**Supplementary Material Table 1.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at St. John’s, Newfoundland, in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 143.2 | 0.14 | 0.14 | 0.14 | 0.067 | 3.0 |
| L1 | Total | 856.8 | 276.9 | 0.32 | 0.32 | 0.28 | 0.170 | 7.5 |
|  | Unknown | 856.8 | 185.8 | 0.23 | 0.22 | 0.19 | 0.114 | 5.1 |
|  | \*Parasitism | 671.0 | 91.1 | 0.12 | 0.11 | 0.09 | 0.056 | 2.5 |
| L2-4 | Total | 579.9 | 562.5 | 0.97 | 0.97 | 0.56 | 1.523 | 67.7 |
|  | Unknown | 579.9 | 498.7 | 0.96 | 0.86 | 0.50 | 1.350 | 60.1 |
|  | \*Parasitism | 81.2 | 63.8 | 0.33 | 0.11 | 0.06 | 0.173 | 7.7 |
| Pupae | Total | 17.4 | 6.1 | 0.35 | 0.35 | 0.01 | 0.188 | 8.3 |
|  | Unknown | 17.4 | 6.1 | 0.35 | 0.35 | 0.01 | 0.188 | 8.3 |
|  | \*Parasitism | 11.3 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 11.3 | 5.6 | 0.50 | 0.50 | 0.01 | 0.301 | 13.4 |
| Adult females |  | 5.6 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 686 |  |  |  |  |  |  |
| Total mortality = |  | 99.5% |  |  |  | *Kg* = | 2.248 |  |
| Net reproductive rate (*Ro*) = |  | 0.7 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 2.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at St. John’s, Newfoundland, in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 723.9 | 0.72 | 0.72 | 0.72 | 0.559 | 24.9 |
| L1 | Total | 276.1 | 172.6 | 0.63 | 0.63 | 0.17 | 0.426 | 19.0 |
|  | Unknown | 276.1 | 85.6 | 0.39 | 0.31 | 0.09 | 0.211 | 9.4 |
|  | \*Parasitism | 190.4 | 87.0 | 0.39 | 0.32 | 0.09 | 0.215 | 9.6 |
| L2-4 | Total | 103.4 | 89.6 | 0.87 | 0.87 | 0.09 | 0.875 | 38.9 |
|  | Unknown | 103.4 | 85.9 | 0.85 | 0.83 | 0.09 | 0.838 | 37.3 |
|  | \*Parasitism | 17.6 | 3.8 | 0.08 | 0.04 | 0.00 | 0.037 | 1.6 |
| Pupae | Total | 13.8 | 2.5 | 0.18 | 0.18 | 0.00 | 0.087 | 3.9 |
|  | Unknown | 13.8 | 2.4 | 0.17 | 0.17 | 0.00 | 0.083 | 3.7 |
|  | \*Parasitism | 11.4 | 0.1 | 0.01 | 0.01 | 0.00 | 0.004 | 0.2 |
| Adults emerged | Sex ratio | 11.3 | 5.6 | 0.50 | 0.50 | 0.01 | 0.301 | 13.4 |
| Adult females |  | 5.6 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 1438 |  |  |  |  |  |  |
| Total mortality = |  | 98.9% |  |  |  | *Kg* = | 2.249 |  |
| Net reproductive rate (*Ro*) = |  | 1.4 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |

**Supplementary Material Table 3.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at St. John’s, Newfoundland, in 2019. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 607.5 | 0.61 | 0.61 | 0.61 | 0.406 | 16.7 |
| L1 | Total | 392.5 | 178.6 | 0.46 | 0.46 | 0.18 | 0.264 | 10.8 |
|  | Unknown | 392.5 | 97.0 | 0.28 | 0.25 | 0.10 | 0.143 | 5.9 |
|  | \*Parasitism | 295.4 | 81.6 | 0.24 | 0.21 | 0.08 | 0.120 | 5.0 |
| L2 | Total | 213.8 | 199.4 | 0.93 | 0.93 | 0.20 | 1.171 | 48.1 |
|  | Unknown | 213.8 | 147.0 | 0.86 | 0.69 | 0.15 | 0.863 | 35.5 |
|  | \*Parasitism | 66.8 | 52.4 | 0.51 | 0.25 | 0.05 | 0.308 | 12.6 |
| Pupae | Total | 14.4 | 7.1 | 0.49 | 0.49 | 0.01 | 0.291 | 12.0 |
|  | Unknown | 14.4 | 7.1 | 0.49 | 0.49 | 0.01 | 0.291 | 12.0 |
|  | \*Parasitism | 7.4 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 7.4 | 3.7 | 0.50 | 0.50 | 0.00 | 0.301 | 12.4 |
| Adult females |  | 3.7 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 941 |  |  |  |  |  |  |
| Total mortality = |  | 99.3% |  |  |  | *Kg* = | 2.433 |  |
| Net reproductive rate (*Ro*) = |  | 0.9 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 4.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at Charlottetown, Prince Edward Island, in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 867.5 | 0.87 | 0.87 | 0.87 | 0.878 | 37.1 |
| L1 | Total | 132.5 | 87.8 | 0.66 | 0.66 | 0.09 | 0.472 | 20.0 |
|  | Unknown | 132.5 | 87.2 | 0.66 | 0.66 | 0.09 | 0.469 | 19.8 |
|  | \*Parasitism | 45.3 | 0.6 | 0.01 | 0.00 | 0.00 | 0.003 | 0.1 |
| L2-4 | Total | 44.7 | 30.8 | 0.69 | 0.69 | 0.03 | 0.507 | 21.4 |
|  | Unknown | 44.7 | 27.9 | 0.65 | 0.62 | 0.03 | 0.460 | 19.4 |
|  | \*Parasitism | 16.8 | 2.9 | 0.10 | 0.06 | 0.00 | 0.047 | 2.0 |
| Pupae | Total | 13.9 | 5.3 | 0.38 | 0.38 | 0.01 | 0.208 | 8.8 |
|  | Unknown | 13.9 | 4.8 | 0.35 | 0.34 | 0.00 | 0.187 | 7.9 |
|  | \*Parasitism | 9.1 | 0.5 | 0.05 | 0.04 | 0.00 | 0.020 | 0.9 |
| Adults emerged | Sex ratio | 8.6 | 4.3 | 0.50 | 0.50 | 0.00 | 0.301 | 12.7 |
| Adult females |  | 4.3 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 1098.7 |  |  |  |  |  |  |
| Total mortality = |  | 99.1% |  |  |  | *Kg* = | 2.365 |  |
| Net reproductive rate (*Ro*) = |  | 1.1 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |

