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**Coffee berry borer predator –
*Karnyothrips flavipes***

1. The Executive Director presents his compliments and attaches a note with information about the finding in Kenya of *Karnyothrips flavipes*, a predator of the coffee berry borer, which is known to be present in coffee producing countries in Africa, Asia and South and Central America. The predator could be an important component in biological control strategies against the coffee berry borer, which is estimated to cause US\$500 million in losses to the coffee sector each year, as noted at the ICO Seminar on the Coffee Berry Borer in September 2009 (see presentations at http://dev.ico.org/event_pdfs/cbb/cbb.htm).
2. Members are invited to inform representatives of the coffee sector about the finding of this predatory thrips and, as suggested in the attached document, to take action to check if it has been recorded in their countries or consult entomologists about how to establish a sampling programme, in view of the potential impact on the coffee berry borer.

A PREDATOR OF THE COFFEE BERRY BORER: IS IT PRESENT IN YOUR COUNTRY?

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Recently, the predatory thrips *Karnyothrips flavipes* (Thysanoptera: Phlaeothripidae) (Figure 1) was reported in Kenya as a predator of coffee berry borer eggs and larvae (see Jaramillo *et al.* 2010). The 1-2 mm long thrips enters the hole bored by the coffee berry borer (*Hypothenemus hampei*; Coleoptera: Curculionidae) on the coffee berry, and deposits eggs inside, with adult thrips feeding on immature stages of the coffee berry borer. It is important for coffee-producing countries to initiate a search for *K. flavipes*, as it could become an important component in the arsenal of biological control strategies against the coffee berry borer.



Figure 1. *Karnyothrips flavipes* mounted on slide (left) and feeding on coffee berry borer egg (right). Photos: left, courtesy of L. Mound (CSIRO), and right, J. Jaramillo (ICIPE).

Karnyothrips flavipes has been reported in Central Africa, Australia, Barbados, Brazil, the Cayman Islands, China, Costa Rica, Cuba, Cyprus, Egypt, Guadeloupe, India, Japan, the Mediterranean region, St. Lucia, St. Vincent, Trinidad, Venezuela, Taiwan, and the United States (California, Florida, Hawaii, Louisiana, and Mississippi). It had also been reported in

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Puerto Rico, although a recent examination of the mounted specimens revealed they had been misidentified. The report from Kenya (Jaramillo et al. 2010) is the first case of *K. flavipes* preying on Coleoptera; it was previously known to prey on whiteflies, scales, and mites. The thrips is a predator; therefore, it won't consume plant tissue.

What should you do?

Consult taxonomists and/or entomologists to find out whether this thrips has already been recorded in your country. *Karnyothrips flavipes* has been previously classified in other genera, including *Anthothrips*, *Cryptothrips*, *Haplothrips*, *Hindsiana*, *Karynia*, *Watsoniella*, and *Zygothrips*. This must be kept in mind, as *K. flavipes* might have been classified under one of these genera in your country.

Sampling

If there is no evidence that *K. flavipes* is present in your country, consult with entomologists on how to establish a sampling programme. *K. flavipes* might be present in plants other than coffee, and therefore, the sampling programme should cover different plants and geographic areas. Sampling could include sweeping vegetation and then removing thrips from the net using an aspirator; collecting directly from flowers, fruits, or bark; or using a Berlese funnel to collect from debris. If *K. flavipes* has already been recorded in your country, or if it were found during sampling, then the next step would be to bring it into coffee plantations, with continuous monitoring to determine whether it feeds on the coffee berry borer, and whether it becomes established.

Identification

For appropriate thrips preservation and slide-mounting techniques please visit the following web site: http://anic.ento.csiro.au/thrips/field_lab/index.html. The taxonomic keys cited below should allow you to identify *K. flavipes*. If you need copies of the appropriate pages please email F. E. Vega (Fernando.Vega@ars.usda.gov).

Mound, L.A. and R. Marullo. 1996. The thrips of Central and South America: an introduction (Insecta: Thysanoptera). Associated Publishers, Gainesville, FL, 487 p.

Pitkin, B.R. 1976. A revision of the Indian species of *Haplothrips* and related genera (Thysanoptera: Phlaeothripidae). Bulletin of the British Museum (Natural History) Entomology 34:223-280.

Priesner, H. 1960. A monograph of the Thysanoptera of the Egyptian deserts. Publications de l'Institut du Desert d'Egypte, No. 13. 549 p.

Reference

Jaramillo *et al.* 2010. Molecular diagnosis of a previously unreported predator-prey association in coffee: *Karnyothrips flavipes* predation on the coffee berry borer. *Naturwissenschaften* 97:291-298. Email author for copy: jjaramillos@gmail.com