**Supplementary Table 1.** Organic Materials Review Institute-listed products applied for insect pest and foliar disease control in the organic muskmelon pollination trial (experiment 2) at Geneva, New York, in 2021 and 2022

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| --- | --- | --- | --- |
| Date (2021) | Pesticides and Rates | Date (2022) | Pesticides and Rates |
| 6/29 | Pyrethrins (Pyganic Specialty at 2.3 L ha-1; Valent; Tokyo, Japan) | 7/15 | Copper octanoate (Cueva at 9.4 L ha-1; Certis Biologicals; Columbia, MD) |
| 7/13 | Copper octanoate (Cueva at 9.4 L ha-1) | 7/20 | Azadirachtin + pyrethrins (Azera at 2.8 L ha-1; McLaughlin Gormley King Company; Minneapolis, MN) |
| 7/21 | Copper sulfate pentahydrate (CS2005 at 0.9 L ha-1; Magna-Bon Agricultural Control Solutions; Okeechobee, FL) | 7/22 | Rhamnolipid biosurfactant (Zonix at 1.7 kg ha-1; Stepan Agricultural Solutions; Northbrook, IL) |
| 7/29 | Copper octanoate (Cueva at 9.4 L ha-1) + *Bacillus amyloliquefaciens* (Double Nickel at 7 L ha-1) | 7/27 | Copper octanoate (Cueva at 9.4 L ha-1) + azadirachtin + pyrethrins (Azera at 2.8 L ha-1) |
| 8/6 | *B. amyloliquefaciens* (Double Nickel at 7 L ha-1) | 8/2 | *B. amyloliquefaciens* (Double Nickel at 7 L ha-1) + pyrethrins (Pyganic Specialty at 2.3 L ha-1) |
| 8/20 | Potassium silicate (Sil-Matrix at 1.8 L ha-1; Certis Biological) | 8/10 | Rhamnolipid biosurfactant (Zonix at 1.7 kg ha-1) + pyrethrins (Pyganic Specialty at 2.8 L ha-1) |
| 8/16 | *B. amyloliquefaciens* (Double Nickel at 7 L ha-1) + azadirachtin + pyrethrins (Azera at 2.8 L ha-1) |
| 8/24 | Pyrethrins (Pyganic Specialty at 2.3 L ha-1) + *B. amyloliquefaciens* (Double Nickel at 9.4 L ha-1) |

**Supplementary Table 2.** Monthly air temperature and relative humidity (average, minimum and maximum) in organic muskmelon at Geneva, New York, in 2021, within experiment 1 (integrated pest management). Values are averaged over two blocks per treatment.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Treatment | Month | Average temperature (°C) | Average minimum temperature (°C) | Average maximum temperature (°C) | Average relative humidity (%) | Average minimum relative humidity (%) | Average maximum relative humidity (%) |
| Landscape fabric mesotunnel | June | 26.8 | 19.1 | 37.7 | 61.1 | 36.7 | 82.5 |
| July | 22.2 | 16.8 | 30.1 | 84.0 | 63.1 | 96.2 |
| August | 22.8 | 17.4 | 30.7 | 91.1 | 77.8 | 97.8 |
| Ryegrass/white clover mesotunnel | June | 25.1 | 18.6 | 33.8 | 71.3 | 51.4 | 87.6 |
| July | 21.6 | 16.8 | 28.1 | 93.2 | 81.5 | 99.1 |
| August | 21.9 | 16.9 | 28.9 | 95.9 | 86.7 | 99.6 |
| Ryegrass mesotunnel | June | 23.8 | 18.1 | 31.4 | 83.4 | 68.2 | 92.9 |
| July | 21.2 | 17.0 | 26.6 | 94.0 | 83.7 | 99.1 |
| August | 22.6 | 17.4 | 29.6 | 96.3 | 88.1 | 99.3 |
| Non-covered | June | 26.2 | 18.9 | 35.7 | 62.5 | 39.0 | 83.2 |
| July | 21.7 | 16.2 | 29.3 | 82.8 | 59.3 | 96.7 |
| August | 22.8 | 17.1 | 30.9 | 86.1 | 62.6 | 97.7 |

**Supplementary Table 3.** Monthly temperature and relative humidity (average, minimum and maximum) in organic muskmelon within experiment 1 (integrated pest management) at Geneva, New York, in 2022. Values are averaged over two blocks per treatment.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Treatment | Month | Average temperature (°C) | Average minimum temperature (°C) | Average maximum temperature (°C) | Average relative humidity (%) | Average minimum relative humidity (%) | Average maximum relative humidity (%) |
| Landscape fabric mesotunnel | June | 23.5 | 14.9 | 34.1 | 68.0 | 40.4 | 92.1 |
| July | 22.6 | 16.3 | 30.3 | 82.1 | 62.8 | 95.2 |
| August | 22.7 | 16.6 | 31.2 | 85.7 | 67.2 | 96.5 |
| Ryegrass/white clover mesotunnel | June | 22.1 | 14.6 | 30.5 | 77.1 | 54.8 | 92.8 |
| July | 21.6 | 16.2 | 28.3 | 90.1 | 79.7 | 95.6 |
| August | 21.9 | 17.0 | 28.6 | 88.5 | 75.9 | 95.4 |
| Ryegrass mesotunnel | June | 21.1 | 14.5 | 28.6 | 84.2 | 68.0 | 94.4 |
| July | 21.7 | 16.2 | 28.4 | 91.9 | 82.9 | 96.1 |
| August | 21.9 | 16.4 | 28.9 | 90.2 | 79.6 | 95.9 |
| Non-covered | June | 22.1 | 14.2 | 31.1 | 69.1 | 40.7 | 92.5 |
| July | 22.9 | 16.2 | 29.7 | 78.1 | 61.2 | 89.9 |
| August | 22.6 | 18.1 | 27.9 | 85.7 | 72.6 | 93.8 |