

MANURE MANAGEMENT FOR VEGETABLE GARDENS

From: Food Safety Begins on the Farm – A Grower’s Guide written and compiled by A. Rangarajan, El Bihn, R. Gravani, D. Scott, and M. Pritts

Consider the source, storage, and type of manure being used on the farm.

- Store manure as far away as practical from areas where fresh produce is grown and handled. If manure is not composted, age the manure to be applied to produce fields for at least six months prior to application.
- Where possible, erect physical barriers or wind barriers to prevent runoff and wind drift of manure.
- Actively compost manure. High temperatures achieved by well-managed aerobic compost can kill most harmful pathogens. Remember to optimize temperature, turning, and time to produce high quality, stable compost. See references at the end of this booklet for additional details.

Plan manure application timing carefully.

- Apply manure in the fall or at the end of the season to all planned vegetable ground or fruit acreage, preferably when soils are warm, non-saturated, and cover-cropped.
- If applying manure in the spring (or the start of a season), spread the manure two weeks before planting, preferably to grain or forage crops.
- DO NOT harvest vegetables or fruits until 120 days after manure application.
- Remember to document rates, dates, and locations of manure application.

Incorporate manure into the soil.

- Incorporate manure immediately after application. Although it is known that many harmful pathogens do not survive long in the soil, research is still needed on soil microbes and pathogen interactions. Some pathogens, such as *Listeria monocytogenes*, may survive and grow in the soil.
- If it is necessary to apply manure to vegetable or fruit ground, incorporate it at least two weeks prior to planting and observe the suggested 120 preharvest interval.
- If the 120-day waiting period is not feasible, such as for short season crops like lettuce or leafy greens, apply only properly composted manure.

Choose appropriate crops

- Avoid growing root and leafy crops in the year that manure is applied to a field.
- Apply manure to grain or forage crops.

Apply manure to perennial crops in the planting year only. The long period between application and harvest will reduce the risks.

References

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2. Rudolfs, W., L.L. Falk, R.A. Ragotzkie. 1950. Literature review on the occurrence and survival of enteric, pathogenic, and relative organisms in soil, water, sewage, and sludges, and on vegetation. I. Bacterial and virus diseases. *Sewage and Industrial Wastes*, 22: 1261-1281. II. Animal parasites, *Sewage and Industrial Wastes*. 22: 1417-1427.
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This information was extracted from a booklet compiled by the Good Agricultural Practices (GAPs) Program team. Funding has been received from the USDA-CSREES and the US FDA to coordinate a national training program on food safety assurance for fruit and vegetable growers. The goal of the GAPs is to reduce microbial risks in fresh fruits and vegetables by developing a comprehensive education and extension program. The program objectives are to design educational materials about GAPs and inform growers about the microbial risks that can occur on the farm.

While the program is based at Cornell University, there are collaborators from 16 states. If you would like additional information about how you can reduce microbial risks on your farm, contact the GAPs Team.

Elizabeth A. Bihn, M.S.,
Coordinator GAPs Project
Cornell Dept. of Food Science
Phone: 607-254-5383
Email :eab38@cornell.edu

Susie Craig
WSU Coop Ext
Thurston County
Phone: 360-786-5445
Email: scraig@wsu.edu