**Results from field trial 2011:**

**1.1 Insect counts on melons**x

|  |  |  |  |
| --- | --- | --- | --- |
| Treatment | Cucumber beetlesy | Squash bugs  (adults + nymphs) | Squash bug egg clusters |
| B1X | 1.02 ± 0.14 ab | 0.12 ± 0.06 | 0 |
| B2X | 1.67 ± 0.20 a | 0.03 ± 0.02 | 0 |
| N | 1.43 ± 0.18 ab | 0.11 ± 0.06 | 0 |
| M1X | 1.41 ± 0.18 ab | 0.10 ± 0.05 | 0 |
| M3X | 1.08 ± 0.15 ab | 0.09 ± 0.05 | 0 |
| MB | 1.17 ± 0.15 ab | 0.06 ± 0.03 | 0 |
| MSV | 1.24 ± 0.16 ab | 0.01 ± 0.01 | 0 |
| SV | 0.84 ± 0.12 b | 0.08 ± 0.04 | 0 |
| IFR+S | 1.05 ± 0.14 ab | 0.05 ± 0.03 | 0 |
| RC | 1.14 ± 0.16 ab | 0.04 ± 0.03 | 0 |
| RC+IFR+S | 0.85 ± 0.13 b | 0.04 ± 0.03 | 0 |
| W | 0.98 ± 0.14 ab | 0.11 ± 0.05 | 0 |
| W+S | 1.40 ± 0.18 ab | 0.01 ± 0.01 | 0 |
| F; p; d,fz | 2.36; 0.0109; 12, 91 | 0.97; 0.4804; 12, 91 | NA |

xmeans ± standard error

yValues followed by different letters are significantly different using Tukey’s LSD

zanalysis was done using PROC GLIMMIX (Generalized Linear Mixed Models) ANOVA in SAS (9.3, Cary, NC), α = 0.05.

**1.2 Insect counts on pumpkins**x

|  |  |  |  |
| --- | --- | --- | --- |
| Treatment | Cucumber beetles | Squash bugs  (adults + nymphs)y | Squash bug egg clusters |
| B1X | 0.6 ± 0.2 | 3.3 ± 1.2 ab | 2.1 ± 0.5 |
| B2X | 0.4 ± 0.1 | 3.4 ± 1.2 ab | 2.4 ± 0.5 |
| N | 0.5 ± 0.1 | 6.0 ± 2.1 a | 3.5 ± 0.8 |
| M1X | 0.5 ± 0.1 | 2.5 ± 0.9 ab | 2.3 ± 0.5 |
| M3X | 0.5 ± 0.1 | 1.9 ± 0.7 ab | 3.1 ± 0.7 |
| MB | 0.6 ± 0.2 | 0.7 ± 0.3 b | 2.3 ± 0.5 |
| MSV | 0.4 ± 0.1 | 1.8 ± 0.6 ab | 3.0 ± 0.7 |
| SV | 0.5 ± 0.1 | 3.3 ± 1.2 ab | 3.5 ± 0.8 |
| IFR+S | 0.7 ± 0.2 | 2.7 ± 1.0 ab | 2.4 ± 0.5 |
| RC | 0.3 ± 0.1 | 0.6 ± 0.3 b | 1.0 ± 0.3 |
| RC+IFR+S | 0.5 ± 0.1 | 1.3 ± 0.5 ab | 2.0 ± 0.5 |
| W | 0.7 ± 0.2 | 2.7 ± 1.0 ab | 1.9 ± 0.4 |
| W+S | 0.9 ± 0.2 | 1.5 ± 1.0 ab | 2.7 ± 0.6 |
| F; p; d,fz | 1.02; 0.4346; 12, 91 | 2.76; 0.0030; 12, 91 | 1.79; 0.0620; 12, 91 |

xmeans ± standard error

yValues followed by different letters are significantly different using Tukey’s LSD.

zanalysis was done using PROC GLIMMIX (Generalized Linear Mixed Models) ANOVA in SAS (9.3, Cary, NC), α = 0.05.

**1.3 Melon Yield**y

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Treatment | Marketable | Marketable wt (lbs) | Unmarketable | Unmarketable wt (lbs) | % marketabley |
| B1X | 1.6 ± 0.3 | 6.5 ± 1.2 | 1.4 ± 0.4 | 5.0 ± 1.2 | 46 ± 11 |
| B2X | 1.4 ± 0.3 | 5.7 ± 1.1 | 1.4 ± 0.4 | 5.9 ± 1.2 | 59 ± 10 |
| N | 1.3 ± 0.3 | 5.9 ± 1.1 | 1.3 ± 0.3 | 4.8 ± 1.1 | 48 ± 10 |
| M1X | 1.3 ± 0.2 | 5.4 ± 1.0 | 2.4 ± 0.3 | 7.9 ± 1.0 | 65 ± 9 |
| M3X | 1.1 ± 0.3 | 4.4 ± 1.1 | 1.8 ± 0.3 | 5.4 ± 1.1 | 61 ± 10 |
| MB | 0.9 ± 0.3 | 4.1 ± 1.1 | 2.1 ± 0.4 | 7.1 ± 1.2 | 69 ± 10 |
| MSV | 1.6 ± 0.3 | 6.4 ± 1.1 | 1.2 ± 0.3 | 4.8 ± 1.1 | 47 ± 10 |
| SV | 1.6 ± 0.3 | 7.6 ± 1.3 | 1.3 ± 0.4 | 5.8 ± 1.4 | 49 ± 12 |
| IFR+S | 0.9 ± 0.3 | 2.9 ± 1.1 | 1.7 ± 0.3 | 4.4 ± 1.1 | 60 ± 10 |
| RC | 1.5 ± 0.3 | 5.9 ± 1.1 | 2.1 ± 0.3 | 6.6 ± 1.1 | 49 ± 10 |
| RC+IFR+S | 1.0 ± 0.3 | 2.8 ± 1.1 | 1.7 ± 0.3 | 5.2 ± 1.1 | 63 ± 10 |
| W | 1.2 ± 0.3 | 5.0 ± 1.1 | 2.3 ± 0.4 | 7.3 ± 1.2 | 58 ±10 |
| W+S | 0.9 ± 0.3 | 3.6 ± 1.1 | 1.8 ± 0.3 | 5.9 ± 1.1 | 64 ± 10 |
| F; p; d,fz | 1.20; 0.3209; 12, 38 | 1.67; 0.1138; 12, 38 | 1.44; 0.1916; 12, 38 | 1.00; 0.4676; 12, 38 | 0.61; 0.8183; 12, 38 |

