



LEGIONELLOSIS: WHAT YOU SHOULD KNOW IF YOU WORK WITH SOILS, COMPOST AND POTTING MIX

Introduction

If your work involves handling garden soils, compost and potting mixes, you need to be aware of the possible risk of contracting legionellosis, or Legionnaire's Disease. This fact sheet answers some questions you may have, and describes the health precautions you should take.

Questions about legionellosis

What is legionellosis?

It's a lung condition with symptoms similar to pneumonia. Its most common form is called Legionnaire's Disease, but there are also less severe forms of the disease (respiratory infections usually known as Pontiac Fever).

The early symptoms of legionellosis start with mild flu-like symptoms, including:

- muscle aches;
- headache;
- tiredness;
- chills;
- shortness of breath;
- loss of appetite;
- coughing; and sometimes
- stomach pain and diarrhoea.

If left untreated, the disease can progress to Legionnaire's disease, and require hospitalisation. In severe cases, death has resulted from contracting this disease.

The period between exposure and onset of illness for Legionnaire's Disease can vary between 2-14 days. For Pontiac Fever, the onset of illness usually occurs between 5 hours to three days.

What causes this type of illness?

Legionellosis is caused by bacteria (called *Legionella*) that occur naturally in the environment. The most common way that legionellosis enters the body is by breathing in dust or liquid droplets contaminated with the bacteria.

One strain of bacterium called *Legionella pneumophila* has been responsible for illnesses linked to air conditioning systems in buildings.



Another strain, called *Legionella longbeachae*, can be inhaled into the body when dust or mists from soils, potting mix or compost product are generated.

In 2010, New Zealand had 178 confirmed cases of legionellosis. 98 cases occurred where the legionellosis was contracted from an environmental source. Of these cases, 78 patients had reported contact with compost, potting mix, or soil.¹

Are some people more at risk than others?

The risk of contracting legionellosis increases with age, and most often affects people who smoke or drink heavily, have chronic lung disease or have underlying medical conditions that lowers their immune resistance to disease, such as diabetes, cancer or kidney failure. Drugs that lower immune resistance, such as steroids, also increase the risk of contracting legionellosis.

It's important for the illness to be diagnosed and treated promptly because of the possibility that health complications may develop.

How is Legionnaire's Disease treated?

Usually patients are put on a course of antibiotics. The illness responds readily to treatment. Antibiotics are not usually required for Pontiac Fever.

1. *Notifiable and Other Diseases in New Zealand: Annual Report 2010*. Population and Environmental Health Group, Institute of Environmental Science and Research Limited, Wellington, April 2011, page 36.

Can you become immune to it?

If exposed to *Legionella* you can contract a mild form of the disease without realising it, and your body builds up antibodies to resist the bacteria, which give immunity to future infection. However, this immunity is only specific to the particular strain of *Legionella* that you were exposed to – because there are approximately 40 different strains of *Legionella* species around, you could be immune to one strain but not another.

What should I do if I think I'm affected?

You should see your medical practitioner immediately. Your doctor may arrange for you to have blood, serum or sputum tests. Your doctor can give you further information and advice about legionellosis.

Health and Safety Precautions

To avoid the risk of contracting legionellosis from soils, compost and potting mix, here are the precautions you should take:

- Keep bags of potting mix stored out of direct sunlight. If stored in the sunlight, the temperature inside the bags can range from 20–40°C, making it an ideal ground for *Legionella* bacteria to grow.
- Water gardens and composts gently, using a low-pressure hose.
- When opening bags of composted potting mix, do so slowly, making sure the opening is directed away from your face.
- When potting plants, wet the soil to reduce dust.
- When working in greenhouses, potting sheds or indoors, make sure that the working area is well ventilated.
- Wash your hands carefully after handling soils.

If these precautions aren't practicable, you should consider wearing a disposable respirator (not a nuisance dust mask). The double-strap type with nose clip for secure fitment gives good protection (see picture 1).

Employers are responsible for providing respiratory protection and for training staff in its correct fitting and use.

Packaging on bags containing compost or soil mixes should have health warnings compliant with NZS 4454:2005 Composts, Soil Conditioners and Mulches, informing the user that:

- Occasionally, products like compost and potting mix may contain micro-organisms, which on rare occasions, can cause illness in humans
- Infections can be serious for the elderly and those with reduced immunity
- The following precautions should be taken:
 - » Avoid opening bags in enclosed areas
 - » Avoid inhaling the mix
 - » Always wear gloves and wash hands after use

See your doctor if you develop high fever, chills, breathlessness or cough.

Packaging on bulk materials should have similar health warnings, including:

- While working around bulk stockpiles, wear a mask to prevent inhaling the water vapour.

Bulk stores of compost and potting mix should also have signs prominently displayed nearby stating: "While working around bulk stockpiles, wear a mask to prevent inhaling the steam or vapour."



Photograph of a disposable respirator with double straps and nose-clip for secure face fitment.

