**Supplementary materials**

**Table S1.** Systematic classification of the cultivated plants intercropped with the tomato, the in bold are the host plants of *H. armigera.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. | Taxon | Class | Order | Family | Genus | Species |
| 1 | African mango | Magnoliopsida | Malpighiales | Irvingiaceae | *Irvingia* | *Gabonensis* |
| 2 | Cassava | Magnoliopsida | Euphorbiales | Euphorbiaceae | *Manihot* | *Esculenta* |
| **3** | **Cowpea** | **Magnoliopsida** | **Fabales** | **Fabaceae** | ***Vigna***  | ***Unguiculata*** |
| 4 | Crin-crin | Magnoliopsida | Malvales | Malvaceae | *Corchorus* | *Olitorus* |
| 5 | Garden egg | Magnoliopsida | Solanales | Solanaceae | *Solanum*  | *Macrocarpon* |
| **6** | **Groundnut** | **Magnoliopsida** | **Fabales** | **Fabaceae** | ***Arachis***  | ***Hypogaea*** |
| 7 | Hot pepper | Magnoliopsida | Solanales | Solanaceae | *Capsicum*  | *Anuum* |
| **8** | **Maize** | **Liliopsida** | **Cyperales** | **Poaceae** | ***Zea***  | ***Mays*** |
| 9 | Oil palm | Liliopsida | Arecales | Arecaceae | *Elaeis* | *Guineensis* |
| **10** | **Okra (gombo)** | **Magnoliopsida** | **Malvales** | **Malvaceae** | ***Abelmoschus***  | ***Esculentus*** |
| **11** | **Orange** | **Magnoliopsida** | **Sapindales** | **Rutaceae** | ***Citrus***  | ***Sinensis*** |
| 12 | Papaya | Magnoliopsida | Violales | Caricaceae | *Carica* | *Papaya* |
| **13** | **Pigeon pea** | **Magnoliopsida** | **Fabales** | **Fabaceae** | ***Cajanus*** | ***Cajan*** |
| 14 | Pineapple | Liliopsida | Bromeliales | Bromeliaceae | *Ananas* | *Comosus* |
| 15 | Talinum | Magnoliopsida | Caryophyllales | Talinaceae | *Talinum* | *Triangulare* |
| **16** | **Tomato** | **Magnoliopsida** | **Solanales** | **Solanaceae** | ***Solanum***  | ***Lycopersicum*** |
| 17 | Triumphetta | Magnoliopsida | Malvales | Malvaceae | *Triumphetta* | Sp |

**Table S2.** Systematic classification of arthropod species collected in the tomato agroecosystems

|  |  |  |  |
| --- | --- | --- | --- |
| **Order** | **Family** | **Taxon name** | **Trophic groups** |
| Prostigmata | [‎Tetranychidae](https://www.google.cm/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiqisH7ufLMAhXJMBoKHZ4oCyMQs2YIKCgAMAA&url=https%3A%2F%2Ffr.wikipedia.org%2Fwiki%2FTetranychidae&usg=AFQjCNFIPgTxJLEjyLgApZk1glgEToJhvA&bvm=bv.122676328,d.d24) | *Tetranychus* sp | Herbivore |
| Araneae | Araneidae | *Araneus* sp | Predator |
|  | Linyphiidae | *Erigone* sp | Predator |
|  | Linyphiidae | *Araneus* sp | Predator |
| Blattodea | Blattellidae | *Blattellidae* | Detritivore |
| Chilopoda | [‎Scolopendridae](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwiJ2un_t_LMAhVCrxoKHeK9DBEQs2YIJSgAMAA&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FScolopendridae&usg=AFQjCNEc27mFhVi60xv6MSi_6VjvH1o6_A&sig2=3mOuHMt0p1AjD8wz__Jnuw&bvm=bv.122676328,d.d2s) | Undet. sp. | Predator |
