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Chilli Thrips (castor thrips, Assam thrips, yellow tea thrips, strawberry thrips), *Scirtothrips dorsalis* Hood, Provisional Management Guidelines[1]

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Description

Adult thrips are small about 0.5 – 1.2 mm long. It is difficult to recognize this thrips with the naked eye, and definitive identification is best accomplished at approximately 40 to 80 x magnification. Eggs are about 0.075 mm long and 0.070 mm wide, and are inserted inside plant tissue. The egg stage lasts for 6-8 days, which is followed by two larval stages (1st and 2nd instars) that last for 6-7 days. The prepupal period is short (~ 24 h) and the pupal period lasts 2-3 days. The larvae are off-white. Also the adults are pale yellow to grayish-white in color with incomplete dark stripes on the dorsal surface where adjacent abdominal segments meet. The life cycle is completed in 14-20 days. The chilli thrips female oviposits 60 to 200 eggs in her life time at the rate of 2-4 eggs per day.

Symptoms

Chilli thrips attacks all above ground parts of its host plants, and prefers the young leaves, buds and fruits. Heavy feeding damage turns tender leaves, buds, and fruits bronze to black in color. Damaged leaves curl upward and appear distorted. Infested plants become stunted or dwarfed, and leaves with petioles detach from the stem, causing defoliation in some plants. The abundance of chilli thrips is low in the rainy season, but becomes high during the dry season.

Sampling Plan

It is important to check plants with abnormal growth. At the initial stage of infestation, the underside surfaces of the leaves become shiny. These leaves soon become discolored and curly. Collect 5-20 leaves from the symptomatic plants and place them in a ziplock bag to prevent adults from escaping. Label the bag with collection locality information, host plant, date collected and name of collector. and send these samples for next-day delivery to an expert for further processing to establish or confirm their identity.

Management

Studies were conducted recently on St. Vincent to evaluate various insecticides in controlling chilli

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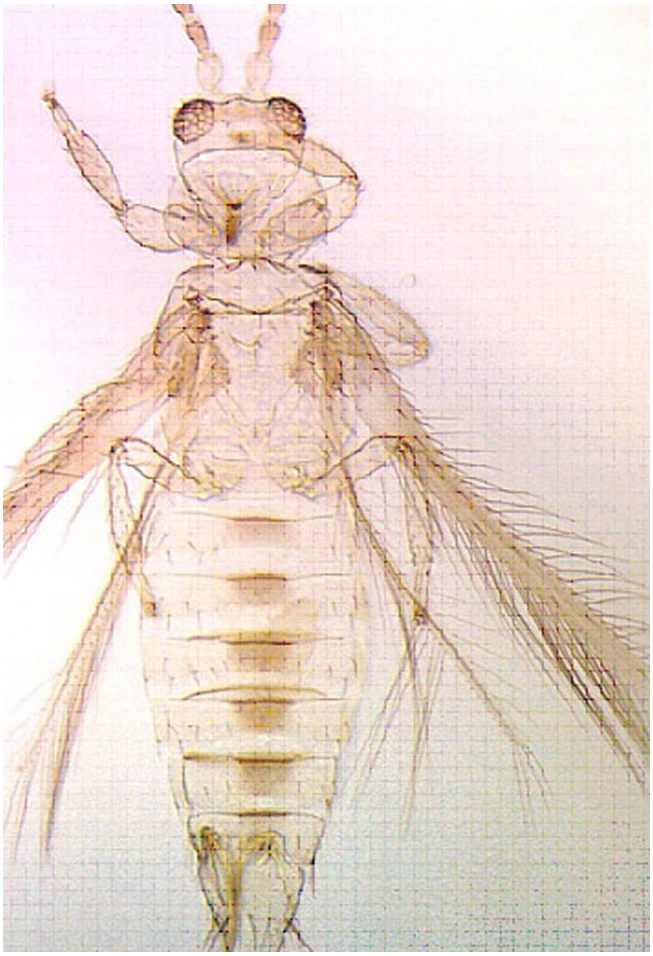

Figure 1. *Scirtothrips dorsalis* adult showing the incomplete dark stripes on the dorsal surface where adjacent abdominal segments meet. Credits: Laurence MOund, CSIRO Division of Entomology, Australia

Figure 2. Curling of pepper leaves caused by feeding of *S. dorsalis*. Credits: M. A. Ciomperlik, APHIS, USDA

thrips in pepper. The insecticides listed in the tables below were found to suppress the chilli thrips. For detailed information about the effectiveness of these insecticides, consult the manuscript titled `*Comparative effectiveness of chemical insecticides against the chilli thrips, Scirtothrips dorsalis Hood (Thysanoptera: Thripidae), on pepper and their compatibility with natural enemie's* at http://cta.ufl.edu/thrips.htm.

Federal and Florida laws require that all pesticides must be handled and applied in strict accordance with the label and worker protection standards (re-entry times, protective clothing, etc.). For complete information pertaining to use of any insecticide, follow the label. Mention of trade names or commercial products in this article is solely for the purpose of providing specific information and does not imply recommendation or endorsement by the U.S. Department of Agriculture or the University of Florida.

References

Amin, B. W. 1979. Leaf fall disease of chilly and pepper in Maharashtra, India. Pans, 25: 131-134.

Amin, P. W., Reddy, D. V. R., Ghanekar, A. M. 1981. Transmission of tomato spotted wilt virus, the causal agent of bud necrosis of peanut, by *Scirtothrips dorsalis* and *Frankliniella schultzei*. Plant Disease 65: 663-665.

CABI. 2003. Crop protection compendium: global module. CABI Publishing**,** Wallingford, UK.

