

Modifications to the Draft Fourth Edition of “A Code of Practice for the Control of Bed Bug Infestations in Australia”.

September 2010.

[Note: this lists the major modifications and does not include changes in formatting, spelling and minor grammatical changes.]

Page 1: The following were updated; edition number, date, ISBN.

Section 1, *Preface to the Draft Fourth Edition:* Revised and updated.

Section 4, *Limitations of the CoP:* Added to the end of the first paragraph; “If a product within the CoP is being promoted in a manner based on unsubstantiated claims, the company will be seen not to be promoting ‘best practice’ in bed bug management and the product may be removed from subsequent editions of the CoP.”

Section 6.2, *The Client:* Paragraph rearranged, some minor grammatical changes, some words added.

Section 6.3, *Accommodation Industry:* New Section under ‘Required Philosophies’.

Section 7.1, *Pest Managers:* Added to second last paragraph; “Companies and Pest Managers who undertake bed bug management should review industry developments on a regular basis. It is preferable that only sales staff who have practical experience in bed bug management provide quotes on bed bug jobs, to avoid inaccurate costings.”

Page Section 7.2, *Accommodation/Housekeeping Staff:* Added to the end of this section; Other staff who may have to deal with affected guests or those responsible for ensuring that control of infestations are undertaken, should also receive specific training in bed bugs. This may include front of house, managerial and maintenance staff.

Section 8.2.1, *Guest Complaint:* Added to last dot point, second sentence; “Inexperienced individuals may not readily detect an infestation if it is in a poorly accessible location such as behind a bed head.”

Section 8.2.1, *Guest Complaint:* Added within third dot point; “within the incident report”

Section 9, *Occupational Health and Safety:* Split into two sections.

Section 9.1, *Pest Manager*: Added as last paragraph; "Pest Managers should minimize the risk of exposure to bed bug allergens by only using vacuums fitted with HEPA filters (Section 17.1.3) and by wearing dust masks particularly in heavy infestations or dirty environments. Pest Managers should also undertake measures to minimise the risk of spreading bed bugs on their own belongings and clothing. It should be company policy that white clothing is worn, which enables bed bugs to be spotted more easily, and disposable overalls and shoes should be used which are placed into sealable plastic bags at the completion of treatment and labelled for disposal. Spare clothing should be carried and all worn clothing should be placed into sealable plastic bags, and subsequently laundered as described in Section 17.1.4. All equipment should be stored in sealable plastic containers."

Section 10, *Choosing a Pest Manager*: Added after fourth dot point; "Request past management plans for similar situations (the Pest Manager must ensure names are removed for confidentiality)."

Section 10, *Choosing a Pest Manager*: Added to tenth dot point; "It is important that individuals rather than the company should have bed bug training."

Section 12.2, *Bed Bug Indications*: Second dot point amended to; "Faecal spotting. This is digested blood defaecated by the bed bugs. It may be initially observed on the sheets, but will be commonly noticed along the mattress seams and other places where bed bugs hide. On light coloured surfaces individual faecal marks appear as small dark round spots, however the spotting may be in colour from cream, through grey to almost black. Generally the spotting, will occur in groups and appear as splotches of dark marks (see Figures). Note that the faeces of nymphal cockroaches appear similar, however bed bug blood spotting tends to occur in groups as the insect by nature aggregates. Red blood coloured spots or smears on the sheets may occur which can be the result of bed bugs passing sera, or engorged bugs being squashed by movements of the sleeping host."

Section 14.2.4, *Bed Bug Detection Dogs*: Abbreviation 'NESDCA' corrected.

Section 14.2.4, *Bed Bug Detection Dogs*: Added at the end of the second paragraph; "The National Pest Management Association of America (NPMA) has recently defined standards for the certification of bed bug detection dogs and their handlers (NPMA 2011)."

Section 16: Title change to "Bed Bug Management Plans".

Section 16.1, *Proactive Management Plan*: New section.

Section 16.2, *Eradication Management Plan*: Moved from 16.1 and renamed "Eradication Management Plan".

Section 16.2, *Eradication Management Plan*: Added to the second sentence; "This plan can be seen as a one off treatment regimen as opposed to a long-term proactive management plan."

Section 16.2, *Eradication Management Plan*: New dot point; "For commercial dwellings and/or managed facilities such as public housing, a review of past bed bug infestations in the building. It may be necessary to speak to staff and tenants in order to provide a complete history of bed bug activity."

Section 16.2, *Eradication Management Plan*: New dot point; "Realistic expectations of the treatment."

Section 17.1.2, *Disposal of Infested Items*: Change heading title from 'Hygiene' to 'Disposal of Infested Items'.

Section 17.1.2, *Disposal of Infested Items*: First sentence amended to; "Reducing the overall biomass of a bed bug infestation can be achieved through discarding infested furnishing, although complete control will not be achieved."

Section 17.1.2, *Disposal of Infested Items*: Added second last paragraph; "Disposal of items should be co-ordinated with waste disposal collection."

Section 17.1.3, *Physical Removal*: Vacuum cleaner image deleted as this did not contain a HEPA filter.

Section 17.1.3, *Physical Removal*: Section amended to; "The allergens from bed bugs are known to trigger asthmatic reactions and dispersal of the allergens can occur through vacuuming. Repeated exposure to the allergens can lead to a sensitisation thereby increase the risk of adverse respiratory effects, thus it is important that a vacuum machine fitted with a HEPA filter is used to protect the health of the client and the Pest Manager."

