

Research on Food Borne Pathogens with Grazing in Orchards

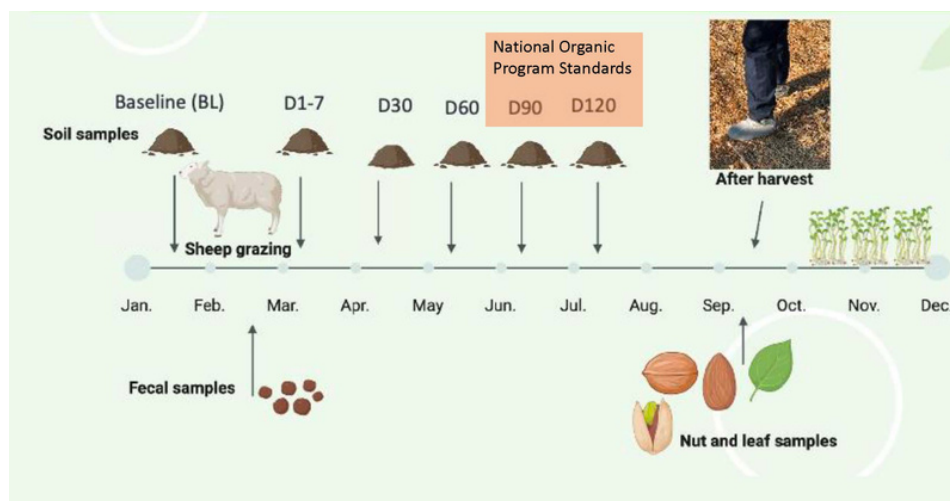
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Interest in using sheep to help manage cover crops and improve soil health in orchards is growing. However, livestock can also carry food borne pathogens, and their presence in orchards raises important food safety concerns. Animals may introduce pathogens into the soil through manure, with the potential for transfer to nuts. In addition, factors such as animal diet can influence how much pathogens are shed and how long they persist in the soil.



Field diagram for soil sampling time intervals



Growers are encouraged to follow USDA National Organic Program (NOP) guidelines, which recommend a 90–120 day interval between raw manure application and harvest, depending on whether the edible portion of the crop contacts the soil.



It is important to note that these intervals were developed for manure applications and may not directly reflect the risks associated with managed grazing systems. Ongoing research is taking a multi-regional, integrated approach to better understand how to balance these trade-offs. Microbial testing includes indicators of fecal contamination and pathogenic *E. coli*, such as *E. coli* O157:H7. Current studies in California orchards indicate low detection levels of food borne pathogens in systems grazed by sheep, suggesting that, with appropriate management, risks may be minimized. However further research with a larger number of sites is on-going by UC Davis and UC Riverside.