| Coleoptera | Attelabidae | *Parapoderus* sp | Herbivore |
|  | Carabidae | *Tetragonoderus* sp | Predator |
|  | Cerambycidae | *Obereopsis variipes* | Herbivore |
|  | Chrysomelidae | *Altise* sp | Herbivore |
|   | Chrysomelidae | *Chiridopsis aubei* | Herbivore |
|   | Chrysomelidae | *Lema cephalotes* | Herbivore |
|   | Chrysomelidae | *Nisotra dilecta* | Herbivore |
|  | Coccinellidae | *Coccinella septempunctata* | Omnivore |
|   | Elateridae | *Agriotes* sp | Herbivore |
|  | Elateridae | *Heteroderes* sp | Herbivore |
|  | Meloidae | *Hycleus* sp | Herbivore |
|   | Tenebrionidae | *Gonocephalum simplex* | Herbivore |
| Dermaptera | Forficulae | Undet. sp | Omnivore |
| Diptera | Tephritidae | *Dacus ciliatus* | Herbivore |
|  | Agromyzidae | *Lyriomiza sativae*  | Herbivore |
| Hemiptera | Coreidae | *Clavigralla tomentosicollis* | Herbivore |
|  | Coreidae | *Leptoglossus* sp | Herbivore |
|  | Pentatomidae | *Caura pugillator* | Herbivore |
|  | Pentatomidae | *Nezara viridulla* | Herbivore |
|  | Reduviidae | *Acanthaspis vidua* | Predator |
| Hymenoptera | Apididae | *Apis* sp | Herbivore |
|  | Braconidae | *Aleiodes* sp | Parasitoid |
|   | Braconidae | *Apanteles* sp | Parasitoid |
|  | Encyrtidae | *Acerophagus* sp | Parasitoid |
|  | Formicidae | *Camponotus brutus* | Omnivore |
|   | Formicidae | *Camponotus sericeus* | Omnivore |
|  | Formicidae | *Camponotus* sp1 | Omnivore |
|  | Formicidae | *Camponotus* sp2 | Omnivore |
|  | Formicidae | *Camponotus* sp3 | Omnivore |
|   | Formicidae | *Crematogaster* sp | Omnivore |
|  | Formicidae | *Monomorium bicolor* | Omnivore |
|   | Formicidae | *Monomorium* sp | Omnivore |
|   | Formicidae | *Paltothyreus tarsatus* | Predator |
|  | Formicidae | *Paratrechina longicornis* | Omnivore |
|   | Formicidae | *Pheidole megacephala* | Omnivore |
|  | Formicidae | *Pheidole* sp1 | Omnivore |
|  | Formicidae | *Pheidole* sp2 | Omnivore |
|  | Formicidae  | *Odontomachus troglodytes* | Predator |
|   | Vespidae | *Belonogaster juncea* | Omnivore |
|  Blattodea | Termitidae | *Macrotermes* sp. | Detritivore |
| Lepidoptera | Noctuidae | *Helicoverpa armigera* | Herbivore |
|   | Noctuidae | *Spodoptera* sp | Herbivore |
|  | Nymphalidae | *Acraea serena* | Herbivore |
|   | Pieridae | *Catopsilia florella* | Herbivore |
|  | Pieridae | *Eurema brigitta* | Herbivore |
|   | Pieridae | *Eurema* sp | Herbivore |
| Mantodea | Mantidae | *Mantis religiosa* | Predator |
| Orthoptera | Acrididae | *Acrida* sp | Herbivore |
|   | Acrididae | *Aiolopus simulatrix*  | Herbivore |
|   | Acrididae | *Humbe tenuicornis* | Herbivore |
|  | Acrididae | *Trilophidia conturbata* | Herbivore |
