

Manure and Soil Input Hazards and Control Measures in Vegetable and Fruit Production

FACTSHEET

What is the issue?

All crops require nutrients to grow. Most crops that are grown in soil, will take the nutrients from the soil. Adding manures or other soil inputs is a good way to increase soil health and the availability of nutrients to plants to improve crop success and productivity.

Depending on the crops grown, soil input source and how it has been treated will determine the risk to the crop. Manures come with several contamination risks mostly relating to pathogens and chemicals. Ways to lower these risks include storing and composting to help degrade these.

Where soil inputs are from animals and untreated they have a high potential to contaminate crops, particularly if they are applied to land that will grow crops that are not cooked.

There are several types of soil inputs that are commonly used within vegetable production.

- Anaerobic Digestate – PAS110 – material from a PAS110 certified anaerobic digester company with traceability and microbiological analysis in place.
- Compost – PAS 100 – material from a PAS110 certified composting company with traceability and microbiological analysis in place.
- Compost non assured / green / green food – composted plant material from either own farm that has been composted, or from municipal waste facilities that are not assured.
- Treated manure / slurry – animal manure / slurry that has been composted to a set protocol to achieve >55°C for 3 consecutive days, turned to move outside inside, >55°C for 3 consecutive days, turned to move outside inside, >55°C for 3 consecutive days (total minimum 9 days >55°C)
- Raw manure – animal manure / slurry that has not been composted to the set protocol, or there are no records to show it has achieved >55°C for 9 days (3 x 3 days with turning).
- Sewage Sludge – conventional or enhanced sewage sludge.
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When sourcing the raw material to use as the base of a soil input, the grower should ensure:

- It is from a known source.
- Animal manure should be from your own livestock, or livestock which you can access health records (medicines etc.) if required.
- Green crop material should be from your own site to minimise the risk of bringing crop disease onto your site.
- Where your own crops are known to have been affected by crop diseases, then consider if you want to use this as a soil improver or ensure the composting process will reduce the risk down.
- Decide what controls you are going to implement and ensure that any specific temperatures and times are adhered to, checked and recorded.



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	Anaerobic Digestate PAS 110 and pasteurised. Composts PAS 100. Biochar.	Composts non assured, green and green food. Treated manure / slurry	Raw manure / slurry	Land where immediate previous use has been grazing	Sewage sludge
0	Needs positive release	Never	Never	Never	Never
1 Soil	Any time before planting.	Any time before planting.	Not within 12 months of planting	Sheep – must have been off land for at least 12 months prior to planting. Cows – must have been off land for at least 12 months prior to planting.	Not within 5 years
1 Raised	Any time before planting. As a mulch as long as edible portion is not present or clearly avoided.	Any time before planting.	Not within 12 months of planting	Sheep – must have been off land for at least 12 months prior to planting. Cows – must have been off land for at least 12 months prior to planting.	Not within 5 years



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	Anaerobic Digestate PAS 110 and pasteurised. Composts PAS 100. Biochar.	Composts non assured, green and green food. Treated manure / slurry	Raw manure / slurry	Land where immediate previous use has been grazing	Sewage sludge
2 Soil	Any time before planting.	Any time before planting.	Not within 12 months of harvest.	Sheep – must have been off land for at least 3 months prior to harvesting. Cows – must have been off land for at least 6 months prior to harvest.	Not within 5 years
2 Raised	Any time before planting.	Any time before planting.	Not within 12 months of harvest.	Sheep – must have been off land for at least 3 months prior to harvesting. Cows – must have been off land for at least 12 months prior to harvest.	Not within 5 years
	As a mulch as long as edible portion is not present or clearly avoided.				
2 Tree	Any time before planting.	Any time before planting.	Not within 12 months of harvest.	Sheep – must have been off land for at least 3 months prior to harvesting. Cows – must have been off land for at least 12 months prior to harvest.	Not within 5 years
	As a mulch as long as fruits not present.				



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	Anaerobic Digestate PAS 110 and pasteurised. Composts PAS 100. Biochar.	Composts non assured, green and green food. Treated manure / slurry	Raw manure / slurry	Land where immediate previous use has been grazing	Sewage sludge
3 Soil	Any time before planting.	Any time before planting.	Any time before planting.	Any time before planting.	Not within 3 years
3 Raised	Any time before planting.	Any time before planting.	Any time before planting.	Any time before planting.	Not within 3 years
	As a mulch as long as edible portion is not present or clearly avoided.				
3 Tree	Any time before planting.	Any time before planting.	Any time before planting.	Any time before planting.	Not within 3 years
	As a mulch at least 1 month before harvest.	As a mulch at least 1 month before harvest	As a mulch before the blossom has appeared.	As a mulch before the blossom has appeared.	

For individual crop categories please see the crop risk tab on the Small Grower Spreadsheet.

Category 0 – Crops that are eaten raw with a history of issues such as micro herbs and sprouted seeds.

Category 1 soil - Crops that are eaten raw, where the edible portion of the crop is grown in the ground and are not protected by skin, pod or similar.

Category 1 raised - Crops that are eaten raw, where the edible portion of the crop is grown clear of the ground and are not protected by a skin, pod or similar.

Category 2 soil - Crops that are eaten raw, where the edible portion of the crop is grown in the ground and is protected by a skin, pod or similar.

Category 2 raised - Crops that are eaten raw, where the edible portion of the crop is grown of the ground, but not in a tree and is protected by skin, pod or similar.

Category 2 tree - Crops that are eaten raw, where the edible portion of the crop is grown in trees and are protected by skin, pod or similar.

Category 3 soil - Crops that are cooked before eating, where the edible portion of the crop is grown in the ground and is protected by skin, pod or similar.

Category 3 raised - Crops that are cooked before eating, where the edible portion of the crop is grown off the ground, but not in a tree and is protected by a skin, pod or similar.

Category 3 tree - Crops that are cooked before eating, where the edible portion of the crop is grown in trees and are protected by skin, pod or similar.



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Due Diligence Records

In most scenarios in UK law, you are innocent until proven guilty.

However, in food law, you are guilty and must prove that you or the company you work for is innocent.

This is the basis of Due Diligence Defence.

Due Diligence defence is defined as taking all reasonable steps by a person / company to avoid committing an offence.

Due diligence means that the food safety control systems are fully operating, checked and, where necessary, rectified.

Due diligence is the main defence under food safety law if a business is involved in a safety incident involving it's food which could lead to prosecution.

Many of the actions that you can take are practical measures. Make sure that you record down the actions you plan to take in the Small Growers Spreadsheet and on the Organic Fertiliser Record sheet.

Take pictures of control measures in place and make records of checks performed. This will all add to your due diligence evidence should there ever be an issue with tree nut contamination in your crops.



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