

1 **Table 1-** Relative and absolute abundances (in brackets) of primary parasitoids and  
 2 hyperparasitoids (Hymenoptera) emerging from mummified *B. brassicae*, *L.*  
 3 *pseudobrassicae*, and *M. persicae*. Uberlândia-MG, Brazil, August 2005–March 2006  
 4 and October 2006–January 2008.  
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| Hymenoptera emerged                         |                               | Species of host aphid |                           |                     |
|---|-------------------------------|-----------------------|---------------------------|---------------------|
|   |                               | <i>B. brassicae</i>   | <i>L. pseudobrassicae</i> | <i>M. persicae</i>  |
| Primary Parasitoids                         | <i>Aphelinus</i> sp.          | 0.04% (2)             | 0.33% (1)                 | 0% (0)              |
|   | <i>Diaeretiella rapae</i>     | 8.61% (389)           | 13.16% (40)               | 15.75% (46)         |
|   | <b>Total parasitoids</b>      | <b>8.65% (391)</b>    | <b>13.49 (41)</b>         | <b>15.75% (46)</b>  |
| Secondary parasitoids<br>(Hyperparasitoids) | <i>Alloxysta fuscicornis</i>  | 72.30% (3.267)        | 43.75% (133)              | 38.01% (111)        |
|   | <i>Dendrocerus</i> spp.       | 0.04% (2)             | 0.33% (1)                 | 0.34% (1)           |
|   | <i>Pachyneuron</i> spp.       | 2.79% (126)           | 10.53% (32)               | 11.99% (35)         |
|   | <i>Tetrastichus</i> sp.       | 0.02% (1)             | 0% (0)                    | 0% (0)              |
|   | <i>Syrphophagus</i> spp.      | 16.20% (732)          | 31.91% (97)               | 33.90% (99)         |
|   | <b>Total hyperparasitoids</b> | <b>91.35% (4.128)</b> | <b>86.52% (263)</b>       | <b>84.24% (246)</b> |

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**Table 2** *Brevicoryne brassicae* abundance: hurdle models. Two complementary models were used: a logistic model to test for presence/absence and a lognormal model to assess the type of abundance of count data. In both models the effects of leaf position were assessed: [M leaf = Aphid density on middle vs upper leaves], [B leaf = Aphid density on bottom vs upper leaves], average temperature (Av. temp), accumulated precipitation (PPT), and the interaction between average temperature and PPT (Av. temp × PPT). Statistically significant results are indicated in bold text (< 0.05).

|              | LOGISTIC MODEL |   |      |       | LOGNORMAL MODEL |        |   |      |       |              |
|--------------|----------------|---|------|-------|-----------------|--------|---|------|-------|--------------|
|              | X              | ± | SE   | Z     | Pvalue          | X      | ± | SE   | T     | Pvalue       |
| Intercept    | -13.62         | ± | 5.54 | -2.46 | <b>0.014</b>    | -16.47 | ± | 3.76 | -4.38 | <b>0.000</b> |
| M leaf       | 0.35           | ± | 0.40 | 0.86  | 0.392           | 0.24   | ± | 0.24 | 1.00  | 0.317        |
| B leaf       | 0.17           | ± | 0.40 | 0.43  | 0.671           | -0.02  | ± | 0.24 | -0.10 | 0.920        |
| Av. temp     | 0.68           | ± | 0.25 | 2.77  | <b>0.006</b>    | 0.87   | ± | 0.16 | 5.42  | <b>0.000</b> |
| PPT          | 0.26           | ± | 0.12 | 2.13  | <b>0.033</b>    | 0.19   | ± | 0.09 | 2.06  | <b>0.043</b> |
| Av. temp×PPT | -0.01          | ± | 0.01 | -2.16 | <b>0.031</b>    | -0.01  | ± | 0.00 | -2.11 | <b>0.038</b> |