|  | Gryllidae | *Modicogryllus* sp | Omnivore |
|   | Gryllidae | *Scapsipedus* sp | Omnivore |
|  | Phalangospidae | *Homeogryllus reticulatus* | Omnivore |
|   | Acrididae | *Gastrimargus africanus* | Herbivore |
|   | Pyrgomorphidae | *Chrotogonus senegalensis* | Herbivore |
|   | Pyrgomorphidae | *Zonocerus variegatus* | Herbivore |
|  | Tettigoniidae | *Anepitacta* sp | Herbivore |
|  | Tettigoniidae  | *Conocephalus* sp | Omnivore |
| [‎Polydesmida](https://www.google.cm/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjt263ftPLMAhWHnRoKHQL1DCQQs2YIIygAMAA&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FPolydesmida&usg=AFQjCNGpX6Kekl7vgY3CmW_-SwXLkNSesA&bvm=bv.122676328,d.d24) | Paradoxosomatidae | Undet. sp | Detritivore |
| Isopoda | Porcellionidae | Undet. sp | Detritivore |

**Table S3.** Effect of crop type on the abundances of all the arthropod taxa collected in the tomato agroecosystems

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Taxa**  | **Df** | **Residual Df** | **Delta Deviance** | **Residual Deviance** | **Delta AIC** | **LRT** | **P-value** |
| *Pheidole* spp | 1 | 58 | 108.89 | 1877.76 | 106.89 | 108.89 | 0.0000 |
| *Araneus* spp | 1 | 58 | 10.87 | 202.39 | 8.87 | 10.87 | 0.0010 |
| *Gonocephalum simplex* | 1 | 58 | 0.57 | 613.58 | -1.43 | 0.57 | 0.4506 |
| *Paltothyreus tarsatus* | 1 | 58 | 119.74 | 974.24 | 117.74 | 119.74 | 0.0000 |
| *Acanthaspis vidua* | 1 | 58 | 3.43 | 40.74 | 1.43 | 3.43 | 0.0639 |
| *Acerophagus* sp | 1 | 58 | 3.09 | 24.12 | 1.09 | 3.09 | 0.0789 |
| *Acraea serena* | 1 | 58 | 2.86 | 38.52 | 0.86 | 2.86 | 0.0907 |
| *Acrida* sp | 1 | 58 | 1.43 | 28.96 | -0.57 | 1.43 | 0.2316 |
| *Agriotes* sp | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Aiolopus simulatrix* | 1 | 58 | 13.20 | 138.45 | 11.20 | 13.20 | 0.0003 |
| *Aleiodes* sp | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Altise* sp | 1 | 58 | 1.22 | 70.08 | -0.78 | 1.22 | 0.2702 |
| *Anepictata* sp | 1 | 58 | 5.12 | 49.56 | 3.12 | 5.12 | 0.0237 |
| *Apanteles* sp | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Apis* sp | 1 | 58 | 0.86 | 17.12 | -1.14 | 0.86 | 0.3541 |
| *Belonogaster juncea* | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Camponotus brutus* | 1 | 58 | 0.16 | 60.86 | -1.84 | 0.16 | 0.6871 |
| *Camponotus sericeus* | 1 | 58 | 0.86 | 19.89 | -1.14 | 0.86 | 0.3541 |
| *Camponotus* sp2 | 1 | 58 | 3.43 | 58.42 | 1.43 | 3.43 | 0.0639 |
| *Camponotus* sp3 | 1 | 58 | 12.09 | 8.66 | 10.09 | 12.09 | 0.0005 |
| *Camponotus* sp1 | 1 | 58 | 6.69 | 215.72 | 4.69 | 6.69 | 0.0097 |
| *Catopsilla florella* | 1 | 58 | 4.87 | 46.33 | 2.87 | 4.87 | 0.0274 |
| *Caura pugillator* | 1 | 58 | 0.86 | 19.89 | -1.14 | 0.86 | 0.3541 |
| *Chiridopsis aubei* | 1 | 58 | 56.42 | 25.44 | 54.42 | 56.42 | 0.0000 |
