

## **Cover Page**



## Ohio Statewide Bed Bug Survey

1.

1. In which Ohio county is your business located? If your company has more than one branch, please answer only for the branch at which you are located. If you are located out-of-state, please circle 89-Out-of-State. (please circle ONE ONLY)

|               |              |              |               |             |                 |
|---------------|--------------|--------------|---------------|-------------|-----------------|
| 1-Adams       | 16-Coshocton | 31-Hamilton  | 46-Logan      | 61-Noble    | 76-Stark        |
| 2-Allen       | 17-Crawford  | 32-Hancock   | 47-Lorain     | 62-Ottawa   | 77-Summit       |
| 3-Ashland     | 18-Cuyahoga  | 33-Hardin    | 48-Lucas      | 63-Paulding | 78-Trumbull     |
| 4-Ashtabula   | 19-Darke     | 34-Harrison  | 49-Madison    | 64-Perry    | 79-Tuscarawas   |
| 5-Athens      | 20-Defiance  | 35-Henry     | 50-Mahoning   | 65-Pickaway | 80-Union        |
| 6-Auglaize    | 21-Delaware  | 36-Highland  | 51-Marion     | 66-Pike     | 81-Van Wert     |
| 7-Belmont     | 22-Erie      | 37-Hocking   | 52-Medina     | 67-Portage  | 82-Vinton       |
| 8-Brown       | 23-Fairfield | 38-Holmes    | 53-Meigs      | 68-Preble   | 83-Warren       |
| 9-Butler      | 24-Fayette   | 39-Huron     | 54-Mercer     | 69-Putnam   | 84-Washington   |
| 10-Carroll    | 25-Franklin  | 40-Jackson   | 55-Miami      | 70-Richland | 85-Wayne        |
| 11-Champaign  | 26-Fulton    | 41-Jefferson | 56-Monroe     | 71-Ross     | 86-Williams     |
| 12-Clark      | 27-Gallia    | 42-Knox      | 57-Montgomery | 72-Sandusky | 87-Wood         |
| 13-Clermont   | 28-Geauga    | 43-Lake      | 58-Morgan     | 73-Scioto   | 88-Wyandot      |
| 14-Clinton    | 29-Greene    | 44-Lawrence  | 59-Morrow     | 74-Seneca   | 89-Out-of-State |
| 15-Columbiana | 30-Guernsey  | 45-Licking   | 60-Muskingum  | 75-Shelby   |                 |

2. What year was your company (branch office) established/licensed in Ohio? (please enter 4-digit year)

3. How many employees does your company (branch office) currently have? (please enter number)

4. Do you provide treatment services for bed bugs? (please circle)

Yes

No (If No, please skip to Question 30)

5.

**In which Ohio counties do you perform bed bug work? (please circle each that is applicable)**

**Please indicate the approximate percentage of your bed bug work that is done in each county that you selected; you should insert the percentage in the box located after each selected county. (Please note that all the percentages in the table must sum to 100%.)**

|               |  |              |  |              |  |               |  |               |  |
|---------------|--|--------------|--|--------------|--|---------------|--|---------------|--|
| 1-Adams       |  | 19-Darke     |  | 37-Hocking   |  | 55-Miami      |  | 73-Scioto     |  |
| 2-Allen       |  | 20-Defiance  |  | 38-Holmes    |  | 56-Monroe     |  | 74-Seneca     |  |
| 3-Ashland     |  | 21-Delaware  |  | 39-Huron     |  | 57-Montgomery |  | 75-Shelby     |  |
| 4-Ashtabula   |  | 22-Erie      |  | 40-Jackson   |  | 58-Morgan     |  | 76-Stark      |  |
| 5-Athens      |  | 23-Fairfield |  | 41-Jefferson |  | 59-Morrow     |  | 77-Summit     |  |
| 6-Auglaize    |  | 24-Fayette   |  | 42-Knox      |  | 60-Muskingum  |  | 78-Trumbull   |  |
| 7-Belmont     |  | 25-Franklin  |  | 43-Lake      |  | 61-Noble      |  | 79-Tuscarawas |  |
| 8-Brown       |  | 26-Fulton    |  | 44-Lawrence  |  | 62-Ottawa     |  | 80-Union      |  |
| 9-Butler      |  | 27-Gallia    |  | 45-Licking   |  | 63-Paulding   |  | 81-Van Wert   |  |
| 10-Carroll    |  | 28-Geauga    |  | 46-Logan     |  | 64-Perry      |  | 82-Vinton     |  |
| 11-Champaign  |  | 29-Greene    |  | 47-Lorain    |  | 65-Pickaway   |  | 83-Warren     |  |
| 12-Clark      |  | 30-Guernsey  |  | 48-Lucas     |  | 66-Pike       |  | 84-Washington |  |
| 13-Clermont   |  | 31-Hamilton  |  | 49-Madison   |  | 67-Portage    |  | 85-Wayne      |  |
| 14-Clinton    |  | 32-Hancock   |  | 50-Mahoning  |  | 68-Preble     |  | 86-Williams   |  |
| 15-Columbiana |  | 33-Hardin    |  | 51-Marion    |  | 69-Putnam     |  | 87-Wood       |  |
| 16-Coshocton  |  | 34-Harrison  |  | 52-Medina    |  | 70-Richland   |  | 88-Wyandot    |  |
| 17-Crawford   |  | 35-Henry     |  | 53-Meigs     |  | 71-Ross       |  |               |  |
| 18-Cuyahoga   |  | 36-Highland  |  | 54-Mercer    |  | 72-Sandusky   |  |               |  |