**Supplementary Material Table 5.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at Charlottetown, Prince Edward Island, in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 676.0 | 0.68 | 0.68 | 0.68 | 0.489 | 24.8 |
| L1 | Total | 324.0 | 166.5 | 0.51 | 0.51 | 0.17 | 0.313 | 15.9 |
|  | Unknown | 324.0 | 150.3 | 0.48 | 0.46 | 0.15 | 0.283 | 14.4 |
|  | \*Parasitism | 173.7 | 16.2 | 0.07 | 0.05 | 0.02 | 0.031 | 1.6 |
| L2-4 | Total | 157.5 | 110.9 | 0.70 | 0.70 | 0.11 | 0.529 | 26.9 |
|  | Unknown | 157.5 | 100.1 | 0.67 | 0.64 | 0.10 | 0.478 | 24.2 |
|  | \*Parasitism | 57.4 | 10.8 | 0.11 | 0.07 | 0.01 | 0.052 | 2.6 |
| Pupae | Total | 46.5 | 25.1 | 0.54 | 0.54 | 0.03 | 0.337 | 17.1 |
|  | Unknown | 46.5 | 22.4 | 0.50 | 0.48 | 0.02 | 0.300 | 15.3 |
|  | \*Parasitism | 24.1 | 2.7 | 0.08 | 0.06 | 0.00 | 0.036 | 1.8 |
| Adults emerged | Sex ratio | 21.4 | 10.7 | 0.50 | 0.50 | 0.01 | 0.301 | 15.3 |
| Adult females |  | 10.7 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 2732.0 |  |  |  |  |  |  |
| Total mortality = |  | 97.9% |  |  |  | *Kg* = | 1.970 |  |
| Net reproductive rate (*Ro*) = |  | 2.7 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 6.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at Charlottetown, Prince Edward Island, in 2019. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 551.0 | 0.55 | 0.55 | 0.55 | 0.348 | 25.1 |
| L1 | Total | 449.0 | 210.4 | 0.47 | 0.47 | 0.21 | 0.274 | 19.8 |
|  | Unknown | 449.0 | 207.5 | 0.46 | 0.46 | 0.21 | 0.271 | 19.5 |
|  | \*Parasitism | 241.6 | 2.9 | 0.01 | 0.01 | 0.00 | 0.004 | 0.3 |
| L2-4 | Total | 238.7 | 103.4 | 0.43 | 0.43 | 0.10 | 0.247 | 17.8 |
|  | Unknown | 238.7 | 83.3 | 0.37 | 0.35 | 0.08 | 0.199 | 14.3 |
|  | \*Parasitism | 155.4 | 20.2 | 0.10 | 0.08 | 0.02 | 0.048 | 3.5 |
| Pupae | Total | 135.2 | 53.1 | 0.39 | 0.39 | 0.05 | 0.217 | 15.6 |
|  | Unknown | 135.2 | 44.6 | 0.34 | 0.33 | 0.04 | 0.182 | 13.1 |
|  | \*Parasitism | 90.6 | 8.5 | 0.08 | 0.06 | 0.01 | 0.035 | 2.5 |
| Adults emerged | Sex ratio | 82.1 | 41.1 | 0.50 | 0.50 | 0.04 | 0.301 | 21.7 |
| Adult females |  | 41.1 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 10466.5 |  |  |  |  |  |  |
| Total mortality = |  | 91.8% |  |  |  | *Kg* = | 1.387 |  |
| Net reproductive rate (*Ro*) = |  | 10.5 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 7.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**)at Ottawa, Ontario, in 2016. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 757.8 | 0.76 | 0.76 | 0.76 | 0.616 | 26.5 |
| L1 | Total | 242.2 | 114.1 | 0.47 | 0.47 | 0.11 | 0.277 | 11.9 |
|  | Unknown | 242.2 | 77.2 | 0.35 | 0.32 | 0.08 | 0.187 | 8.1 |
|  | \*Parasitism | 165.0 | 37.0 | 0.19 | 0.15 | 0.04 | 0.090 | 3.9 |
| L2-4 | Total | 128.0 | 92.8 | 0.73 | 0.73 | 0.09 | 0.561 | 24.1 |
|  | Unknown | 128.0 | 89.3 | 0.71 | 0.70 | 0.09 | 0.539 | 23.2 |
|  | \*Parasitism | 38.8 | 3.6 | 0.05 | 0.03 | 0.00 | 0.022 | 0.9 |
| Pupae | Total | 35.2 | 25.7 | 0.73 | 0.73 | 0.03 | 0.569 | 24.5 |
|  | Unknown | 35.2 | 21.9 | 0.67 | 0.62 | 0.02 | 0.485 | 20.9 |
|  | \*Parasitism | 13.3 | 3.8 | 0.18 | 0.11 | 0.00 | 0.084 | 3.6 |
| Adults emerged | Sex ratio | 9.5 | 4.8 | 0.50 | 0.50 | 0.00 | 0.301 | 13.0 |
| Adult females |  | 4.8 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 1210.7 |  |  |  |  |  |  |
| Total mortality = |  | 99.0% |  |  |  | *Kg* = | 2.323 |  |
| Net reproductive rate (*Ro*) = |  | 1.2 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 8.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at Ottawa, Ontario, in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage); ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 632.3 | 0.63 | 0.63 | 0.63 | 0.434 | 14.3 |
| L1 | Total | 367.7 | 211.0 | 0.57 | 0.57 | 0.21 | 0.370 | 12.2 |
|  | Unknown | 367.7 | 139.3 | 0.43 | 0.38 | 0.14 | 0.245 | 8.1 |
|  | \*Parasitism | 228.4 | 71.7 | 0.25 | 0.19 | 0.07 | 0.126 | 4.1 |
| L2 | Total | 156.7 | 128.8 | 0.82 | 0.82 | 0.13 | 0.749 | 24.7 |
|  | Unknown | 156.7 | 107.9 | 0.76 | 0.69 | 0.11 | 0.627 | 20.7 |
|  | \*Parasitism | 48.9 | 20.9 | 0.24 | 0.13 | 0.02 | 0.122 | 4.0 |
| L4 | Total | 28.0 | 23.8 | 0.85 | 0.85 | 0.02 | 0.824 | 27.2 |
|  | Unknown | 28.0 | 21.9 | 0.83 | 0.79 | 0.02 | 0.761 | 25.1 |
|  | \*Parasitism | 6.0 | 1.8 | 0.14 | 0.07 | 0.00 | 0.063 | 2.1 |
| Pupae | Total | 4.2 | 2.3 | 0.56 | 0.56 | 0.00 | 0.354 | 11.7 |
|  | Unknown | 4.2 | 2.0 | 0.51 | 0.49 | 0.00 | 0.309 | 10.2 |
|  | \*Parasitism | 2.2 | 0.3 | 0.10 | 0.07 | 0.00 | 0.045 | 1.5 |
| Adults emerged | Sex ratio | 1.9 | 0.9 | 0.50 | 0.50 | 0.00 | 0.301 | 9.9 |
| Adult females |  | 0.9 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 236.5 |  |  |  |  |  |  |
| Total mortality = |  | 99.8% |  |  |  | *Kg* = | 3.033 |  |
| Net reproductive rate (*Ro*) = |  | 0.2 |  |  |  |  |  |  |
| \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 9.** Diamondback moth, *Plutella xylostella*, **s**tage specific life table **(uncaged plants**) at Ottawa, Ontario, in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 903.2 | 0.90 | 0.90 | 0.90 | 1.014 | 40.1 |
| L1 | Total | 96.8 | 14.2 | 0.15 | 0.15 | 0.01 | 0.069 | 2.7 |
|  | Unknown | 96.8 | 13.7 | 0.14 | 0.14 | 0.01 | 0.067 | 2.6 |
|  | \*Parasitism | 83.1 | 0.5 | 0.01 | 0.00 | 0.00 | 0.002 | 0.1 |
| L2-4 | Total | 82.6 | 69.3 | 0.84 | 0.84 | 0.07 | 0.794 | 31.3 |
|  | Unknown | 82.6 | 54.2 | 0.76 | 0.66 | 0.05 | 0.621 | 24.5 |
|  | \*Parasitism | 28.4 | 15.1 | 0.33 | 0.18 | 0.02 | 0.173 | 6.8 |
| Pupae | Total | 13.3 | 7.4 | 0.56 | 0.56 | 0.01 | 0.354 | 14.0 |
|  | Unknown | 13.3 | 5.9 | 0.48 | 0.45 | 0.01 | 0.284 | 11.2 |
|  | \*Parasitism | 7.3 | 1.5 | 0.15 | 0.11 | 0.00 | 0.070 | 2.8 |
| Adults emerged | Sex ratio | 5.9 | 2.9 | 0.50 | 0.50 | 0.00 | 0.301 | 11.9 |
| Adult females |  | 2.9 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 749.6 |  |  |  |  |  |  |
| Total mortality = |  | 99.4% |  |  |  | *Kg* = | 2.532 |  |
| Net reproductive rate (*Ro*) = |  | 0.7 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |

**Supplementary Material Table 10.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(uncaged plants**) at Agassiz, British Columbia in 2015. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 920.8 | 0.92 | 0.92 | 0.92 | 1.101 | 32.2 |
| L1 | Total | 79.2 | 22.8 | 0.29 | 0.29 | 0.02 | 0.148 | 4.3 |
|  | Unknown | 79.2 | 8.4 | 0.12 | 0.11 | 0.01 | 0.055 | 1.6 |
|  | \*Parasitism | 70.8 | 14.4 | 0.19 | 0.18 | 0.01 | 0.093 | 2.7 |
| L2-4 | Total | 56.4 | 47.7 | 0.85 | 0.85 | 0.05 | 0.812 | 23.7 |
|  | Unknown | 56.4 | 44.3 | 0.82 | 0.79 | 0.04 | 0.755 | 22.0 |
|  | \*Parasitism | 12.0 | 3.3 | 0.12 | 0.06 | 0.00 | 0.057 | 1.7 |
| Pupae | Total | 8.7 | 7.9 | 0.91 | 0.91 | 0.01 | 1.063 | 31.0 |
|  | Unknown | 8.7 | 7.7 | 0.91 | 0.89 | 0.01 | 1.031 | 30.1 |
|  | \*Parasitism | 1.0 | 0.2 | 0.07 | 0.03 | 0.00 | 0.033 | 0.9 |
| Adults emerged | Sex ratio | 0.8 | 0.4 | 0.50 | 0.50 | 0.00 | 0.301 | 8.8 |
| Adult females |  | 0.4 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 95.7 |  |  |  |  |  |  |
| Total mortality = |  | 99.9% |  |  |  | *Kg* = | 3.425 |  |
| Net reproductive rate (*Ro*) = |  | 0.1 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |

**Supplementary Material Table 11.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(uncaged plants**) at Agassiz, British Columbia in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 915.3 | 0.92 | 0.92 | 0.92 | 1.072 | 33.8 |
| L1 | Total | 84.7 | 53.6 | 0.63 | 0.63 | 0.05 | 0.435 | 13.7 |
|  | Unknown | 84.7 | 41.2 | 0.54 | 0.49 | 0.04 | 0.335 | 10.5 |
|  | \*Parasitism | 43.5 | 12.4 | 0.21 | 0.15 | 0.01 | 0.101 | 3.2 |
| L2-4 | Total | 31.1 | 26.6 | 0.86 | 0.86 | 0.03 | 0.839 | 26.4 |
|  | Unknown | 31.1 | 23.3 | 0.82 | 0.75 | 0.02 | 0.735 | 23.2 |
|  | \*Parasitism | 7.8 | 3.3 | 0.21 | 0.11 | 0.00 | 0.104 | 3.3 |
| Pupae | Total | 4.5 | 3.2 | 0.70 | 0.70 | 0.00 | 0.528 | 16.6 |
|  | Unknown | 4.5 | 2.7 | 0.64 | 0.60 | 0.00 | 0.449 | 14.2 |
|  | \*Parasitism | 1.8 | 0.5 | 0.17 | 0.10 | 0.00 | 0.078 | 2.5 |
| Adults emerged | Sex ratio | 1.3 | 0.7 | 0.50 | 0.50 | 0.00 | 0.301 | 9.5 |
| Adult females |  | 0.7 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 170.1 |  |  |  |  |  |  |
| Total mortality = |  | 99.9% |  |  |  | *Kg* = | 3.176 | 100.0 |
| Net reproductive rate (*Ro*) = |  | 0.2 |  |  |  |  |  |  |
| \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |

**Supplementary Material Table 12.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at St. John’s, Newfoundland, in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 143.2 | 0.14 | 0.14 | 0.14 | 0.067 | 13.0 |
| L1 | Total | 856.8 | 81.7 | 0.10 | 0.10 | 0.08 | 0.044 | 8.4 |
|  | Unknown | 856.8 | 81.7 | 0.10 | 0.10 | 0.08 | 0.044 | 8.4 |
|  | \*Parasitism | 775.1 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| L2 | Total | 775.1 | 152.0 | 0.20 | 0.20 | 0.15 | 0.095 | 18.3 |
|  | Unknown | 775.1 | 152.0 | 0.20 | 0.20 | 0.15 | 0.095 | 18.3 |
|  | \*Parasitism | 623.1 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 623.1 | 14.8 | 0.02 | 0.02 | 0.01 | 0.010 | 2.0 |
|  | Unknown | 623.1 | 14.8 | 0.02 | 0.02 | 0.01 | 0.010 | 2.0 |
|  | \*Parasitism | 608.3 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 608.3 | 304.1 | 0.50 | 0.50 | 0.30 | 0.301 | 58.2 |
| Adult females |  | 304.1 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 77518.1 |  |  |  |  |  |  |
| Total mortality = |  | 39.2% |  |  |  | *Kg* = | 0.517 |  |
| Net reproductive rate (*Ro*) = |  | 77.5 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |

**Supplementary Material Table 13.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at St. John’s, Newfoundland, in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 659.5 | 0.66 | 0.66 | 0.66 | 0.468 | 41.8 |
| L1 | Total | 340.5 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
|  | Unknown | 340.5 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
|  | \*Parasitism | 340.5 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| L2-4 | Total | 340.5 | 182.8 | 0.54 | 0.54 | 0.18 | 0.334 | 29.8 |
|  | Unknown | 340.5 | 182.8 | 0.54 | 0.54 | 0.18 | 0.334 | 29.8 |
|  | \*Parasitism | 157.8 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 157.8 | 6.2 | 0.04 | 0.04 | 0.01 | 0.018 | 1.6 |
|  | Unknown | 157.8 | 6.2 | 0.04 | 0.04 | 0.01 | 0.018 | 1.6 |
|  | \*Parasitism | 151.5 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 151.5 | 75.8 | 0.50 | 0.50 | 0.08 | 0.301 | 26.9 |
| Adult females |  | 75.8 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 19313.2 |  |  |  |  |  |  |
| Total mortality = |  | 84.8% |  |  |  | *Kg* = | 1.120 |  |
| Net reproductive rate (*Ro*) = |  | 19.3 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 14.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at St. John’s, Newfoundland, in 2019. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 212.6 | 0.21 | 0.21 | 0.21 | 0.104 | 19.7 |
| L1 | Total | 787.4 | 12.3 | 0.02 | 0.02 | 0.01 | 0.007 | 1.3 |
|  | Unknown | 787.4 | 6.1 | 0.01 | 0.01 | 0.01 | 0.003 | 0.6 |
|  | \*Parasitism | 781.2 | 6.1 | 0.01 | 0.01 | 0.01 | 0.003 | 0.6 |
| L2 | Total | 775.1 | 60.1 | 0.08 | 0.08 | 0.06 | 0.035 | 6.7 |
|  | Unknown | 775.1 | 60.1 | 0.08 | 0.08 | 0.06 | 0.035 | 6.7 |
|  | \*Parasitism | 715.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 715.0 | 120.0 | 0.17 | 0.17 | 0.12 | 0.080 | 15.2 |
|  | Unknown | 715.0 | 120.0 | 0.17 | 0.17 | 0.12 | 0.080 | 15.2 |
|  | \*Parasitism | 595.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 595.0 | 297.5 | 0.50 | 0.50 | 0.30 | 0.301 | 57.2 |
| Adult females |  | 297.5 |  |  |  |  |  |  |
| Estimated fecundity  |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 75825.5 |  |  |  |  |  |  |
| Total mortality = |  | 40.5% |  |  |  | *Kg* = | 0.527 |  |
| Net reproductive rate (*Ro*) = |  | 75.8 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 15.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Charlottetown, Prince Edward Island, in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 731.3 | 0.73 | 0.73 | 0.73 | 0.571 | 33.4 |
| L1 | Total | 268.7 | 155.9 | 0.58 | 0.58 | 0.16 | 0.377 | 22.0 |
|  | Unknown | 268.7 | 155.9 | 0.58 | 0.58 | 0.16 | 0.377 | 22.0 |
|  | \*Parasitism | 112.8 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| L2-4 | Total | 112.8 | 64.2 | 0.57 | 0.57 | 0.06 | 0.365 | 21.4 |
|  | Unknown | 112.8 | 64.2 | 0.57 | 0.57 | 0.06 | 0.365 | 21.4 |
|  | \*Parasitism | 48.6 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 48.6 | 9.7 | 0.20 | 0.20 | 0.01 | 0.097 | 5.7 |
|  | Unknown | 48.6 | 9.7 | 0.20 | 0.20 | 0.01 | 0.097 | 5.7 |
|  | \*Parasitism | 38.9 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 38.9 | 19.5 | 0.50 | 0.50 | 0.02 | 0.301 | 17.6 |
| Adult females |  | 19.5 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 4958.2 |  |  |  |  |  |  |
| Total mortality = |  | 96.1% |  |  |  | *Kg* = | 1.711 |  |
| Net reproductive rate (*Ro*) = |  | 5.0 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 16.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Charlottetown, Prince Edward Island, in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 500.0 | 0.50 | 0.50 | 0.50 | 0.301 | 21.5 |
| L1 | Total | 500.0 | 202.2 | 0.40 | 0.40 | 0.20 | 0.225 | 16.1 |
|  | Unknown | 500.0 | 202.2 | 0.40 | 0.40 | 0.20 | 0.225 | 16.1 |
|  | \*Parasitism | 297.8 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| L2-4 | Total | 297.8 | 177.3 | 0.60 | 0.60 | 0.18 | 0.393 | 28.1 |
|  | Unknown | 297.8 | 177.3 | 0.60 | 0.60 | 0.18 | 0.393 | 28.1 |
|  | \*Parasitism | 120.4 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 120.4 | 40.3 | 0.33 | 0.33 | 0.04 | 0.177 | 12.7 |
|  | Unknown | 120.4 | 39.8 | 0.33 | 0.33 | 0.04 | 0.175 | 12.5 |
|  | \*Parasitism | 80.6 | 0.5 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 80.1 | 40.1 | 0.50 | 0.50 | 0.04 | 0.301 | 21.5 |
| Adult females |  | 40.1 |  |  |  |  |  |  |
| Estimated fecundity  |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 10209.6 |  |  |  |  |  |  |
| Total mortality = |  | 92.0% |  |  |  | *Kg* = | 1.397 |  |
| Net reproductive rate (*Ro*) = |  | 10.2 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 17.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Charlottetown, Prince Edward Island, in 2019. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the ratio of the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 551.0 | 0.55 | 0.55 | 0.55 | 0.348 | 31.1 |
| L1 | Total | 449.0 | 197.4 | 0.44 | 0.44 | 0.20 | 0.251 | 22.5 |
|  | Unknown | 449.0 | 196.6 | 0.44 | 0.44 | 0.20 | 0.251 | 22.4 |
|  | \*Parasitism | 252.4 | 0.7 | 0.00 | 0.00 | 0.00 | 0.001 | 0.1 |
| L2-4 | Total | 251.7 | 57.6 | 0.23 | 0.23 | 0.06 | 0.113 | 10.1 |
|  | Unknown | 251.7 | 57.6 | 0.23 | 0.23 | 0.06 | 0.113 | 10.1 |
|  | \*Parasitism | 194.1 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 194.1 | 42.3 | 0.22 | 0.22 | 0.04 | 0.107 | 9.5 |
|  | Unknown | 194.1 | 42.3 | 0.22 | 0.22 | 0.04 | 0.107 | 9.5 |
|  | \*Parasitism | 151.8 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 151.8 | 75.9 | 0.50 | 0.50 | 0.08 | 0.301 | 26.9 |
| Adult females |  | 75.9 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 19343.8 |  |  |  |  |  |  |
| Total mortality = |  | 84.8% |  |  |  | *Kg* = | 1.120 |  |
| Net reproductive rate (*Ro*) = |  | 19.3 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |

**Supplementary Material Table 18.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Ottawa, Ontario, in 2016. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k-value*** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 634.9 | 0.63 | 0.63 | 0.63 | 0.438 | 41.9 |
| L1 | Total | 365.1 | 6.6 | 0.02 | 0.02 | 0.01 | 0.008 | 0.8 |
|  | Unknown | 365.1 | 6.3 | 0.02 | 0.02 | 0.01 | 0.008 | 0.7 |
|  | \*Parasitism | 358.8 | 0.3 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| L2-4 | Total | 358.6 | 133.4 | 0.37 | 0.37 | 0.13 | 0.202 | 19.4 |
|  | Unknown | 358.6 | 130.5 | 0.37 | 0.36 | 0.13 | 0.198 | 18.9 |
|  | \*Parasitism | 228.0 | 2.9 | 0.01 | 0.01 | 0.00 | 0.004 | 0.4 |
| Pupae | Total | 225.2 | 44.2 | 0.20 | 0.20 | 0.04 | 0.095 | 9.1 |
|  | Unknown | 225.2 | 44.2 | 0.20 | 0.20 | 0.04 | 0.095 | 9.1 |
|  | \*Parasitism | 181.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 181.0 | 90.5 | 0.50 | 0.50 | 0.09 | 0.301 | 28.9 |
| Adult females |  | 90.5 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 23067.4 |  |  |  |  |  |  |
| Total mortality = |  | 81.9% |  |  |  | *Kg* = | 1.043 |  |
| Net reproductive rate (*Ro*) = |  | 23.1 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |

**Supplementary Material Table 19.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Ottawa, Ontario, in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 431.0 | 0.43 | 0.43 | 0.43 | 0.245 | 22.6 |
| L1 | Total | 569.0 | 10.6 | 0.02 | 0.02 | 0.01 | 0.008 | 0.8 |
|  | Unknown | 569.0 | 9.3 | 0.02 | 0.02 | 0.01 | 0.007 | 0.7 |
|  | \*Parasitism | 559.7 | 1.3 | 0.00 | 0.00 | 0.00 | 0.001 | 0.1 |
| L2 | Total | 558.4 | 149.8 | 0.27 | 0.27 | 0.15 | 0.136 | 12.5 |
|  | Unknown | 558.4 | 139.6 | 0.25 | 0.25 | 0.14 | 0.126 | 11.7 |
|  | \*Parasitism | 418.8 | 10.2 | 0.02 | 0.02 | 0.01 | 0.009 | 0.9 |
| L4 | Total | 408.5 | 33.7 | 0.08 | 0.08 | 0.03 | 0.037 | 3.5 |
|  | Unknown | 408.5 | 33.7 | 0.08 | 0.08 | 0.03 | 0.037 | 3.5 |
|  | \*Parasitism | 374.8 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 374.8 | 208.9 | 0.56 | 0.56 | 0.21 | 0.354 | 32.7 |
|  | Unknown | 374.8 | 182.4 | 0.51 | 0.49 | 0.18 | 0.309 | 28.6 |
|  | \*Parasitism | 192.5 | 26.6 | 0.10 | 0.07 | 0.03 | 0.045 | 4.2 |
| Adults emerged | Sex ratio | 165.9 | 82.9 | 0.50 | 0.50 | 0.08 | 0.301 | 27.8 |
| Adult females |  | 82.9 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  |  | 21139.2 |  |  |  |  |  |  |
| Total mortality = |  | 83.4% |  |  |  | *Kg* = | 1.081 |  |
| Net reproductive rate (*Ro*) = |  | 21.1 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |

**Supplementary Material Table 20.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Ottawa, Ontario, in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 806.3 | 0.81 | 0.81 | 0.81 | 0.713 | 51.2 |
| L1 | Total | 193.7 | 22.1 | 0.11 | 0.11 | 0.02 | 0.053 | 3.8 |
|  | Unknown | 193.7 | 13.4 | 0.07 | 0.07 | 0.01 | 0.032 | 2.3 |
|  | \*Parasitism | 180.4 | 8.7 | 0.05 | 0.04 | 0.01 | 0.021 | 1.5 |
| L2-4 | Total | 171.7 | 88.8 | 0.52 | 0.52 | 0.09 | 0.317 | 22.7 |
|  | Unknown | 171.7 | 77.9 | 0.47 | 0.45 | 0.08 | 0.277 | 19.9 |
|  | \*Parasitism | 93.8 | 11.0 | 0.09 | 0.06 | 0.01 | 0.039 | 2.8 |
| Pupae | Total | 82.8 | 1.7 | 0.02 | 0.02 | 0.00 | 0.009 | 0.7 |
|  | Unknown | 82.8 | 1.5 | 0.02 | 0.02 | 0.00 | 0.008 | 0.6 |
|  | \*Parasitism | 81.3 | 0.2 | 0.00 | 0.00 | 0.00 | 0.001 | 0.1 |
| Adults emerged | Sex ratio | 81.1 | 40.5 | 0.50 | 0.50 | 0.04 | 0.301 | 21.6 |
| Adult females |  | 40.5 |  |  |  |  |  |  |
| Estimated fecundity  |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 10334.8 |  |  |  |  |  |  |
| Total mortality = |  | 91.9% |  |  |  | *Kg* = | 1.392 |  |
| Net reproductive rate (*Ro*) = |  | 10.3 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 21.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Agassiz, British Columbia in 2015. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 821.6 | 0.82 | 0.82 | 0.82 | 0.749 | 49.6 |
| L1 | Total | 178.4 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
|  | Unknown | 178.4 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
|  | \*Parasitism | 178.4 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| L2-4 | Total | 178.4 | 79.5 | 0.45 | 0.45 | 0.08 | 0.256 | 17.0 |
|  | Unknown | 178.4 | 75.1 | 0.43 | 0.42 | 0.08 | 0.242 | 16.0 |
|  | \*Parasitism | 103.3 | 4.5 | 0.03 | 0.03 | 0.00 | 0.014 | 1.0 |
| Pupae | Total | 98.9 | 36.8 | 0.37 | 0.37 | 0.04 | 0.202 | 13.4 |
|  | Unknown | 98.9 | 35.7 | 0.36 | 0.36 | 0.04 | 0.196 | 13.0 |
|  | \*Parasitism | 63.2 | 1.1 | 0.01 | 0.01 | 0.00 | 0.006 | 0.4 |
| Adults emerged | Sex ratio | 62.0 | 31.0 | 0.50 | 0.50 | 0.03 | 0.301 | 20.0 |
| Adult females | 31.0 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  | 7904.6 |  |  |  |  |  |  |
| Total mortality = | 93.8% |  |  |  | *Kg* = | 1.508 |  |
| Net reproductive rate (*Ro*) = | 7.9 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |

**Supplementary Material Table 22.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(caged plants)** at Agassiz, British Columbia in 2017. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | *k*-value | % generational mortality |
| Eggs | Unknown | 1000.0 | 670.2 | 0.67 | 0.67 | 0.67 | 0.482 | 38.0 |
| L1 | Total | 329.8 | 95.7 | 0.29 | 0.29 | 0.10 | 0.149 | 11.7 |
|  | Unknown | 329.8 | 95.1 | 0.29 | 0.29 | 0.10 | 0.148 | 11.7 |
|  | \*Parasitism | 234.7 | 0.6 | 0.00 | 0.00 | 0.00 | 0.001 | 0.1 |
| L2-4 | Total | 234.1 | 123.3 | 0.53 | 0.53 | 0.12 | 0.325 | 25.6 |
|  | Unknown | 234.1 | 122.7 | 0.52 | 0.52 | 0.12 | 0.323 | 25.5 |
|  | \*Parasitism | 111.4 | 0.5 | 0.00 | 0.00 | 0.00 | 0.001 | 0.1 |
| Pupae | Total | 110.9 | 3.2 | 0.03 | 0.03 | 0.00 | 0.013 | 1.0 |
|  | Unknown | 110.9 | 3.2 | 0.03 | 0.03 | 0.00 | 0.013 | 1.0 |
|  | \*Parasitism | 107.7 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 107.7 | 53.8 | 0.50 | 0.50 | 0.05 | 0.301 | 23.7 |
| Adult females |  | 53.8 |  |  |  |  |  |  |
| Potential progeny \*\* |  | 13722.4 |  |  |  |  |  |  |
| Realised progeny \*\*\* |  | 0.0 |  |  |  |  |  |  |
| Total mortality = |  | 89.2% |  |  |  | *Kg* = | 1.269 | 100.0 |
| Net reproductive rate (*Ro*) = |  | 13.7 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |  |