| *Chrotogonus senegalensis* | 1 | 58 | 7.88 | 20.38 | 5.88 | 7.88 | 0.0050 |
| *Clavigralla tomentosicollis* | 1 | 58 | 0.86 | 17.12 | -1.14 | 0.86 | 0.3541 |
| *Coccinella septempunctata* | 1 | 58 | 0.86 | 19.89 | -1.14 | 0.86 | 0.3541 |
| *Conocephalus* sp | 1 | 58 | 1.14 | 26.06 | -0.86 | 1.14 | 0.2846 |
| *Crematogaster* sp | 1 | 58 | 52.95 | 1244.10 | 50.95 | 52.95 | 0.0000 |
| *Dacus ciliatus* | 1 | 58 | 2.19 | 29.25 | 0.19 | 2.19 | 0.1391 |
| *Eurema brigitta* | 1 | 58 | 2.29 | 42.09 | 0.29 | 2.29 | 0.1302 |
| *Eurema* sp | 1 | 58 | 0.05 | 30.35 | -1.95 | 0.05 | 0.8161 |
| *Gastrimargus africanus* | 1 | 58 | 8.87 | 84.71 | 6.87 | 8.87 | 0.0029 |
| *Gonocephalum simplex* | 1 | 58 | 0.57 | 613.58 | -1.43 | 0,57 | 0.4506 |
| *Helicoverpa armigera* | 1 | 58 | 40.62 | 213.35 | 38.62 | 40.62 | 0.0000 |
| *Heteroderes* sp | 1 | 58 | 0.57 | 15.80 | -1.43 | 0.57 | 0.4493 |
| *Homeogryllus reticulatus* | 1 | 58 | 0.29 | 38.33 | -1.71 | 0.29 | 0.5877 |
| *Humbe tenuicornis* | 1 | 58 | 1.14 | 20.52 | -0.86 | 1.14 | 0.2846 |
| *Hycleu* sp | 1 | 58 | 16.07 | 108.39 | 14.07 | 16.07 | 0.0001 |
| *Lema cephalotes* | 1 | 58 | 4,53 | 13.45 | 2.53 | 4.53 | 0.0334 |
| *Leptoglossus* sp | 1 | 58 | 0.78 | 17.19 | -1.22 | 0.78 | 0.3762 |
| *Lyniphiidae* | 1 | 58 | 0.05 | 55.67 | -1.95 | 0.05 | 0.8312 |
| *Lyriomiza sativae* | 1 | 58 | 3.09 | 21.35 | 1.09 | 3.09 | 0.0789 |
| *Macrotermes* sp | 1 | 58 | 14.31 | 378.33 | 12.31 | 14.31 | 0.0002 |
| *Mantis religiosa* | 1 | 58 | 0.17 | 24.68 | -1.83 | 0.17 | 0.6796 |
| *Modicogryllus* sp | 1 | 58 | 0.00 | 65.64 | -2.00 | 0.00 | 0.9668 |
| *Monomorium bicolor* | 1 | 58 | 39.50 | 782.90 | 37.50 | 39.50 | 0.0000 |
| *Monomorium* sp | 1 | 58 | 14.31 | 314.82 | 12.31 | 14.31 | 0.0002 |
| *Nezara viridula* | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Nisotra dilecta* | 1 | 58 | 0.86 | 23.71 | -1.14 | 0.86 | 0.3541 |
| *Obereopsis variipes* | 1 | 58 | 0.86 | 19.89 | -1.14 | 0.86 | 0.3541 |
| *Odontomachus troglodytes* | 1 | 58 | 3.43 | 77.51 | 1.43 | 3.43 | 0.0639 |
| *Paltothyreus tarsatus* | 1 | 58 | 119.74 | 974.24 | 117.74 | 119.74 | 0.0000 |
| *Paradoxosomatidae* | 1 | 58 | 1.72 | 32.51 | -0.28 | 1.72 | 0.1901 |
| *Parapoderus* sp | 1 | 58 | 4.58 | 59.90 | 2.58 | 4.58 | 0.0324 |
| *Paratrechina longicornis* | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Porcellionidae* | 1 | 58 | 72.54 | 26.08 | 70.54 | 72.54 | 0.0000 |
| *Scapsipedus* sp | 1 | 58 | 1.43 | 26.19 | -0.57 | 1.43 | 0.2316 |
| *Scolopendridae* | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |
| *Sporodoptera* sp | 1 | 58 | 0.86 | 19.89 | -1.14 | 0.86 | 0.3541 |
| *Tetranogonoderus* sp | 1 | 58 | 2.86 | 42.34 | 0.86 | 2.86 | 0.0907 |
| *Tetranychus* sp | 1 | 58 | 1.72 | 47.41 | -0.28 | 1.72 | 0.1901 |
| *Trilophidia conturbata* | 1 | 58 | 0.29 | 7.90 | -1.71 | 0.29 | 0.5927 |