

Balancing Food Safety and Organic Requirements for: Wild and Domestic Animals

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Introduction

Organic producers are required by the National Organic Program (NOP) to conserve biodiversity, including *wildlife*¹. The federal Food Safety Modernization Act (FSMA) makes it clear that no conflicts should occur between food safety and organic regulations. Therefore, the Food and Drug Administration (FDA) regulations permit crops to be grown in diverse landscapes with wildlife and native habitat. FDA allows the presence of wild or *feral*² animals in crop production fields, stating that the animals themselves are not a significant food safety risk.

NOP and FDA require *livestock*³ operations to minimize the occurrence and spread of pathogens to crops, soil and water. FDA allows the use of *working animals*⁴ (horses, guard dogs, weeder geese) around crop fields. FDA regulations additionally require that places where crops are packed and stored are not contaminated by animal waste. FDA requires that most *domestic animals*⁵ be kept out of fully enclosed buildings; exceptions include guard and guide dogs.

Requirements for Each Regulation

National Organic Program

- Organic production practices must conserve biodiversity and maintain or improve the natural resources of the operation including soil, water, wetlands, woodlands and wildlife.
- Organic livestock operations must manage manure, pastures and other outdoor access areas in a manner that does not contribute to contamination of crops, soil, or water by pathogenic organisms.
- Organic preventive livestock health care practices must include sanitation practices that minimize the occurrence and spread of diseases.

FDA FSMA Produce Safety

- FSMA states that no FDA requirements should conflict with or duplicate the requirements of the NOP.
- FDA allows growers to produce crops in diverse landscapes with native species without using fences to exclude animals or destroying animal habitat or otherwise clearing farm borders around crops or drainages.
- If growers have domesticated animals, they must have a system that adequately controls the excreta and litter in order to prevent contamination of a) crops, b) places where crops are packed and stored, and c) irrigation water sources and distribution systems.
- FDA allows the use of working animals around the crop.

Definitions

1. Wildlife. Non-domesticated animals living in nature.
2. Feral animals. Animals having escaped from domestication and become wild.
3. Livestock. Farm animals kept for use and profit.
4. Working animals. Animals that help with farm work, such as horses, guard dogs, and weeder geese.
5. Domestic animals. Any of various animals, such as horses or sheep, domesticated so as to live and breed in a tame condition.

Frequently Asked Questions

What can growers tell their organic buyer or auditor when they say they don't like wildlife habitat growing next to the crops?

FDA does not require the removal of wildlife habitat, fencing of crops, or bare ground buffers between crops and habitat. This is because FSMA directed FDA to write regulations that do not conflict with NOP's requirements to conserve biodiversity. Biodiversity helps the organic farm function by supporting pollinators, natural enemy insects, and raptors that help to keep rodents and pest birds in check. Research indicates that the elimination of natural vegetation surrounding farm fields does not reduce the presence of pathogens in crop fields, and that removing riparian vegetation may increase food safety risks.

When is fencing necessary?

Fencing is not required by FDA. Growers should fence if they need to protect their crop from a significant number of animals eating, trampling, and defecating on it. When fencing is necessary, it should be installed around individual fields, not the entire farm, to allow for landscape-scale wildlife movement. Check with proper authorities, such as water boards (in California the Regional Water Quality Control Boards), state departments of fish and wildlife, and US Fish and Wildlife, when fencing near riparian areas and wildlife linkages.

What are the risks of wild animals carrying pathogens into my crop field?

In general, most wild mammals and birds have been shown to have a low prevalence of carrying pathogens such as *E. coli* O157:H7 or *Salmonella*, although some localized wildlife populations may be of concern. Where wildlife live can influence the number of pathogens they carry: areas with high levels of pathogens, such as landfills, feedlots, dairies, cattle ranches, or pig farms can contaminate wildlife that feed there. Seed- and refuse-eating birds, rodents, and feral pigs associated with these places are known to be a greater risk than other native wildlife in natural areas.



Photo by A.Habich

*Wild birds and other animals that visit areas of increased risk, such as this dairy where cattle have a high incidence of carrying *E. coli* 0157:H7, are more often found with pathogens than those wildlife living and feeding in natural areas.*

What are the risks of livestock carrying pathogens into crop field?

FDA states that domestic animals, due to their close proximity and interaction with humans, are generally more likely to harbor pathogens than are wild animals. Domestic animals carry more or fewer pathogens depending on the age and type of animal, stress level, season, association with human or domestic animal activity, the number of animals, and environmental conditions. Cattle often host *E. coli* pathogens. Pigs and poultry are known carriers of *Salmonella*. Sheep and goats can host *Listeria* more than other livestock.

Workers on the farm who also handle livestock and come in contact with livestock feces could also be another source of pathogen entry to crop fields. Such workers are required to clean and preferably change clothing after livestock duties and before working with produce.

Can cats and dogs be on the farm?

FDA allows pets on the farm provided that the grower develops and implements a system for adequate control of their feces and litter.

Are there different requirements for animals in or near fully enclosed buildings?

FDA requires that domestic animals be excluded or separated when located in or around fully enclosed buildings that contain crops, food contact surfaces, or food packing material. However, guide or guard dogs can be in some areas if they are unlikely to cause contamination.

Does planting non-crop vegetation such as hedgerows and grasses help to filter pathogens? Habitat in the form of hedgerows and windbreaks can help to intercept airborne pathogens which may blow into the farm attached to particles of dust. Vegetative buffers can remove between 35% and 55% of downwind dust in the air. Non-edible plants should be used in these types of buffers.