**Supplementary Material Table 23.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(rain cover)** at Agassiz, British Columbia in 2015. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 977.9 | 0.98 | 0.98 | 0.98 | 1.656 | 42.5 |
| L1 | Total | 22.1 | 8.1 | 0.37 | 0.37 | 0.01 | 0.197 | 5.1 |
|  | Unknown | 22.1 | 2.6 | 0.14 | 0.12 | 0.00 | 0.063 | 1.6 |
|  | \*Parasitism | 19.5 | 5.5 | 0.27 | 0.25 | 0.01 | 0.134 | 3.4 |
| L2-4 | Total | 14.0 | 11.6 | 0.83 | 0.83 | 0.01 | 0.772 | 19.8 |
|  | Unknown | 14.0 | 10.6 | 0.80 | 0.76 | 0.01 | 0.701 | 18.0 |
|  | \*Parasitism | 3.4 | 1.1 | 0.15 | 0.08 | 0.00 | 0.070 | 1.8 |
| Pupae | Total | 2.4 | 2.1 | 0.89 | 0.89 | 0.00 | 0.968 | 24.8 |
|  | Unknown | 2.4 | 2.0 | 0.88 | 0.84 | 0.00 | 0.907 | 23.3 |
|  | \*Parasitism | 0.4 | 0.1 | 0.13 | 0.06 | 0.00 | 0.061 | 1.6 |
| Adults emerged | Sex ratio | 0.3 | 0.1 | 0.50 | 0.50 | 0.00 | 0.301 | 7.7 |
| Adult females |  | 0.2 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny  | 36.8 |  |  |  |  |  |  |
| Total mortality = |  | 100.0% |  |  |  | *Kg* = | 3.894 |  |
| Net reproductive rate (*Ro*) = | 0.04 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 24.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(rain cover)** at Ottawa, Ontario in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 933.4 | 0.93 | 0.93 | 0.93 | 1.177 | 39.8 |
| L1 | Total | 66.6 | 4.7 | 0.07 | 0.07 | 0.00 | 0.032 | 1.1 |
|  | Unknown | 66.6 | 3.4 | 0.05 | 0.05 | 0.00 | 0.023 | 0.8 |
|  | \*Parasitism | 63.2 | 1.3 | 0.02 | 0.02 | 0.00 | 0.009 | 0.3 |
| L2-4 | Total | 61.9 | 56.4 | 0.91 | 0.91 | 0.06 | 1.047 | 35.4 |
|  | Unknown | 61.9 | 47.0 | 0.87 | 0.76 | 0.05 | 0.873 | 29.5 |
|  | \*Parasitism | 14.9 | 9.4 | 0.33 | 0.15 | 0.01 | 0.174 | 5.9 |
| Pupae | Total | 5.6 | 3.3 | 0.60 | 0.60 | 0.00 | 0.398 | 13.5 |
|  | Unknown | 5.6 | 2.7 | 0.52 | 0.49 | 0.00 | 0.322 | 10.9 |
|  | \*Parasitism | 2.9 | 0.6 | 0.16 | 0.11 | 0.00 | 0.076 | 2.6 |
| Adults emerged | Sex ratio | 2.2 | 1.1 | 0.50 | 0.50 | 0.00 | 0.301 | 10.2 |
| Adult females |  | 1.1 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potentia progeny  |  | 283.1 |  |  |  |  |  |  |
| Total mortality = |  | 99.8% |  |  |  | *Kg* = | 2.954 |  |
| Net reproductive rate (*Ro*) = |  | 0.3 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 25.** Diamondback moth, *Plutella xylostella*, pooled **s**tage specific life table **(rain cover caged)** at Ottawa, Ontario in 2018. ***qx*** (apparent mortality caused by known (e.g., parasitism) or unknown abiotic and biotic factors); ***dx*** (the number of individuals dying in a stage); ***lx***(the number of individuals entering the stage; ***rx*** (real mortality, the ratio of individuals dying in a particular stage compared to the initial starting number at the beginning of the study); ***mx*** (marginal attack rate, an estimate of the number of individuals entering a stage that would be attacked by an agent (e.g., parasitoids) if it were acting in the absence of other mortality factors); ***k-value*** (level of mortality in a given stage); ***Kg*** (total generational mortality, which is the sum of the k-values); and ***R0*** (the net reproductive rate of increase).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Life stage** | **Mortality factor** | ***Ix*** | ***dx*** | ***mx*** | ***qx*** | ***rx*** | ***k*-value** | **% generational mortality** |
| Eggs | Unknown | 1000.0 | 935.8 | 0.94 | 0.94 | 0.94 | 1.193 | 65.5 |
| L1 | Total | 64.2 | 8.4 | 0.13 | 0.13 | 0.01 | 0.061 | 3.3 |
|  | Unknown | 64.2 | 3.6 | 0.06 | 0.06 | 0.00 | 0.026 | 1.4 |
|  | \*Parasitism | 60.5 | 4.8 | 0.08 | 0.07 | 0.00 | 0.035 | 1.9 |
| L2-4 | Total | 55.8 | 23.9 | 0.43 | 0.43 | 0.02 | 0.244 | 13.4 |
|  | Unknown | 55.8 | 23.9 | 0.43 | 0.43 | 0.02 | 0.244 | 13.4 |
|  | \*Parasitism | 31.8 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Pupae | Total | 31.8 | 1.6 | 0.05 | 0.05 | 0.00 | 0.022 | 1.2 |
|  | Unknown | 31.8 | 1.6 | 0.05 | 0.05 | 0.00 | 0.022 | 1.2 |
|  | \*Parasitism | 30.3 | 0.0 | 0.00 | 0.00 | 0.00 | 0.000 | 0.0 |
| Adults emerged | Sex ratio | 30.3 | 15.1 | 0.50 | 0.50 | 0.02 | 0.301 | 16.5 |
| Adult females |  | 15.1 |  |  |  |  |  |  |
| Estimated fecundity |  | 254.88 |  |  |  |  |  |  |
| Potential progeny |  | 3855.7 |  |  |  |  |  |  |
| Total mortality = |  | 97.0% |  |  |  | *Kg* = | 1.820 |  |
| Net reproductive rate (*Ro*) = |  | 3.9 |  |  |  |  |  |  |
|  \* Parasitism *k*-value measured with assumption of 50:50 male:female sex ratio. |  |  |  |

**Supplementary Material Table 26**. Mean (±SE) percent parasitism of larval and pupal diamondback moth, *Plutella xylostella*, based on uncaged sentinel plants in cabbage plots at Agassiz, British Columbia.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Host life stage attacked** | **Feeding niche** | **2015** | **2016** | **2017** |
|  |  |  | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** |
| Braconidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Microplitis plutellae* Muesbeck | larva | primary parasitoid | – | – | – | – | – | – | – | – | – |
|  *Microplitis* sp. | larva | primary parasitoid | – | – | – | – | – | – | – | 0.44 (0.44) | – |
|  *Cotesia* sp. | larva | primary parasitoid | – | – | – | – | 2.78 (2.78) | – | – | 0.40 (0.40) | – |
|  *Diolcogaster claritibia* (Papp) | larva | primary parasitoid | 1.70 (1.70) | – | – | – | – | – | – | 2.86 (1.32) | 2.22 (2.22) |
| Chalcididae |  |  |  |  |  |  |  |  |  |  |  |
|  *Conura albifrons* (Walsh) | pupa | facultative hyperparasitoid | – | – | 1.91 (1.13) | – | – | – | – | – | – |
| Eulophidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Oomyzus sokolowskii* (Kurdjumov) | larva, prepupa | primary parasitoid | 2.88 (2.88) | 7.23 (2.72) | – | – | 13.76 (5.07) | – | – | 5.47 (2.48) | – |
| Ichneumonidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Diadegma insulare* (Cresson) | larva (emerges from pupa) | primary parasitoid | 15.56 (5.52) | 3.93 (1.53) | 5.76 (1.60) | – | 25.00 (4.93) | – | 22.79 (5.47) | 13.54 (5.48) | – |
|  *Diadromus subtilicornis* (Gravenhorst) | pupa | primary parasitoid | – | 0.93 (0.67) | 3.76 (2.51) | – | – | 16.83 (5.93) | – | – | 8.90 (5.24) |
|  *Gelis* sp. | pupa  | facultative hyperparasitoid | – | – | 0.67 (0.67) | – | – | 1.09 (1.09) | – | – | – |

