



December 19, 2017

Honorable Karen Ross
Secretary
California Department of Food
& Agriculture
1220 N Street
Sacramento, California 95814

Dr. Karen Smith, MPH
Director
California Department of Public Health
PO Box 997377, MS 0500
Sacramento, California 95899-7377

Dear Secretary Ross and Director Smith:

Recent wildfires in California have affected many establishments regulated by the U.S. Food and Drug Administration (FDA). We understand the devastating impact this disaster has had on those impacted by the wildfires and stand ready to continue to assist with recovery efforts.

The wildfires have burned areas that include forests, homes, and businesses, resulting in the drifting and depositing of smoke and ash on crops and fields. FDA has received questions from facilities and from California state officials on how to assess the safety of affected crops and fields. While the FDA has formalized guidance on crops impacted by natural disasters such as flooding, no formalized guidance exists for this particular situation. Therefore, we have compiled some resources that may be useful in assisting growers with their responsibility to assure the safety of the crops they produce for human consumption.

Due to the diverse landscape that burned in the wildfires, numerous potential contaminants in the smoke and ash could pose risks to human and animal health. Toxic elements, firefighting chemicals, and combustion products such as polycyclic aromatic hydrocarbons (PAHs) and dioxins are of greatest concern. Growers may consider testing for these wildfire contaminants, and others, as appropriate, to determine the suitability of crops for use as human food. We encourage growers to work with state regulators and local FDA officials to assess their particular situations.

Livestock producers that utilize pastures to feed their animals, including cattle, small ruminants, and poultry, should visually inspect their pastures for the presence of wildfire contaminants, before introducing animals. If you determine the pasture was contaminated with soot and ash from the wildfire, sampling and analysis would determine if the pasture is

suitable for grazing. Many of the wildfire contaminants of concern present a risk to the animal's health as well as a risk to human health from foods produced by animals exposed to wildfire contamination.

In some circumstances, FDA has authorized the salvage of human or animal food considered to be adulterated for its intended use due to contamination by either reconditioning or diverting that food to an acceptable animal feed use. Requests for reconditioning or diversion are handled on a case-by-case basis. For information on these requests, please consult the FDA Compliance Policy Guide Sec. 675.200: Diversion of Adulterated Food to Acceptable Animal Feed Use

(<https://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/ucm074694.htm>) and Compliance Policy Guide Sec. 160.700: Reconditioning of Foods

Adulterated Under 402(a)(4)

(<https://www.fda.gov/iceci/compliancemanuals/compliancepolicyguidancemanual/ucm073853.htm>). Submit requests, supporting data and questions to Matthew Walburger, Acting Director, Compliance Branch, Division 5 West, Office of Human and Animal Food Operations, Office of Regulatory Affairs (Matthew.Walburger@fda.hhs.gov, Phone (559) 261-1082 ext. 19).

Additional information for growers on FDA's policies on food contaminants and adulteration:

- Food Contaminants & Adulteration
(<http://www.fda.gov/Food/FoodSafety/FoodContaminantsAdulteration/default.htm>)
- FDA Compliance Policy Guides, Chapter 5 – Foods, Colors, and Cosmetics
(<http://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/ucm119194.htm>)
- FDA Compliance Policy Guide Sec. 675.200: Diversion of Adulterated Food to Acceptable Animal Feed Use
(<https://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/ucm074694.htm>)
- Guidance for Industry: Action Levels for Poisonous or Deleterious Substances in Human Food and Animal Feed
(<https://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/ChemicalContaminantsMetalsNaturalToxinsPesticides/ucm077969.htm>)
- FDA Compliance Policy Guide Sec. 160.700: Reconditioning of Foods Adulterated Under 402(a)(4)
(<https://www.fda.gov/iceci/compliancemanuals/compliancepolicyguidancemanual/ucm073853.htm>)

The following resources may help growers and testing laboratories determine appropriate testing methods for chemical and metal contaminants in foods:

