

Green waste collection: Health issues



This 'good practice' guidance was written in consultation and with the support of the Waste Industry Safety and Health Forum (WISH). It does not aim to be comprehensive but gives examples of good practice within the industry.

It is written for managers, supervisors and operators working with recyclable vegetation ('green waste') in the waste management and recycling industries. It aims to comment on and help reduce the health risks associated with the collection of green waste.

Green waste dust

When green waste is left, microbes grow quickly in the warm, moist, environment.

Collecting and handling green waste creates bioaerosols (microbes suspended with dust in the air) and these are breathed in when working.

Research¹⁻¹⁶ suggests that the health risks of breathing in these microbes from handling green waste are no greater than those from handling any other mixed household waste.

Compared to other waste handling work, green waste collectors are less likely to breathe in large concentrations of bioaerosols because:

- outdoor work helps aerosols to disperse;
- automated bin emptying equipment, where used, can separate workers from exposure; and
- the amount of material being handled at any one time is relatively small.

Breathing dusts and bioaerosols

All reasonably practicable methods should be used to prevent the breathing of dusts and bioaerosols by adopting:

- systems of work that minimise the amount of dust becoming airborne;
- working practices that minimise dust and bioaerosols being breathed in.

Systems of work

The following systems of work, used where reasonably practicable, can help to minimise the dust clouds created:

- Using compostable green waste sacks which do not need to be removed from the waste stream before composting.
- Avoiding working methods which involve double tipping (eg emptying bags into bins which are then tipped into the vehicle).

- Avoiding using sacks and bins that are designed to be shoulder carried (eg 'sleps', 'skips' and other wide mouthed shoulder carried bins). These can create dust clouds when emptying.
- Avoiding working methods which encourage tipping from unnecessarily high heights (eg hand-loading green waste into bin lift equipped vehicles).
- Fitting and maintaining rubber/plastic strip curtains to larger container chambers. These can help to contain any dust clouds created during tipping.

Working practices

To minimise dust and bioaerosols entering the lungs, employees should try to:

- Avoid opening sacks and containers. As far as possible, keep bags closed while carrying them, and open them only prior to tipping.
- Avoid leaning over bags and bins which are being tipped. As far as possible, face away from the tipping point.
- Avoid 'loitering' at the back of the vehicle after unloading bags and bins.

Finally, employees might want to consider wearing suitable respiratory protective equipment. Such equipment should always be available to employees wishing to use it. It should be worn correctly in accordance with the manufacturer's instructions, and be kept clean and well maintained.

Other health hazards

The following table illustrates other health hazards associated with green waste collection.

<i>Problem</i>	<i>Cause</i>	<i>Route into the body</i>	<i>Preventive measures</i>
Infections			
Rat fever (leptospirosis)	Rat urine	Cuts and grazes	Good hygiene
Tetanus (lockjaw)	Soils and organic material	Deeper cuts and wounds	Wear protective clothing
Botulism	Soils	Ingestion: hand to mouth contact	Cover cuts and grazes
Pasteurella multocida	Dog bites	Skin pierced by bite	Clean up any wounds quickly and apply antiseptic
Chemicals			
Pesticide and insecticide residues	Garden sprays Slug killers etc	Cuts, grazes, hand to mouth contact	Cover up Wear protective clothing Good hygiene
Skin problems			
Premature skin ageing	Excessive exposure to strong sunlight	Through unprotected skin	Cover up
Skin cancer			Wear hats and long sleeved shirts Use sunscreen

The Waste Industry Safety and Health (WISH) Forum exists to communicate and consult with key stakeholders, including local and national government bodies, equipment manufacturers, trade associations, professional associations and trades unions. The aim of WISH is to identify, devise and promote activities that can improve industry health and safety performance.

References

- 1 Bohnel H, Lube K 'Clostridium botulinum and bio-compost. A contribution to the analysis of potential health hazards caused by bio-waste recycling' *Journal of Veterinary Medicine Series B* 2000 **47** (10) 785-795
- 2 *Mapping health and safety standards in the UK waste industry* RR240 HSE Books 2004 ISBN 0 7176 2865 5 www.hse.gov.uk/research/rrhtm/rr240.htm
- 3 Defra Guidance for Waste Collection Authorities on the Household Waste Recycling Act 2003 April 2005
www.defra.gov.uk/environment/waste/legislation/hwra/hwra-guidance.pdf
- 4 Friends of the Earth *Doorstep recycling – a good practice guide and local authority case studies* 2004
www.foe.co.uk/resource/reports/doorstep_recycling_good_practice.pdf
- 5 Gladding T, Thorn J, Stott D 'Organic dust exposure and work related effects among recycling workers' *American Journal of Industrial Medicine* 2003 **43** (6) 584-591
- 6 Heldal KK, Eduard W 'Associations between acute symptoms and bioaerosol exposure during the collection of household waste' *American Journal of Industrial Medicine* 2004 **46** (3) 253-260
- 7 Heldal KK, Halstensen AS, Thorn J et al 'Upper airway inflammation in waste handlers exposed to bioaerosols' *Occupational and Environmental Medicine* 2003 **60** (6) 444-450
- 8 Martens W, Bohm R, Fessel A et al 'Microbial emissions in collection of residential garbage' *Schriftenr Ver Wasser Boden Lufthyg* 1999 **104** 503-521
- 9 Neumann HD, Balfanz J 'Microbial exposure in collection of residential garbage - results of field studies' *Schriftenr Ver Wasser Boden Lufthyg* 1999 **104** 533-545
- 10 Neumann HD, Balfanz J, Becker G et al 'Bioaerosol exposure during refuse collection: results of field studies in the real-life situation' *The Science of the Total Environment* 2002 **293** (1-3) 219-231
- 11 Reiss J 'Moulds in containers with biological wastes' *Microbiological Research* 1995 **150** (1) 93-98
- 12 Smith GR, Young AM 'Clostridium botulinum in British soil' *The Journal of Hygiene (London)* 1980 **85** (2) 271-274
- 13 *Occupational and environmental exposure to bioaerosols for composts and potential health effects: A critical review of published data* RR130 HSE Books 2003 ISBN 0 7176 2707 1 www.hse.gov.uk/research/rrhtm/rr130.htm

14 Thorn J 'Seasonal variations in exposure to microbial cell wall components among household waste collectors' *The Annals of Occupational Hygiene* 2001 **45** (2) 153-156

15 Weinrich M, Vissienon T, Kliche R et al 'Nature and frequency of the existence of mould fungi in garbage cans for biological waste and the resultant airborne spore pollution' *Berl Munch Tierarztl Wochenschr* 1999 **112** (12) 454-458

16 Wouters IM, Douwes J, Doekes G et al 'Increased levels of markers of microbial exposure in homes with indoor storage of organic household waste' *Applied and Environmental Biology* 2000 **66** (2) 627-631

Further information

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165 Fax: 01787 313995 Website: www.hsebooks.co.uk (HSE priced publications are also available from bookshops and free leaflets can be downloaded from HSE's website: www.hse.gov.uk.)

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566 e-mail: hseinformationservices@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This document is available web only at www.hse.gov.uk/pubns/waste02.pdf

© *Crown copyright* This publication may be freely reproduced, except for advertising, endorsement or commercial purposes. First published 12/05. Please acknowledge the source as HSE.