Grasses, riparian areas, and wetlands can help filter waterborne pathogens. This vegetation acts as a physical barrier to pathogens carried in contaminated runoff and helps to prevent them from moving downslope to crop production areas or surface waters.

Conclusion

Organic farmers are required by the NOP and allowed by FDA to maintain or improve their biodiversity, including wildlife and habitat. Growers can share with their buyers and auditors the production and food safety benefits of biodiversity and should not feel pressured into taking out habitat or putting up fences. Wild and domestic animals can carry pathogens, although wildlife has a lower risk. Conserving and planting habitat can help to reduce pathogens entering the farm.



Photo by E. Chris Wisner

Resources

1. Baumgartner et al. 2016. Co-Managing Farm Stewardship with Food Safety GAPs and Conservation Practices: A Grower's and Conservationist's Handbook. Wild Farm Alliance. <http://bit.ly/2smBEaF>
2. Baumgartner, J. A. 2017. A Farmer's Guide to Food Safety and Conservation: Facts, Tips and Frequently Asked Questions. Wild Farm Alliance and Community Alliance with Family Farmers. <http://www.caff.org/resources/foodsafety/>
3. Baumgartner et al. 2016. Biodiversity Conservation: An Organic Farmer's and Certifier's Guide. Wild Farm Alliance <http://www.wildfarmalliance.org/biodiversity>
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5. Jay, M. T., M. Cooley, et al. 2007. *Escherichia coli* O157:H7 in feral swine near spinach fields and cattle, central California coast. *Emerging Infectious Diseases* 13, no. 12: 1908-11.
6. Karp et al. 2015. Comanaging fresh produce for nature conservation and food safety. *Proceedings of the National Academy of Sciences* 112, no. 35: 11126-11131.
7. Kilonzo et al. 2013. Fecal shedding of zoonotic food-borne pathogens by wild rodents in a major agricultural region of the central California coast. *Applied and environmental microbiology* 79, no. 20: 6337-6344.
8. Letourneau, D. K., Allen, S. G. B., Kula, R. R., Sharkey, M. J., & Stireman III, J. O. 2015. Habitat eradication and cropland intensification may reduce parasitoid diversity and natural pest control services in annual crop fields. *Elementa: Science of the Anthropocene* 3.1.4
9. Lowell K, et al. 2010. "Safe and sustainable: Co-managing for food safety and ecological health in California's Central Coast region." The Nature Conservancy of California and the Georgetown University Produce Safety Project.
10. National Organic Program 5020. 2016. Natural Resources and Biodiversity Conservation Guidance 5020
11. US FDA. Standards for the Growing, Harvesting, Packing, and Holding of Produce for Human Consumption. <http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm334114.htm>

References

1. Animals intrusion is addressed in comment 319 of the Preamble of the FDA's Federal Regulation of Standards for Growing, Harvesting, Packing, and Holding of Produce for Human Consumption. Full text here: <https://www.federalregister.gov/d/2015-28159/p-1246>
2. Organic production practices must conserve biodiversity and maintain natural resources as stated in the National Organic Program parts §205.200 and §205.2 of the Federal Regulations. Full text here: https://www.ecfr.gov/cgi-bin/text-idx?SID=dc3a2b87bff233bc5fade0f1205d3359&mc=true&node=se7.3.205_1200&rgn=div8
3. Organic livestock operations must manage manure and outdoor growing areas to prevent contamination as stated in the National Organic Program part §205.239(e) of the Federal Regulations. Full text here: https://www.ecfr.gov/cgi-bin/text-idx?SID=dc3a2b87bff233bc5fade0f1205d3359&mc=true&node=se7.3.205_1239&rgn=div8
4. Organic preventive livestock healthcare practices must minimize the spread of disease as stated in part §205.238(a)(3) of the Federal Regulations. Full text here: https://www.ecfr.gov/cgi-bin/text-idx?SID=dc3a2b87bff233bc5fade0f1205d3359&mc=true&node=se7.3.205_1238&rgn=div8
5. The FDA states in parts FSMA 105.(a)(3)(E), §112.84, and §112.134 of the Federal Regulation of Standards for Growing, Harvesting, Packing, and Holding of Produce for Human Consumption that no FSMA requirements should conflict or duplicate National Organic Program requirements. Growers do not have to fence or exclude animals, or destroy animal habitat. Full text found at: <https://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm247548.htm#SEC105>
6. The FDA states in part §112.83 of the Federal Regulation of Standards for Growing, Harvesting, Packing, and Holding of Produce for Human Consumption that growers must have a system in place to adequately control domesticated animals' excreta and litter on farms. Full text found at: <https://www.federalregister.gov/documents/2015/11/27/2015-28159/standards-for-the-growing-harvesting-packing-and-holding-of-produce-for-human-consumption#p-2262>
7. The FDA states in part §112.127 of the Federal Regulation of Standards for Growing, Harvesting, Packing, and Holding of Produce for Human Consumption the requirements for domesticated animals in fully enclosed buildings. Full text found at: <https://www.federalregister.gov/d/2015-28159/p-2306>
8. The FDA states in part §112.134 of the Federal Regulation of Standards for Growing, Harvesting, Packing, and Holding of Produce for Human Consumption the requirements for controlling domesticated animal excreta. Full text found at: <https://www.federalregister.gov/d/2015-28159/p-2343>

Acknowledgments

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