- *Toxic Elements, including cadmium, mercury, lead, and arsenic.* Analytical testing methods for toxic elements can be found in FDA's Elemental Analysis Manual (EAM) for Food and Related Products (<https://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006954.htm>).
- *Polychlorinated Biphenyls (PCBs).*
For total PCB analysis, FDA recommends methods described in Volume 1 of FDA's Pesticide Analytical Manual (PAM), Chapter 3, Chapter 5, and Appendix I (<https://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm111455.htm>).
For individual PCB congener analysis, FDA recommends methods published by the US Environmental Protection Agency (EPA): Method 1668C. Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS, April 2010 (http://water.epa.gov/scitech/methods/cwa/upload/M1668C_11June10-PCB_Congeners.pdf).
- *Other contaminants as appropriate to the specific wildfire and crop situation.* For example, if it is known that a significant amount of pesticide products were stored at an establishment burned by the wildfire, the grower may consider testing salvaged crop for possible pesticide contamination. Analytical testing methods for pesticides can be found in FDA's Pesticide Analytical Manual (PAM) (<https://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm2006955.htm>).
- *Tolerances for pesticides.* Pesticide tolerances can be found in 40 Code of Federal Regulations (CFR) part 180 (https://www.ecfr.gov/cgi-bin/text-idx?SID=05968162fc1662ca234bf254bc344f39&mc=true&tpl=/ecfrbrowse/Title40/40cfr180_main_02.tpl).

The following non-FDA resources may also provide helpful information:

- U.S. Environmental Protection Agency, 2002. Emissions of Organic Air Toxics from Open Burning. Available online at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P1001G31.PDF?Dockey=P1001G31.PDF>. Last accessed on 12-14-2017.

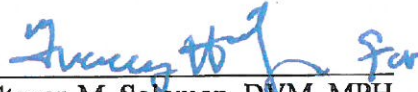
- Arizona Department of Health Services Wildfire Emergency Response Plan. Available online at: <http://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/extreme-weather/wildfires/adhs-wildfire-emergency-response-plan.pdf>. Last accessed on 12-14-2017.
- Natural Resources Conservation Service, January 2006. Management after wildfire. Available online at https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_001731.pdf. Last accessed on 12-14-2017.
- United States Department of Agriculture, Food Safety and Inspection Service. August 2013. Fires and Food Safety. Available online at https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/emergency-preparedness/fires-and-food-safety/ct_index. Last accessed on 12-14-2017.
- The Australian Wine Research Institute. Smoke Taint. Available online at https://www.awri.com.au/industry_support/winemaking_resources/smoke-taint/. Last accessed on 12-14-2017.
- Kennison, K.R., Wilkinson, K.L.; Williams, H.G., Smith, J.H., and Gibberd, M. G., 2017. Smoke-derived taint in wine: effect of postharvest smoke exposure of grapes on the chemical composition and sensory characteristics of wine. *Journal of Agricultural and Food Chemistry*, 55: 10897-10901. Available online at: <http://wineserver.ucdavis.edu/pdf/attachment/1123.%20Smoke%20taint%201.pdf>. Last accessed on 12-14-2017.
- Estrellan, C.R., and Lino, F., Review: Toxic emissions from open burning. *Chemosphere*, 80(3), 193-207. Available online at <http://www.sciencedirect.com/science/article/pii/S0045653510003711>. Last accessed on 12-14-2017.
- Statheropoulos, M. and Karmaa, S., 2007. Complexity and origin of the smoke components as measured near the flame-front of a real forest fire incident: A case study. *Journal of Analytical and Applied Pyrolysis*, 78(2), 430-437. Available online at: <http://www.sciencedirect.com/science/article/pii/S0165237006001409>. Last accessed on 12-14-2017.
- Nakao, T., Aozasa, O., Ohta, S., and Miyata, H., 2002. Formation of dioxin analogs by open-air incineration of waste wood and by fire of buildings and houses concerning Hanshin Great Earthquake in Japan. *Chemosphere*, 46(3), 429-437. Available online at: <http://www.sciencedirect.com/science/article/pii/S0045653501001424>. Last accessed on 12-14-2017.

We stand ready to assist and provide support in your recovery efforts for this terrible disaster. Hopefully the wildfires will be contained as quickly as possible to limit further damage. We express our sympathy to those impacted by the unfortunate events that have occurred in California.

Sincerely,



Susan T. Mayne, Ph.D.
Director
Center for Food Safety
and Applied Nutrition



Steven M. Solomon, DVM, MPH
Director
Center for Veterinary Medicine