

Legionnaire's disease in horticulture

Legionnaire's disease, or Legionellosis is an umbrella term used for diseases caused by legionella bacteria. The diseases range from the less concerning conditions of Pontiac fever and Lochgoilhead fever, to the far more serious Legionnaire's disease, a potentially fatal form of pneumonia. Legionnaire's disease can be caught by anyone but is a larger concern to at risk groups including the elderly, people suffering from chronic respiratory or kidney disease, diabetes or lung/heart disease and those with a suppressed immune system.



There are two strains particularly relevant to gardening and horticulture. *Legionella longbeachae* which can be found in compost, animal manure and other soil mixes and *Legionella pneumophila*, which is found in water. More detail on these can be found further down.

KEY AREAS FOR CARE AND CONCERN FOR GROWERS

- **Hosepipes** – stagnant water in infrequently used hosepipes left in the sunshine.
- **Water butts** – Water collected from roofs and drainpipes can stagnate in water butts, especially during warm seasons or in sunlight.
- **Irrigation systems** – sprinklers and misters can aerosolize contaminated water that can be inhaled.
- **Outdoor taps** – stagnant water in pipework carries a risk of harbouring Legionella
- **Water features** – garden centre water feature displays pose some risk.
- **Ponds** – Stagnant bodies of water such as ponds, warming up in the sunshine, and with pond life adding additional contamination.
- **Humidifiers** – mists can contain spores.
- **Hot tubs and pools** – gardens and garden centres containing or selling recreational pools should ensure water is changed frequently.
- **Potting soil and compost** – can contain *Legionella longbeachae* particles (a variant of legionnaires).



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THE MEDICAL BIT

Signs of infection with Legionnaire's from either source can be easy to confuse with having regular flu;

- High temperature, feverishness and chills
- Tiredness
- Cough
- Breathlessness
- Aches and pains
- Headache
- Nausea
- Diarrhoea
- Signs of mental confusion
- Pneumonia in more serious cases

Action point

If you suspect that you or a colleague's illness may be a consequence of your work, then you must tell your manager and/or health and safety representative who have a legal requirement to report cases of Legionnaires' disease to the health and safety executive.



Due to its similarity with other respiratory and flu like illnesses, a urine or blood test will be needed to confirm an infection with Legionnaires disease. The illness is treated with antibiotics and potentially admission to hospital if necessary. The incubation period between encountering the bacteria and developing symptoms is usually 5-6 days. Person to person spread does not occur.

LEGIONELLA LONGBEACHAE

A variant commonly found in soil, compost and potting mixes – inhalation of dust when handling or opening bags of compost can lead to infection and respiratory disease



Reduce the risk

- Ensure proper compost handling and avoid inhaling the dust upon opening compost bags.
- Where possible dampen dry compost before use, and avoid opening bags with your face over them, or in confined spaces.
- Masks can be useful when dealing with dry compost, turning compost heaps etc.
- Wear gloves and wash hands after handling compost.
- Avoid storage of compost in the warm environment of the greenhouse as this creates ideal conditions for growth of legionella



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LEGIONELLA PNEUMOPHILA

The more common of the two. *L. pneumophila* thrives in water systems like hoses and water butts. The bacteria are common in natural water systems but in low numbers. They can also be found in purpose-built water systems such as cooling towers, spa pools, reservoirs etc. Generally, the numbers are low enough that they do not pose a threat until certain conditions are met, which are favourable to rapid bacterial multiplication.



This is possible in any system where temperatures reach between 20–45°C, the water is slow moving, in bright sunlight, or allowed to stagnate, and where sediment and scale could be present.

The bacteria enter the lungs via inhalation of airborne water droplets containing legionella when using sprinklers, misting systems, humidifiers etc fed from these stagnant reservoirs.

Reduce the risk

- Empty the hose after use and store in a cool place. Flush any remaining water away when using for the first time after a period of a week or more.
- Clean water butts regularly and avoid using the water when temperatures are above 20°C. Can insulate to avoid heat gains, and do not use for sprinkler systems.
- Sprinklers, misters and humidifiers should be inspected and cleaned regularly, particularly in greenhouses and other indoor systems.
- Garden ponds can be considered a stagnant body of water and prone to heat gains. Pond life can add additional contamination. It is recommended to avoid installation of water fountains that create significant spray in warm areas, and to not use pond water for swimming, paddling and other recreational activities.

HEALTH AND SAFETY AND THE LAW

Home gardeners should be aware of the risks and mitigation of legionnaires disease for personal safety, however businesses with employees, volunteers and customers must also follow government health and safety protocols.

The Health and Safety at Work Act extends to risks from legionella bacteria and requires employers to identify and assess sources of risk, manage, prevent and control them and keep up to date records.



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The Control of Substances Hazardous to Health Regulations (COSHH) has a framework for management of bacteria like legionella.

These Regulations require employers to make a suitable and sufficient assessment of the risks from any work liable to expose employees to any substance hazardous to health, before that work is carried out. Employers are also required to assess the risks to other people not in their employment who may be affected by the work activity. They are also required to regularly review the risk assessment and make any necessary changes as a result of the review.



Government Information for employers and risks of Legionnaires disease can be found [here](#)

Legionella sampling kits are available to buy online and confirms the levels of the bacteria in your water system by sending samples for testing in a laboratory. Here, tests are run to determine how many colony-forming units of Legionella there are per litre of water (cfu/l). If over 100 cfu/l are found, water systems need more investigation. When the figure is over 1,000 cfu/l, immediate remedial action is required.



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