

LEGIONELLOSIS - NEW ZEALAND: (CANTERBURY) POTTING SOIL, ALERT

A ProMED-mail post <<http://www.promedmail.org>>

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Source: NZNews.yahoo.com, Newstalk ZB report [edited] <<http://nz.news.yahoo.com/a/-/top-stories/8646467/warning-after-legionnaires-disease-spike/>>

A record spike in the number of people with legionnaires' disease has prompted the Canterbury District Health Board to issue a warning about the dangers associated with potting mix and compost.

Canterbury had a record 62 cases of legionnaires' disease last year [2010], 22 of which were in December alone -- the highest ever in a single month. Medical officer of health Dr Alistair Humphrey says two thirds of the cases were a type of legionella associated with gardening soils.

December's 22 cases compare with 8 in November 2010. 3 patients required intensive care and one died. Altogether 4 people died of legionnaires' [disease] in Canterbury last year [2010], and one person remains quite unwell in intensive care.

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[The news release above presumably refers to *Legionella longbeachae* when it says that two thirds of the cases of legionnaires' disease were caused by a type of legionella associated with exposure to gardening soils. Cases of legionellosis due to *L. longbeachae* associated with potting soil have been described in the USA (see ProMED-mail post Legionellosis, potting soil - USA: May-Jun 2000 20000904.1503) and Japan (Koide M, Saito A, Okazaki M, et al: Isolation of *Legionella longbeachae* serogroup 1 from potting soils in Japan. Clin Infect Dis 1999; 29(4): 943-4; <<http://cid.oxfordjournals.org/content/29/4/943.long>>), as well as Australia, New Zealand, and the UK (see below). Non-sterilized potting soil apparently contains a mixture of bacteria and free-living amoebae and elevated storage temperatures may foster the intra-amoebic growth of *L. longbeachae* in the potting soil (Ross IS, Mee BJ, Riley TV. *Legionella longbeachae* in Western Australian potting mix. Med J Aust 1997; 166(7): 387).

The following has been extracted from moderator ML's comments in ProMED-mail post Legionellosis, fatal - UK: (Wales) 20100914.3321:

Legionellosis is an infectious disease caused by a Gram negative bacillus of the genus *Legionella*, most commonly *Legionella pneumophila*. Legionnaires' disease is the acute pneumonic form of the disease; more than 70 per cent of cases are due to *L. pneumophila* serogroup 1, except in Australia and New Zealand. For Australia and New Zealand, *L. pneumophila* serogroup 1 has accounted for only 45.7 per cent of cases of community-acquired legionellosis, and *Legionella longbeachae* has accounted for 30.4 per cent of cases (Yu VL, et al: Distribution of *Legionella* species and serogroups isolated by culture in patients with sporadic community-acquired legionellosis: an international collaborative survey. J Infect Dis. 2002; 186(1): 127-8; <http://legionellalaboratory.com/lp_distribution.pdf>).

Pontiac fever is a non-pneumonic form of legionellosis that is less severe than legionnaires' disease. Pontiac fever takes its name from an outbreak in 1968 in Pontiac, Michigan, USA. Risk factors for Legionnaires' disease include age over 50 years, cigarette smoking, diabetes, chronic heart or lung disease, and immunosuppression.

Legionnaires' disease, and presumably Pontiac fever, is acquired by inhalation of an infectious dose of aerosolized legionella. Usually a building's contaminated water system is incriminated as the source. Legionella are found primarily in the hot water portion of plumbing systems and in cooling towers. Water temperatures of 25-40 deg C (77-104 deg F) support the highest concentrations of the organism in water storage tanks of plumbing systems. Aerosolization of the contaminated warm water can occur in showers, spa pools, sprays in groceries, fountains, and cooling towers.

In contrast, in Australia and New Zealand, legionnaires' disease has been associated with gardening and exposure to potting mix, compost, and soil; in these countries *L. longbeachae* has been commonly found in potting mix, compost, and soil, and cultured from the respiratory specimens of patients with sporadic community-acquired pneumonia. Cases of community-acquired pneumonia due to *L. longbeachae* also have been reported sporadically in Europe (<<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19497>>). Indeed, legionnaires' disease due to *L. longbeachae* in a gardener was reported recently in Scotland (<<http://www.bbc.co.uk/news/health-11167176>>). However, legionella urinary antigen test, which is commonly used to diagnose legionnaires' disease, is only valid for detection of *L. pneumophila* serogroup 1 and therefore other samples must be collected from a patient suspected to be infected with *Legionella* other than *L. pneumophila* serogroup 1 (such as, sputum or bronchoalveolar wash obtained during bronchoscopy) for detection of *Legionella* by culture using special media.

Genotyping of patient and environmental isolates has become a helpful tool to establish transmission pathways. The predominance of one genotype in patient specimens suggests transmission from a common source. Because legionella may be found in environmental samples without linkage to any cases of legionellosis, the actual causative infectious reservoir should be demonstrated by means of genotyping methods (see <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC86783/>> and <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2730281/>>).

The Canterbury region of New Zealand is located on the South Island; its main city is Christchurch. For a map of this region see <http://en.wikipedia.org/wiki/Canterbury_Region>. The HealthMap/ProMED-mail interactive map of New Zealand can be accessed at <<http://healthmap.org/r/0muh>>. - Mod.ML]