Chang, N. T., Parkeker, B. L., Skinner, M., Lewis, T. 1995. Major pest thrips in Taiwan, pp. 105 – 108, Thrips biology and management: Proceedings

of the 1993 International Conference on Thysanoptera. Plenum Press, New York.

Chu, C. C., M. A. Ciomperlik, Niann-Tai Chang, M. Richards, and T. J. Henneberry. 2005. Developing and evaluating traps for monitoring *Scirtothrips dorsalis* (Hood) Florida Entomologist (submitted).

EPPO and CABI. 2003. *Scirtothrips dorsalis*. Data Sheets on Quarantine Pests. In: Quarantine Pests for Europe. 2nd edition. No. 142. CAB International, Wallingford, UK.

FNGLA. (Florida Nursery, Growers and Landscape Association). 2003. The unlucky 13. Report of the Major Nursery Pest & Disease Identification Task Force. Florida Nursery Growers, and Landscape Association, Orlando, Florida, USA. 1 p.

Hoddle, M.S. and L. A. Mound. 2003. The genus *Scirtothrips* in Australia (Insecta, Thysanoptera, Thripidae). Zootaxa 268: 1-40

Kodomari, S. 1978. Control of yellow tea thrips, *Scirtothrips dorsalis* Hood, in tea field at east region in Shizuoka Prefecture. Tea Research Journal, No. 48: 46-51.

Meissner, H., A. Lemay, D. Borchert, B. Nietschke, A. Neeley, R. Magarey, M. Ciomperlik, C. Brodel and T. Dobbs. 2005. Evaluation of possible pathways of introduction of *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae) from the Caribbean into the continental United States. Center for Plant Health Science and Technology

Mound, L. A., Palmer, J. M. 1981. Identification, distribution and host plants of the pest species of *Scirtothrips* (Thysanoptera: Thripidae). Bulletin of Entomological Research 71: 467-479.

Sanap, M. M. and R. N. Nawale. 1987. Chemical control of chilli thrips, *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae). Vegetable Science 14(2): 195-199.

Saxena, P., Vijayaraghavan, M. R., Sarbhoy, R. K., Raizada, U. 1996. Pollination and gene flow in chillies with *Scirtothrips dorsalis* as pollen vectors. Phytomorphology 46: 317-327.

Seal, D. R., M. Ciomperlik, M. L. Richards and W. Klassen. 2005. Distribution of the Chilli thrips, *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae), within pepper plants and within pepper fields on St. Vincent. Florida Entomologist (submitted).

Seal, D. R., M. Ciomperlik, M. L. Richards and W. Klassen. 2005. Comparative effectiveness of chemical insecticides against the chilli thrips, *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae), on pepper and their compatibility with natural enemies. Crop Protection (submitted).

Suwanbutr, S., Tongklad, C., Uhnchit, W., Thayamanon, P., Witthayarug, W. Khewpoompung, P. 1992. A field trial on the efficacy of some insecticides for controlling thrips attacking pummelo. Proceedings of the International Symposium on Tropical Fruit: Frontier in Tropical Fruit Research. Pattaya City, Thailand, 20-24 May 1991. Acta Horticulturae 321: 876-881.

Tsuchiya, M., Masui, S. Kuboyama, N. 995. Color attraction of yellow tea thrips (*Scirtothrips dorsalis* Hood). Japanese Journal of Applied Entomology and Zoology 39: 299-303.

Venette, R.C., Davis, E.E. 2004. Chilli thrips/yellow thrips, *Scirtothrips dorsalis* Hood (Thysanoptera: Thripidae) Mini Pest Risk Assessment. Univ. of Minnesota, St. Paul, MN, USA. 31 pp.

Table 1. Insecticides for controlling chilli thrips on ornamentals.

Active Ingredient	Trade Name	Pesticide Class	Signal Word	Application
Novaluron	Pedestal SC	Benzoylphenyl urea	Caution	Foliar spray
[1]Chlorofenapyr	Pylon	Pyrrole		Foliar spray
Imidacloprid	Marathon 60 WP	Neonicotinoid	Caution	Foliar spray
Spinosyn A + B	Conserve SC	Spinosyn	Caution	Foliar spray
Abamectin	Avid 0.15 EC	Avermectin	Warning	Foliar spray
Cyfluthrin	Tempo 2	Pyrethroid	Warning	Foliar spray
Azadirachtin	Azatin XL	Botanical	Caution	Foliar spray
Azadirachtin	Ornazin 3 EC	Botanical	Warning	Foliar spray

[1] Use restricted to greenhouses.

***NOTE**: Each insecticide should be used sparingly and rotated with one or more others each of a different class. As information comes available on the effectiveness against this pest of indigenous or introduced biological control agents, measures to integrate their use will be critically important in achieving sustainable suppression.*

Table 2. Insecticides for controlling chilli thrips on fruits and vegetables.

Active Ingredient	Trade Name	Pesticide Class	Signal Word	Application
Novaluron	Ramon 0.83 EC	Benzoylphenyl urea	Caution	Foliar spray
[1]Chlorofenapyr	Pylon	Pyrrole		Foliar spray
Imidacloprid	Provado	Neonicotinoid	Caution	Foliar spray
Spinosyn A + B	SpinTor 2 SC	Spinosyn	Caution	Foliar spray
Abamectin	Agrimek 0.15 EC	Avermectin	Warning	Foliar spray
Cyfluthrin	Baythroid 2	Pyrethroid	Danger	Foliar spray
Azadirachtin	Neemix 4.5	Botanical	Caution	Foliar spray

[1] Use restricted to greenhouses.

***NOTE**: Each insecticide should be used sparingly and rotated with one or more others each of a different class. As information comes available on the effectiveness against this pest of indigenous or introduced biological control agents, measures to integrate their use will be critically important in achieving sustainable suppression.*