report Alternative Agriculture. October 3, 1989. Invited testimony before a joint hearing of the House Committee on Agriculture's Subcommittee on Department Operations, Research, and Foreign Agriculture, and the House Committee on Science and Technology's Subcommittee on Natural Resources, Agricultural Research, and the Environment.

Unraveling Delaney's Paradox: Unfinished Business. October 19, 1989. Invited testimony before the House Committee on Agriculture's Subcommittee on Department Operations, Research, and Foreign Agriculture.



Opportunities to Protect Water Quality: Lessons from the NRC Report Alternative Agriculture. October 24, 1989. Invited testimony before a hearing of the Senate Committee on Agriculture, Nutrition, and Forestry's Subcommittee on Conservation and Forestry.

Quality in the American Food Industry: Lessons from the NRC Alternative Agriculture Report. November 3, 1989. Paper presented at the Seventh International Conference on Gastronomy; "Tradition and Innovation in American Food and Wine--A View From the Midwest," Chicago, Illinois.

Beware the Future: Pesticides, Public Policy, and Pest Management. Presented before the 14th Illinois Crop Protection Workshop sponsored by the Illinois Cooperative Extension Service, March 9-11, 1988.

Pesticide Food Safety Act of 1988. September 7, 1988. Invited testimony before the Subcommittee on Department Operations, Research, and Foreign Agriculture, Committee on Agriculture, U.S. House of Representatives.

Florida's Food Safety Challenges. September 27, 1988. Speech presented at the 45th Annual Convention of the Florida Fruit and Vegetable Association in Naples, Florida.

Federal-State Cooperation in the Regulation of Pesticides, chapter in the Primer Agricultural Chemicals and the Midwestern States. Proceedings of a conference held March 27-28, 1987.

Benbrook, C., and Moses, P. "Herbicide Resistance: Environmental and Economic Issues," Proceedings, BioExpo 1986.

### **Major Board on Agriculture NAS/NRC Reports**

Soil Conservation: An Assessment of the National Resources Inventory, Volumes 1 and II (1986)

Pesticide and Groundwater Quality: Issues and Problems in Four States (1986)

Pesticide Resistance: Strategies and Tactics for Management (1986)

Agricultural Biotechnology: Strategies for National Competitiveness (1987)

Educating the Next Generation of Food and Agricultural Professionals (1987)

Regulating Pesticides in Food: The Delaney Paradox (1987)

Designing Foods: Animal Product Options in the Marketplace (1988)

Understanding Agriculture: Education in the Secondary Schools (1988)

Alternative Farming (1989)

Investing in Research: A Proposal to Strengthen the Agricultural, Food, and Environmental System (1990)

Pesticides in the Diets of Infants and Children (1993, started in 1989)

Soil and Water Quality: An Agenda for Agriculture (1993, started in 1988)

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