Section 17.1.4, *Heat*: Subheadings added.

Section 17.1.5, *Thermal Heating*: New section.

Section 17.1.5, *Steam*: Added to fifth paragraph; "However, heat penetration into the surface being treated will not be as great."

Section 17.1.6, *Cold*: Added; "Many modern freezers are of the 'frost-free' type and go through cycles of varying temperatures. As a result, bed bugs will require a much longer time in the freezer to be killed, even up to several days."

Section 17.1.9, *Bed bug Traps/Barriers*: Added; "The use of sticky tapes for the monitoring of bed bugs have been found ineffective (Doggett *et al.* 2011). Bed bugs tend to react negatively to gels and other sticky surfaces, and avoid capture."

Section 17.1.9, *Bed bug Traps/Barriers*: Minor wording change to paragraph beginning 'The 'Climbup Interceptor'.

Section 17.1.9, *Bed bug Traps/Barriers*: last paragraph, discussion on BB Secure Ring added.

Section 17.2.1, *Insecticide Application & Situational Choices*: Added to the end of the first paragraph; "However, due to the problems of insecticide resistance, registration of a product by the APVMA is not proof of efficacy as the APVMA does not require that efficacy data is provided on modern insecticide resistant bed bug strains."

Section 17.2.1, *Insecticide Application & Situational Choices*: Amorphous silica (Diatomaceous Earth Dust) added to the list of insecticide dusts now registered in Australia.

Section 17.2.3, *Insecticide Efficacy*: First paragraph amended to reflect newly registered products.

Section 17.2.3, *Insecticide Efficacy*: Amorphous Silica (Diatomaceous Earth Dust), Chlorfenapyr and Propoxur added to table.

Section 17.2.3, *Insecticide Efficacy*: First sentence amended to; "However, the OPs and some carbamates (notably propoxur) have use limitations."

Section 17.2.3, *Insecticide Efficacy*: Efficacy discussion on amorphous silica (Diatomaceous Earth Dust) included.

Section 17.2.3, *Insecticide Efficacy*: Second last paragraph added: "In 2010, Phantom Insecticide was registered in the Australia for the control of bed bugs. Published efficacy data have demonstrated indifferent results; while one laboratory investigation in the US found that it would slowly kill all bed bugs exposed to the product, another found the product so ineffective that the treated bed bugs mated and laid eggs, with many of the hatching nymphs surviving. A third laboratory trial, from Australia, found that the product was

unable to kill any bed bug strain, even those resistant to the pyrethroids (Doggett *et al.* 2011). Two field investigations have also demonstrated poor efficacy; in one of the trials complete control was not achieved over five months despite repeated applications with the product. In light of the generally poor published efficacy results, the use of Phantom Insecticide against bed bugs is not recommended."

Section 18.1, *Client*: Minor wording changes in first sentence.

Section 19.1.2, *Eradication Declaration*: New Section.

Section 19.1.1, *Measurement of Success*: Added to end of first paragraph; "All adjoining rooms must be inspected; an infestation in these rooms may indicate a control failure."

Section 20.1, *Bed Bug Population Dynamics*: Added to first paragraph, third sentence; "It should be noted that this is a general path; bed bugs could spread soon after introduction even though the population has yet to substantially grow."

Section 21.2, *Rental Accommodation*: Some rewording.

Section 22, *Definitions*: Definition added for 'Bed Bug Foundation', 'Best Practice', 'Due Diligence' and 'NPMA'.

Section 23, *References and Further Reading*: Added;

1. Doggett S.L., Orton C.J., Lilly D.G. and Russell R.C. 2011. **Bed bugs - a growing problem worldwide**. *Australian and international trends update and causes for concern*. Australian Environmental Pest Managers Association, NSW Conference 2011. Session 2A, 2nd June 2011, Bicentennial Park, Homebush Bay, Sydney. 24pp. Available from: http://medent.usyd.edu.au/bedbug/papers/aepma_2011_doggett.pdf

2. Madge, O. 2011. **European Code of Practice, Bed Bug Management; Bed Bug Foundation**: London, UK, p. 36. Available online: www.bedbugfoundation.org/downloads/45632_BedBug_ECoP_v9_forWeb.pdf

3. NPMA. 2011. **Bed bugs best management practices**. *The National Pest Management Association of American*. Available online: http://www.npmapestworld.org/publicpolicy/documents/NPMABedBugBMPAPPROVED20110124_prettified.pdf

Section 24, *Acknowledgements*: Acknowledgments updated.

Section 25, *Potential New Insecticides*: Entire section as appeared in the 3rd edition of the CoP deleted.

Section 25, *The CoP Working Party*: Membership updated.

Section 26.1, *Mattress Encasements*: Mattress Safe encasements supplier details changed.

Section 26.2, *Miscellaneous*: Subheading changed, supplier detailed moved from 27.1.

Section 29, *Registered Pesticides for Bed Bug Control*. Unregistered products removed, newly registered products added. For emphasis the following is now bold and the 'not' underlined; "**i.e. registration by the APVMA is not proof of efficacy**". "Not Stated" under 'Approved Use', is now defined.