

# GUIDELINES FOR USING MANURE ON VEGETABLE GARDENS

Pathogens (microorganisms which cause disease) can be transferred from animal manures to humans. Pathogens that have been linked to manure applications include bacteria such as *Listeria*, *Salmonella*, and *E. coli* O157:H7 as well as parasites such as roundworms and tapeworms.

Publicity about illnesses due to *E. coli* O157:H7 has made people much more aware of the potential risk of food borne illness from manure contamination of food. Due to this increased awareness many people are now asking about the safety of using manure on garden soil.

When fresh manure is used in a vegetable garden, there is a risk that pathogens that cause disease may contaminate garden vegetables. The risk of manure application is greatest for root crops like radishes and carrots and for leafy vegetables such as lettuce where the edible part touches the soil. Careful washing and/or peeling will remove some of the pathogens. Thorough cooking is more effective at killing pathogens on garden crops.

To reduce the risk of illness, we suggest these precautions:

1. If fresh (uncomposted) manure is to be used it should be applied before planting and roto-tilled or disked into the soil. Any manure application after planting should be with composted manure. No animal manure or manure-containing product of any kind should be applied within 30 days of harvest unless commercially processed and guaranteed pathogen free.
2. Only potable water or canal water known to meet the bacteriological standards of potable water should be used to water vegetables that are to be eaten raw. This is critically important within one month of harvest.
3. Thoroughly wash raw vegetables before eating.
4. Do not use cat, dog, or pig manures in gardens or compost piles because parasites that can be in these manures may survive and remain infectious for people.
5. People who are especially susceptible to food borne illnesses should avoid eating uncooked vegetables from manure gardens. Those who face special risks from food borne illness include pregnant women, very young children and those with chronic disease such as cancer, kidney failure, chronic liver disease, diabetes or AIDS.

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