6. **In which of the following sites does your company (branch) treat for bed bugs, and approximately what percentage of your overall bed bug work is done in each? (Please note that percentages must sum to 100%.)**

| Site  | % | Site   | % |
|---|---|--|---|
| Hotels/motels                               |   | College dormitories                              |   |
| Apartments/condos--government subsidized    |   | Hospitals/outpatient facilities/doctor's offices |   |
| Apartment/condos--non-government subsidized |   | Commercial/office buildings                      |   |
| Single family homes                         |   | Vehicles (train/bus/taxi/airplane/etc.)          |   |
| Nursing homes                               |   | Other  |   |
| Schools/day care centers                    |   |  |   |

7. Do you have call tracking? (please circle one)      Yes      No

8. How many total calls did you receive regarding treatment for bed bugs during each of the following years (2005-2011)? Note, if you do not have call tracking, please estimate the number of calls. (Please check one category for each year.)

| # Calls<br>Year           | 0                        | 1-10                     | 11-50                    | 51-100                   | 101-500                  | 501-1000                 | 1001-2000                | 2001-3000                | 3001-4000                | 4001-5000                | >5000                    | Don't Know               |
|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2005                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2006                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2007                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2008                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2009                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2010                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2011<br>(through June 30) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

9. Approximately what percentage of your customers that request bed bug work actually have a pest other than bed bugs (misdiagnosed by customers)?  (please round to nearest whole percent)

10. What are the most common insects or things that your customers have misdiagnosed as bed bugs?

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11. In your estimation, what percentage of your customers have attempted do-it-yourself treatment(s) for bed bugs? (Please circle one from each row)

|   |    |       |        |        |        |      |
|---|----|-------|--------|--------|--------|------|
| Before hiring you   | 0% | 1-10% | 11-25% | 26-50% | 51-75% | >75% |
| While you are still conducting the customer's bed bug job | 0% | 1-10% | 11-25% | 26-50% | 51-75% | >75% |

12. If you answered a percentage greater than 0% above, how much do you estimate that your customers spend, on average per year, for do-it-yourself bed bug products/treatments? (please round to nearest dollar) \$

13. In your estimation, what percentage of your customers have misused products in an attempt to kill bed bugs? *(please circle one)*

0%                      1-10%                      11-25%                      26-50%                      51-75%                      >75%

14. If you are aware of customers misusing products for bed bugs, what are the three most common products being misused?

Product 1

Product 2

Product 3

15. What percentage of your customers have disposed of their furniture in their efforts to control bed bugs? *(please circle one)*

0%                      1-10%                      11-25%                      26-50%                      51-75%                      >75%

16. If you answered a percentage greater than 0% above, to what extent are your customers using the following procedures to dispose of bed bug-infested furniture? *(please check one per row)*

|  | Never                    | Rarely                   | Sometimes                | Often                    | Always                   |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Items are wrapped prior to disposal  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Items are treated prior to disposal  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Prior to disposal, items are ripped, damaged, or otherwise defaced to prevent re-use | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Items are placed for normal trash pick-up  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Items are taken to the dump by the customer or their designee                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Items are given away or sold to someone else   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

17. To what extent is your company using the following methods/devices to detect bed bugs? *(please check one per row)*

|   | Never                    | Rarely                   | Sometimes                | Often                    | Always                   |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Visual inspection   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Active monitoring devices (traps using heat and/or carbon dioxide [CO <sub>2</sub> ]) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Glueboards or sticky traps  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Pitfall traps (typically placed underneath each bed leg)                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

