
Guidance on Legionella longbeachae

1. Summary of recently reported Scottish cases

An article published in February 2010 has linked three Scottish cases of disease in individuals who had been gardening with *Legionella longbeachae* in two 'potting composts' and a 'potting soil'. Composted material green material was an ingredient in two of the growing media products, but all three products contained other materials, some or all of which had not been heat-treated.

Although the potting media used were 'associated with' disease the cases of Legionnaires' disease, it has not been proven beyond any doubt that *L. longbeachae* bacteria in the potting media were the cause, nor whether such bacteria were present in the potting media before being used in their gardens.

Species of *Legionella* bacteria are native in the environment in the UK, being particularly associated with water. Many species are not known to adversely affect human health but some species can, such as *L. longbeachae*. Mechanisms of transmission from the source to humans appear to be inhalation of aerosolised contaminated water or contact with contaminated water or material (such as soil), such that *L. longbeachae* are subsequently inhaled or ingested.

Two individuals in the reported Scottish cases appeared to be more susceptible than a typical, less-than-58-year-old adult in good health; one was a smoker and another had underlying medical conditions that were risk factors for developing Legionnaires' disease.

Some of the previous cases of this disease that have occurred in other countries have been associated with gardening or potting mixes. In the UK, only nine cases of *Legionella longbeachae* have been reported since 1984, five of which occurred in Scotland, including the three cases referred to above. In a recent statement, the Growing Media Association (GMA) has estimated that in the UK during the past 10 years the public will have used around 750 million bags of growing media with no other similar incidents recorded.

Advised that 'any risks appear to be minimal', the GMA is nevertheless consulting with medical advisors to better understand the science around this issue and assess whether there is any causal connection. It will also working with Trading Standards to formulate some common sense advice to be printed on bags of growing media (covering hygiene matters).

The GMA's position statement can be read at
http://www.growingmedia.co.uk/index.asp?c_idno=3622&m_idno=1312

2. Composted materials

2.1 Sanitisation

Until more information has been reviewed about particular aspects of the natural environment and man-made environments in which species of *Legionella* bacteria are likely to be found in the UK, it is difficult to assess the likelihood of their presence in materials supplied for composting.

AfOR recommends that composted materials are made according to the requirements of PAS 100. The phase of high temperature composting should be sustained for sufficient time to kill *Legionella* bacteria, throughout each batch of compost production. Composters should check that their sanitisation criteria are at least as stringent as one of the time and temperature examples provided in Table 1, and take into account any extra time that may be needed for practices that ensure that all material in the batch achieves a sufficient temperature for a suitable minimum time.

Table 1. Examples temperatures and periods of time that kill *Legionella* bacteria

Temperature, in °C	Temperature, in °F	Time until kill
66	151	2 minutes
60	140	32 minutes
55	131	5 to 6 hours

Exposure of all material in each composting batch should be achieved by a means suited to the composting process. For example, in turned windrow systems surface zone material should be placed into the core zone of the batch each time it is turned. Other types of composting system contain each sanitising batch within an enclosed space, designed to ensure that all of the batch achieves the target temperature for the minimum necessary time before it is removed from that space.

2.2 Liquor and leachate

Liquor is a mixture of leachate from the composting material and rainwater run-off from composting site surfaces. Leachate is water that has percolated through the contents of a composting pile; originating from moisture released from composting materials as they break down, from precipitation (e.g. rain or melted snow) that has seeped through the pile or from another source of water that may be added to help maintain moisture in batches of composting material.

Until risks associated with the potential presence of *Legionella longbeachae* in liquor / leachate have been investigated, composters should not apply untreated or treated liquor / leachate to any composting batch unless it will subsequently be wholly subjected to one of the temperature and time combinations referred to in Table 1 above.

2.3 Health and Safety at composting facilities

As part of initial and then regular health and safety audits, all water sources in on-site and near-site locations that should be assessed for risk of infecting people who work on or visit the composting site. Assessment should also include any on-site practices or near-site activities that affect risk of infecting people who work on or visit the composting site.

Such water sources and practices should also be included in Hazard Analysis and Critical Control Point planning in connection with the compost's fitness for purpose. PAS 100 requires that compost is fit for its intended purposes, and pathogens that can affect human health are amongst the hazards that must be considered.

AfOR seeks to find out whether commercially available laboratory services are available for determining the presence or absence of *Legionella* species, or specifically *Legionella longbeachae*, in liquid samples and in solid samples. If and when available, such sample test services would support quantitative risk assessment. In the short term, risk assessment may have to be qualitative, taking into account published scientific information available.

2.4 Labelling composted materials

In-line with product safety regulations, PAS 100 requires that labelling of composted material includes a warning about risks when handling the material. AfOR's guidance on a warning statement to include in labelling reads as follows:

'SAFE HANDLING AND USE

Every effort has been made to ensure this compost contains no germs, sharp fragments, toxins or regenerative plant parts. However, the compost producer cannot guarantee they will never be present. As with all products of this type, wear gloves when handling and wash hands after use. During handling avoid inhaling any dust or water vapour or droplets from it, or ingesting any of it.'

Composters should check that their composted material's labelling carries adequate warnings.

~ End of guidance ~