

**ICE 2012** DAEGU  
KOREA

# XXIV International Congress of Entomology

'New Era in Entomology'

August 19-25, 2012 | Daegu, Korea

**PROGRAM**





# XXIV International Congress of Entomology

'New Era in Entomology'

August 19-25, 2012 | Daegu, Korea

ICE 2012 DAEGU KOREA

PS7TH440

Others

P7

## Morphometric, molecular and biological studies of the *Thrips tabaci* Lind. (Thys: thripidae) populations collected from onion and tobacco in Iran

Lida Fekrat<sup>1</sup>, Shahab Manzari<sup>2</sup>, Parviz Shishehbor<sup>3</sup>

<sup>1</sup>Ferdowsi university of Mashhad, Iran, <sup>2</sup>Iranian Research Institute of Plant Protection, Iran, <sup>3</sup>Shahid Chamran university of Ahvaz, Iran

The onion thrips has ability to form biotypes or subspecies in different geographical regions and on different host plants. In this study, 22 populations of this pest were collected from tobacco and onion in 17 provinces of Iran. 24 continuous variables were measured for each specimen on 631 slide-mounted females. The populations were compared using principal component and canonical discriminant analysis. In spite of some overlap, populations collected from tobacco were distinct from those collected from onion. Thrips individuals were projected on the first two principal components, which together accounted for 73.98% of overall variance. Eigenvalues of PC-I and PC-II were 15.81 and 1.20, respectively. The length ratio of 4th/7th antennal segments had the highest influence on PC-I. In canonical discriminant analysis, the first two functions contributed most to the separation between populations which together accounted for 98.38% of the total variation in the data. Also, 85.8% of original grouped cases were correctly classified. To assess population genetic structure of *T. tabaci*, genomic DNA was extracted using DNeasy Tissue and Blood Kit (Quiagene). The mitochondrial cytochrome oxidase gene, subunit I (COI) was amplified and sequenced using C1-J-1751 and C1-N-2191 primers. The maximum parsimony, maximum likelihood and neighbor joining and bootstrap analyses were carried out using PAUP\*. The most-parsimonious tree (length=168, RI=0.9129, CI=0.8631) and other trees obtained from other methods of analysis showed two distinct clades: 1) thrips collected from tobacco and 2) those collected from onion. The robustness of these clades was supported with the bootstrap values of 100% and 91%, respectively.

---

**Keywords:** *Thrips tabaci*, onion, tobacco, Iran, Morphometric, molecular study

---

All abstracts are subject to approval once submitted with the attendance certification issued by ICE2012