18. How many treatments for bed bugs (individual residence, individual unit or apartment treated within an apartment building, company office treated within a larger building, hotel room, etc.) did your company (branch office) conduct during each of the following years (2005-2011)? Note, if you do not have exact numbers, please estimate the number of treatments. *(Please check only one box for each year)*

| # Calls<br>Year           | 0                        | 1-10                     | 11-50                    | 51-100                   | 101-500                  | 501-1000                 | 1001-2000                | 2001-3000                | >3000                    | Don't Know               | Did not provide trtmts   |
|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 2005                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2006                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2007                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2008                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2009                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2010                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2011<br>(through June 30) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

19. On average, how many total visits per infestation are needed to achieve bed bug control? *(Please circle one)*

0                      1                      2                      3                      4                      5                      >5

20. What type of treatments/products do you typically use to control bed bugs? *(Check all that apply)*

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> 1-Insecticides/Chemical               | <input type="checkbox"/> 6-Structural fumigation                          | <input type="checkbox"/> 11-Infested items placed inside freezer                                      |
| <input type="checkbox"/> 2-Whole room/structure heat treatment | <input type="checkbox"/> 7-Vacuum (other than that performed by customer) | <input type="checkbox"/> 12-Laundering of infested items by customer (using washer +/- clothes drier) |
| <input type="checkbox"/> 3-Container heat treatment            | <input type="checkbox"/> 8-Vacuuming performed by customer                | <input type="checkbox"/> 13-Insecticide-impregnated liners for mattress/box springs                   |
| <input type="checkbox"/> 4-Steam                               | <input type="checkbox"/> 9-Disposal of infested items                     |   |
| <input type="checkbox"/> 5-Spot freezing equipment             | <input type="checkbox"/> 10-Mattress/box springs encasements              |   |

21. If insecticides/chemical checked above, please list all chemicals used in 2011? If possible, please include the chemical name with the product name.

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22. How would you rate your level of satisfaction with the currently available chemical treatment options for bed bugs (*please circle one*)?

1 -Very Dissatisfied      2 - Dissatisfied      3 - Neither Dissatisfied nor Satisfied      4 - Satisfied      5 - Very Satisfied

Please provide comments as to why you are satisfied or dissatisfied with the currently available chemical treatment options?

23. How would you rate your level of satisfaction with the currently available non-chemical treatment options for bed bugs (*please circle one*)?

1 -Very Dissatisfied      2 - Dissatisfied      3 - Neither Dissatisfied nor Satisfied      4 - Satisfied      5 - Very Satisfied

Please provide comments as to why you are satisfied or dissatisfied with the currently available non-chemical treatment options?

24. Currently, what percentage of your total treatments fall into the following categories? (*Please note that percentages must sum to 100%.*)

| Number of Bed Bugs                                      | Percent of Total Treatments |
|---|-----------------------------|
| < 10 bed bugs per infestation (light infestation)       | %                           |
| 11-100 bed bugs per infestation (medium infestation)    | %                           |
| 101-1000 bed bugs per infestation (heavy infestation)   | %                           |
| >1000 bed bugs per infestation (very heavy infestation) | %                           |

**25. Is it your policy to inspect surrounding units (when possible) within a multi-family dwelling?**  
*(please circle one)*

Yes

No

Don't know

Not applicable

**26. Do you feel that your customers are recognizing bed bug infestations earlier than in the past?**  
*(please circle one)*

Yes

No

Don't know

**27. Do you provide retail items (for bed bugs)?** *(please circle one)*

Yes

No

Don't know

**28. If you answered Yes to question 27 above: What retail products do you offer?**

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**29. Please provide any additional comments or suggestions regarding bed bugs that you would like to share, or additional clarification of particular answers in this survey.**

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**The following three items are optional, but known survey participants will be acknowledged, primarily by company name, in presentations and publications outlining the survey results. If you wish to be publicly acknowledged for your help with the survey, please provide the following information. And, THANK YOU for your help with this important endeavor.**

**30. Your name (optional)** \_\_\_\_\_

**31. Your company (optional)** \_\_\_\_\_

**32. Your email (optional)** \_\_\_\_\_

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**Please use the enclosed envelope to return this questionnaire at no cost to you. You may also mail the questionnaire to:**

*Statistical Consulting Service  
The Ohio State University  
328 Cockins Hall  
1958 Neil Avenue  
Columbus OH 43210*