zanalysis was done using mixes models ANOVA in SAS (9.3, Cary, NC), α = 0.05.

yyield is per plant ± standard error

**1.4 Pumpkin Yield**y

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Treatment | Marketable | Marketable wt (lbs) | Unmarketable | Unmarketable wt (lbs) |
| B1X | 0.9 ± 0.3 | 2.2 ± 0.7 | 1.0 ± 0.4 | 1.5 ± 0.6 |
| B2X | 0 | 0 | 1.7 ± 0.6 | 1.3 ± 0.8 |
| N | 0.5 ± 0.3 | 1.4 ± 0.9 | 1.8 ± 0.4 | 0.2 ± 0.7 |
| M1X | 0.6 ± 0.2 | 1.3 ± 0.6 | 1.0 ± 0.3 | 2.0 ± 0.5 |
| M3X | 1.0 ± 0.3 | 3.1 ± 0.7 | 0.9 ± 0.4 | 1.0 ± 0.6 |
| MB | 0.5 ± 0.3 | 1.4 ± 0.7 | 0.9 ± 0.4 | 1.8 ± 0.6 |
| MSV | 0.3 ± 0.3 | 0.7 ± 0.7 | 1.7 ± 0.4 | 1.9 ± 0.5 |
| SV | 0 | 0 | 1.5 ± 0.4 | 2.7± 0.6 |
| IFR+S | 0.4 ± 0.2 | 1.1 ± 0.6 | 1.0 ± 0.3 | 1.7 ± 0.4 |
| RC | 0 | 0 | 1.0 ± 0.5 | 0.7 ± 0.8 |
| RC+IFR+S | 0.4 ± 0.3 | 1.1 ± 0.8 | 1.0 ± 0.4 | 1.7 ± 0.6 |
| W | 0.2 ± 0.3 | 0.8 ± 0.9 | 1.5 ± 0.5 | 2.4 ± 0.7 |
| W+S | 0.2 ± 0.3 | 0.5 ± 0.7 | 1.3 ± 0.4 | 2.6 ± 0.6 |
| F; p; d,fz | 1.10; 0.4058; 12, 22 | 1.35; 0.2596; 12, 22 | 0.72; 0.7217; 12, 22 | 0.64; 0.7904; 12, 22 |

zanalysis was done using mixes models ANOVA in SAS (9.3, Cary, NC), α = 0.05.

yyield is per plant ± standard error

**1.5 Melon Percent Survival**

Treatment

**1.6 Pumpkin Percent Survival**

Treatment

**1.7 Precipitation at the Organic Crops Unit from 1 Jun 2011 – 10 Aug 2011**

**1.8 Average temperature at the Organic Crops Unit from 1 Jun 2011 – 10 Aug 2011**

**2.1 Percent leaf area consumed at 72 hr**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mycotrol-O | | *Beauveria bassiana*  11-98 | | MBI-203 | | | *Isaria fumosorosea*  strain 3581 | |
| Mycotrol-O | Sterile water | Bb 11-98 | Sterile water | MBI (1X) | MBI (2X) | Sterile water | Ifr 3581 | Sterile  water |
| 32.2 ± 3.4 | 38.7 ± 3.4 | 32.0 ± 5.5 | 44.3 ± 5.6 | 34.9 ± 2.8 **b** | 42.2 ± 2.8 **ab** | 50.4 ± 2.8 **a** | 46.1 ± 1.5 | 49.6 ± 1.5 |
| F = 1.85; p = 0.2111;  d,f = 1, 8 | | F = 2.47; p = 0.1549;  d,f = 1, 8 | | F = 7.74; p = 0.0069;  d,f = 2,12 | | | F = 2.63; p = 0.1434;  d,f = 1,8 | |

**2.2 Beetle Survival: Mycotrol-O**

**2.3 Beetle Survival: *Beauveria bassiana* 11-98**

**2.4 Beetle Survival: MBI-203**

**2.5 Beetle Survival: *Isaria fumosorosea* 3581**

**2.6 Beetle mycosis**

|  |  |
| --- | --- |
|  | Mycosed beetles/total beetles exposed |
| Mycotrol-O | 13/70 |
| *Beauveria bassiana* 11-98 | 29/100 |
| *Isaria fumosorosea* strain 3581 | 39/100 |