



RHS Help & Advice

Weedkiller in Manure

Contaminated farmyard manure can cause damage to vegetable crops in gardens and allotments. This contamination is caused by application of weedkillers to pastures, which are then eaten by stock.

Plants affected: Potatoes, tomatoes, beans, peas, but also other vegetable and salad crops. Some ornamental plants, including delphinium, phlox and roses.

What is it?

A recent surge of reports of weedkiller damage across many allotments and some gardens in the UK has been traced back to farmyard manures as the source of the contamination.

Symptoms

Typical symptoms include cupped leaves and fern-like growth on sensitive plants. The shoot tips become pale, narrow and distorted, with prominent veining on the foliage. Growth generally is stunted, leaving most crops unusable.

Cause

The damage is caused by hormone-type weedkillers, approved for use on grassland to kill broad-leaved weeds. The active ingredient responsible for most of the damage is aminopyralid, though clopyralid, found in certain lawn weedkillers as well as agricultural products, can also give similar results.

The herbicide binds strongly to plant material which when grazed by or fed to cattle and horses in feedstuffs such as silage or hay, can pass through the animals without breaking down. Manure from animals fed on treated grass contains chemical residues sufficient to damage susceptible crops. Bedding materials such as straw are less likely to be affected as aminopyralid does not currently have approval for use on cereal crops from which straw is made.

The weedkiller is bound to the lignin in grass in the manure and released as the grass, hay or silage decays. Once released it affects broadleaved plants. However, the weedkiller is broken down by soil bacteria and should all be eliminated by the following year.

Because the weedkiller is bound to lignin, only costly laboratory chemical analysis can detect weedkiller within manure. Even then, the residue levels are so low that detection of the weedkiller in the laboratory is not guaranteed.

Control

Plots already treated with contaminated manure: The Pesticide Safety Directorate (PSD) has investigated the risk to human health and concluded that produce from affected land is safe to eat. [For more information visit the PSD website](#)

The complexity of the supply chain means it is not always easy to trace the source of the contamination. You can attempt to do so by contacting the supplier of your manure in the first instance to discover which weedkillers were used and who the manufacturers are. The [PSD website](#) holds information on both amateur and professional chemicals.

Dow AgroScience, who manufacture aminopyralid-based products such as Forefront, is offering advice to gardeners and allotment holders. Contact ukhotline@dow.com or visit The [Dow AgroScience website](#). Information collated by the manufacturers will be passed to the Pesticide Safety Directorate.

To speed up the rate of breakdown of residues on contaminated land, rotovate or dig over the soil several times, preferably between summer and autumn when the soil is at its warmest. This ensures the manure is fully incorporated into the soil and increases microbial activity. Concentrate on mixing in pockets of manure, such as found at the bottom of manure-lined trenches. Residue levels in the soil peak at three weeks after digging before breaking down relatively rapidly. This means affected ground is safe to replant by the following spring.

Scrape off any loose manure used as a mulch around flowers, shrubs or fruit bushes. Return it to the suppliers or spread it on grassland. Failing this, put it in council refuse. Fruit trees and bushes damaged by contaminated manures are likely to survive and grow well next season. Feed the plants in the spring to encourage good cropping next year. Flowers such as phlox and delphinium that show symptoms should be cut back at the end of summer and also given a well-balanced feed next spring.

It is not advisable to compost ruined crops. If they cannot be incorporated into the soil, bag them up and put out with household refuse (NOT green waste collection). Seek advice from your council if they won't accept green waste in domestic refuse.

Stacked manure: Unfortunately, residues in manure can remain for extended periods, even up to two years. The best advice is to return the unused manure to the supplier for them to spread on grassland.

If this is not possible spread it on grassy areas. Well-rotted crumbly manure can be lightly spread on lawns in late winter. As a last resort, consign it to the council refuse.

Long term storage is also an option. The manure must be fully rotted down over several years before use.

When buying manure in the future: At the request of the manufacturers, products containing aminopyralid have been withdrawn from supply, sale and use while it (aminopyralid) is under investigation by the PSD. It is not illegal to still store such products. Even following withdrawal there is still likely to be contaminated manure on farms and stables that may be offered to gardeners. Therefore, gardeners should be cautious about accepting manure from sources that cannot give assurances that the manure has not come from animals fed on grass or forage treated with persistent hormonal weedkillers, especially aminopyralid products such as Forefront.

Don't stop using mulch. Organic mulches are essential to improving soil structure and soil moisture. If a reliable source of manure is not available, try using an alternative source of organic matter such as garden compost, leafmould, composted bark or composted green waste from your local council. Although it is possible that composted green waste may sometimes be made from raw materials that contain weedkiller, lawn mowings for example, we have not found this to be a problem. With increasing awareness of the risks associated with weedkiller residues in manure and composted green waste, this problem will hopefully decrease in the future.

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