17 **Table 3** *Myzus persicae* abundance: hurdle models. Two complementary models were  
 18 used: a logistic model to test for presence/absence and a lognormal model to assess the  
 19 type of abundance of count data. In both models the effects of leaf position were  
 20 assessed: [M leaf = Aphid density on middle vs upper leaves], [B leaf = Aphid density  
 21 on bottom vs upper leaves], average temperature (Av. temp), accumulated precipitation  
 22 (PPT), and the interaction between average temperature and PPT (Av. temp  $\times$  PPT).  
 23 Statistically significant results are indicated in bold text ( $< 0.05$ ).  
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|                       | LOGISTIC MODEL |            |       |              | LOGNORMAL MODEL |            |       |              |
|-----------------------|----------------|------------|-------|--------------|-----------------|------------|-------|--------------|
|                       | X              | $\pm$ SE   | Z     | Pvalue       | X               | $\pm$ SE   | t     | Pvalue       |
| Intercept             | -10.39         | $\pm$ 3.93 | -2.65 | <b>0.008</b> | -6.28           | $\pm$ 2.24 | -2.79 | <b>0.006</b> |
| M leaf                | 2.32           | $\pm$ 0.38 | 6.16  | <b>0.000</b> | 1.37            | $\pm$ 0.24 | 5.60  | <b>0.000</b> |
| B leaf                | 3.19           | $\pm$ 0.43 | 7.44  | <b>0.000</b> | 1.69            | $\pm$ 0.24 | 7.02  | <b>0.000</b> |
| Av. temp              | 0.43           | $\pm$ 0.17 | 2.55  | <b>0.011</b> | 0.33            | $\pm$ 0.10 | 3.45  | <b>0.000</b> |
| PPT                   | 0.22           | $\pm$ 0.10 | 2.28  | <b>0.023</b> | 0.05            | $\pm$ 0.06 | 0.89  | 0.376        |
| Av. temp $\times$ PPT | -0.01          | $\pm$ 0.00 | -2.33 | <b>0.020</b> | -0.00           | $\pm$ 0.00 | -0.86 | 0.390        |

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28 **Table 4** *Lipaphis pseudobrassicae* abundance: hurdle models. Two complementary  
 29 models were used: a logistic model to test for presence/absence and a lognormal model  
 30 to assess the type of abundance of count data. In both models the effects of leaf position  
 31 were assessed: [M leaf = Aphid density on middle vs upper leaves], [B leaf = Aphid  
 32 density on bottom vs upper leaves], average temperature (Av. temp), accumulated  
 33 precipitation (PPT), and the interaction between average temperature and PPT (Av.  
 34 temp  $\times$  PPT). Statistically significant results are indicated in bold text ( $< 0.05$ ).  
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|                       | LOGISTIC MODEL |            |       |              | LOGNORMAL MODEL |            |       |              |
|-----------------------|----------------|------------|-------|--------------|-----------------|------------|-------|--------------|
|                       | X              | $\pm$ SE   | Z     | Pvalue       | X               | $\pm$ SE   | T     | Pvalue       |
| Intercept             | 8.68           | $\pm$ 4.55 | 1.91  | 0.056        | -0.51           | $\pm$ 2.94 | -0.18 | 0.862        |
| M leaf                | 1.36           | $\pm$ 0.48 | 2.82  | <b>0.005</b> | 2.14            | $\pm$ 0.22 | 9.95  | <b>0.000</b> |
| B leaf                | 1.64           | $\pm$ 0.51 | 3.20  | <b>0.001</b> | 3.25            | $\pm$ 0.21 | 15.29 | <b>0.000</b> |
| Av. temp              | -0.29          | $\pm$ 0.19 | -1.48 | 0.139        | 0.13            | $\pm$ 0.13 | 0.99  | 0.320        |
| PPT                   | 0.03           | $\pm$ 0.11 | 0.23  | 0.819        | 0.13            | $\pm$ 0.07 | 1.75  | 0.083        |
| Av. temp $\times$ PPT | -0.00          | $\pm$ 0.00 | -0.31 | 0.755        | -0.01           | $\pm$ 0.00 | -1.85 | 0.067        |

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38 **Table 5** *Brevicoryne brassicae* parasitism rate: hurdle models. Two complementary  
 39 models were used: a logistic model to test for presence/absence and a lognormal model  
 40 to assess the type of abundance of count data. In both models the effects of leaf position  
 41 were assessed: [M leaf = Aphid density on middle vs upper leaves], [B leaf = Aphid  
 42 density on bottom vs upper leaves], average temperature (Av. temp), accumulated  
 43 precipitation (PPT), and the interaction between average temperature and PPT (Av.  
 44 temp  $\times$  PPT). Statistically significant results are indicated in bold text ( $< 0.05$ ).  
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|                       | LOGISTIC MODEL |       |      |       | LOGNORMAL MODEL |       |       |      |       |              |
|-----------------------|----------------|-------|------|-------|-----------------|-------|-------|------|-------|--------------|
|                       | X              | $\pm$ | SE   | Z     | Pvalue          | X     | $\pm$ | SE   | t     | Pvalue       |
| Intercept             | -20.36         | $\pm$ | 4.48 | -4.55 | <b>0.000</b>    | 3.70  | $\pm$ | 2.60 | 1.43  | 0.159        |
| M leaf                | 0.14           | $\pm$ | 0.35 | 0.40  | 0.690           | 0.42  | $\pm$ | 0.22 | 1.91  | 0.059        |
| B leaf                | 0.62           | $\pm$ | 0.35 | 1.78  | 0.075           | 0.91  | $\pm$ | 0.22 | 4.18  | <b>0.000</b> |
| Av. temp              | 0.86           | $\pm$ | 0.19 | 4.46  | <b>0.000</b>    | -0.09 | $\pm$ | 0.11 | -0.88 | 0.381        |
| PPT                   | 0.36           | $\pm$ | 0.10 | 3.56  | <b>0.000</b>    | 0.04  | $\pm$ | 0.06 | 0.61  | 0.543        |
| Av. temp $\times$ PPT | -0.02          | $\pm$ | 0.00 | -3.52 | <b>0.000</b>    | -0.00 | $\pm$ | 0.00 | -0.53 | 0.597        |