**Supplementary Material Table 27**. Mean (±SE) percent parasitism of larval and pupal diamondback moth, *Plutella xylostella*, based on uncaged sentinel plants in cabbage plots at Ottawa, Ontario1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Host life stage attacked** | **Feeding niche** | **2016** | **2017** | **2018** |
|  |  |  | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** |
| Braconidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Microplitis plutellae* Muesbeck | larva | primary parasitoid | 5.66 (2.12) | – | – | 10.42 (2.80) | 4.41 (1.96) | – | – | 9.11 (4.61) | – |
|  *Cotesia* sp. | larva | primary parasitoid | – | – | – | – | – | – | – | – | – |
|  *Diolcogaster claritibia* (Papp) | larva | primary parasitoid | – | 0.33 (0.33) | – | – | 0.46 (0.46) | – | – | – |  |
| Chalcididae |  |  |  |  |  |  |  |  |  |  |  |
|  *Conura albifrons* (Walsh) | pupa | facultative hyperparasitoid | – | – | – | – | – | – | – | – | – |
| Eulophidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Oomyzus sokolowskii* (Kurdjumov) | larva, prepupa | primary parasitoid | – | – | – | – | – | – | – | – | – |
| Ichneumonidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Diadegma insulare* (Cresson) | larva (emerges from pupa) | primary parasitoid | 19.26 (2.76) | 2.27 (1.41) | – | 17.40 (3.76) | 10.59 (2.88) | – | 8.04 (8.04) | 26.07 (3.59) |  |
|  *Diadromus subtilicornis* (Gravenhorst) | pupa | primary parasitoid | – | – | 12.10 (5.45) | – | 0.21 (0.21) | 8.11 (2.99) | – | – | 12.46 (3.43) |
|  *Gelis* sp. | pupa  | facultative hyperparasitoid | – | – | – | – | – | – | – | – | – |

1Egg stage parasitism by *Diadegma insulare* 2016 - 0.28 (0.20); 2017 - 13.19 (4.31)

**Supplementary Material Table 28**. Mean (±SE) percent parasitism of larval and pupal diamondback moth, *Plutella xylostella*, based on uncaged sentinel plants in cabbage plots at Charlottetown, Prince Edward Island.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Host life stage attacked** | **Feeding niche** | **2017** | **2018** | **2019** |
|  |  |  | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** |
| Braconidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Microplitis plutellae* Muesbeck | larva | primary parasitoid | – | – | – | 5.43 (2.73) | 8.18 (2.30) | – | 0.72 (0.39) | 3.81 (1.20) | – |
|  *Cotesia* sp. | larva | primary parasitoid | – | – | – | – | – | – | 0.38 (0.38) | 1.16 (0.52) | – |
|  *Diolcogaster claritibia* (Papp) | larva | primary parasitoid | – | – | – | – | – | – | – | – | – |
| Chalcididae |  |  |  |  |  |  |  |  |  |  |  |
|  *Conura albifrons* (Walsh) | pupa | facultative hyperparasitoid | – | – | – | – | – | – | – | – | – |
| Eulophidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Oomyzus sokolowskii* (Kurdjumov) | larva, prepupa | primary parasitoid | – | – | – | – | – | – | – | – | – |
| Ichneumonidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Diadegma insulare* (Cresson) | larva (emerges from pupa) | primary parasitoid | – | – | – | – | 2.72 (1.31) | – | – | 5.68 (1.71) | – |
|  *Diadromus subtilicornis* (Gravenhorst) | pupa | primary parasitoid | – | – | 1.00 (1.00) | – | – | 8.57 (3.08) |  | – | 5.32 (1.71) |
|  *Gelis* sp. | pupa  | facultative hyperparasitoid | – | – | 2.96 (1.68) | – | – | – | – | – | 1.97 (1.25) |

**Supplementary Material Table 29**. Mean (±SE) percent parasitism of larval and pupal diamondback moth, *Plutella xylostella*, based on uncaged sentinel plants in cabbage plots at St. John’s, Newfoundland and Labrador.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Host life stage attacked** | **Feeding niche** | **2017** | **2018** | **2019** |
|  |  |  | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** | **L1** | **L2-L4** | **Pupa** |
| Braconidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Microplitis plutellae* Muesbeck | larva | primary parasitoid | 1.66 (1.24) | – | – | 3.05 (1.57) | – | – | 20.79 (5.52) | 10.63 (4.97) | – |
|  *Cotesia* sp. | larva | primary parasitoid | – | – | – | – | – | – | – | – | – |
|  *Diolcogaster claritibia* (Papp) | larva | primary parasitoid | – | – | – | – | – | – | – | – | – |
| Chalcididae |  |  |  |  |  |  |  |  |  |  |  |
|  *Conura albifrons* (Walsh) | pupa | facultative hyperparasitoid | – | – | – | – | – | – | – | – | – |
| Eulophidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Oomyzus sokolowskii* (Kurdjumov) | larva, prepupa | primary parasitoid | – | 7.23 (2.72) | – | – | – | – | – | – | – |
| Ichneumonidae |  |  |  |  |  |  |  |  |  |  |  |
|  *Diadegma insulare* (Cresson) | larva (emerges from pupa) | primary parasitoid | 12.91 (5.46) | 13.30 (3.89) | – | 25.25 (8.80) | 3.69 (1.60) | – | – | 27.06 (6.47) | – |
|  *Diadromus subtilicornis* (Gravenhorst) | pupa | primary parasitoid | – | – | – | – | – | – | – | – | – |
|  *Gelis* sp. | pupa  | facultative hyperparasitoid | – | – | – | – | – | – | – | – | – |