46 **Table 6** *Myzus persicae* parasitism rate: hurdle models. Two complementary models  
 47 were used: a logistic model to test for presence/absence and a lognormal model to  
 48 assess the type of abundance of count data. In both models the effects of leaf position  
 49 were assessed: [M leaf = Aphid density on middle vs upper leaves], [B leaf = Aphid  
 50 density on bottom vs upper leaves], average temperature (Av. temp), accumulated  
 51 precipitation (PPT), and the interaction between average temperature and PPT (Av.  
 52 temp  $\times$  PPT). Statistically significant results are indicated in bold text ( $< 0.05$ ).  
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|                       | LOGISTIC MODEL |       |      |       | LOGNORMAL MODEL |       |       |      |       |        |
|-----------------------|----------------|-------|------|-------|-----------------|-------|-------|------|-------|--------|
|                       | X              | $\pm$ | SE   | Z     | Pvalue          | X     | $\pm$ | SE   | t     | Pvalue |
| Intercept             | -21.89         | $\pm$ | 4.84 | -4.52 | 0.000           | 2.17  | $\pm$ | 2.58 | 0.84  | 0.402  |
| M leaf                | 3.16           | $\pm$ | 0.65 | 4.82  | <b>0.000</b>    | -0.40 | $\pm$ | 0.52 | -0.78 | 0.440  |
| B leaf                | 5.11           | $\pm$ | 0.68 | 7.50  | <b>0.000</b>    | 0.31  | $\pm$ | 0.51 | 0.62  | 0.539  |
| Av. temp              | 0.74           | $\pm$ | 0.20 | 3.69  | <b>0.000</b>    | -0.02 | $\pm$ | 0.11 | -0.16 | 0.870  |
| PPT                   | 0.34           | $\pm$ | 0.11 | 3.02  | <b>0.002</b>    | 0.10  | $\pm$ | 0.06 | 1.58  | 0.119  |
| Av. temp $\times$ PPT | -0.01          | $\pm$ | 0.01 | -2.97 | <b>0.003</b>    | -0.00 | $\pm$ | 0.00 | -1.57 | 0.122  |

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58 **Table 7** *Lipaphis pseudobrassicae* parasitism rate: hurdle models. Two  
 59 complementary models were used: a logistic model to test for presence/absence and a  
 60 lognormal model to assess the type of abundance of count data. In both models the  
 61 effects of leaf position were assessed: [M leaf = Aphid density on middle vs upper  
 62 leaves], [B leaf = Aphid density on bottom vs upper leaves], average temperature (Av.  
 63 temp), accumulated precipitation (PPT), and the interaction between average  
 64 temperature and PPT (Av. temp  $\times$  PPT). Statistically significant results are indicated in  
 65 bold text ( $< 0.05$ ).  
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|                       | LOGISTIC MODEL |       |      |       |              | LOGNORMAL MODEL |       |      |       |        |
|-----------------------|----------------|-------|------|-------|--------------|-----------------|-------|------|-------|--------|
|                       | X              | $\pm$ | SE   | Z     | Pvalue       | X               | $\pm$ | SE   | t     | Pvalue |
| Intercept             | -19.96         | $\pm$ | 6.23 | -3.20 | <b>0.001</b> | 1.02            | $\pm$ | 4.75 | 0.21  | 0.831  |
| M leaf                | 3.61           | $\pm$ | 1.05 | 3.45  | <b>0.000</b> | 1.35            | $\pm$ | 0.78 | 1.73  | 0.101  |
| B leaf                | 5.99           | $\pm$ | 1.07 | 5.61  | <b>0.000</b> | 1.46            | $\pm$ | 0.78 | 1.88  | 0.075  |
| Av. temp              | 0.57           | $\pm$ | 0.26 | 2.19  | <b>0.028</b> | -0.14           | $\pm$ | 0.20 | -0.72 | 0.473  |
| PPT                   | 0.51           | $\pm$ | 0.15 | 3.29  | <b>0.000</b> | 0.03            | $\pm$ | 0.10 | 0.29  | 0.770  |
| Av. temp $\times$ PPT | -0.02          | $\pm$ | 0.00 | -3.25 | <b>0.001</b> | -0.00           | $\pm$ | 0.00 | -0.21 | 0.833  |

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