

Daily and seasonal dynamics of the house fly *Musca domestica* L. as revealed by semi-automatic trap collections

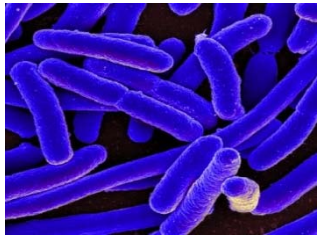


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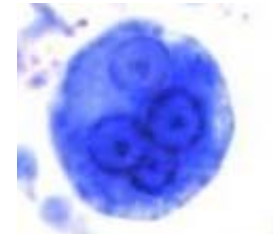
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Musca domestica = house fly



E. coli



E. histolytica

- Carry up to 6 million bacteria on **its body** (Esten & Mason, 1908)
- >100 species of pathogenic organisms in **the digestive tract** (Harwood & James, 1979)

Flies deposit **thousands of bacterium** every time **they land**

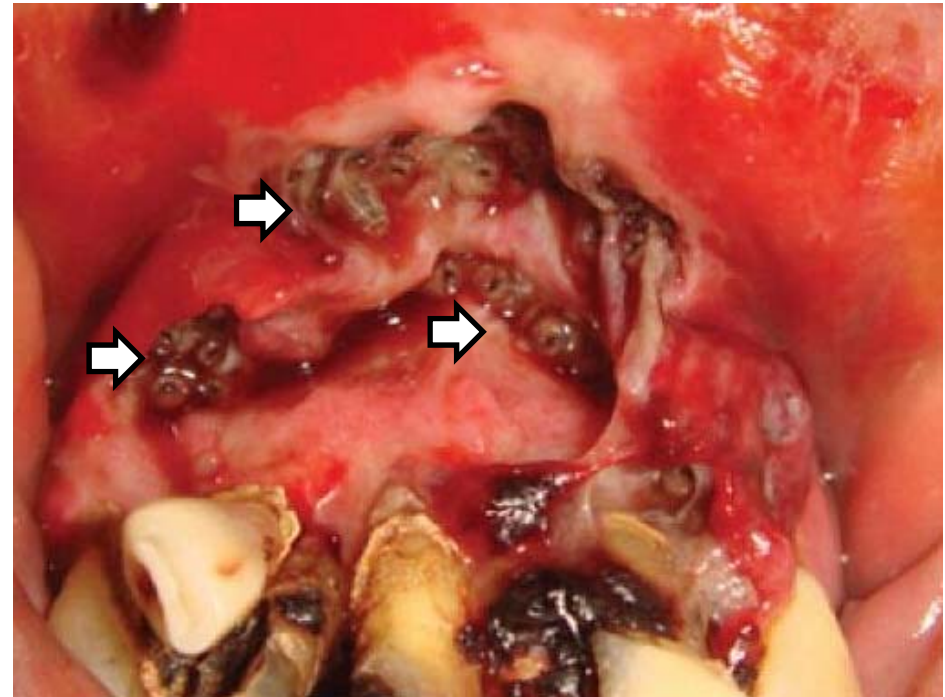


Significant public health threat



Annoyance

Myiasis



(Rajkkumar et al., 2014)

Objective



A better understanding of the **seasonal and daily activity of house flies**



effective fly control programs

To determine **seasonal abundance and daily activity of *M. domestica*** in suburban area of Chiang Mai province, northern Thailand



Study site

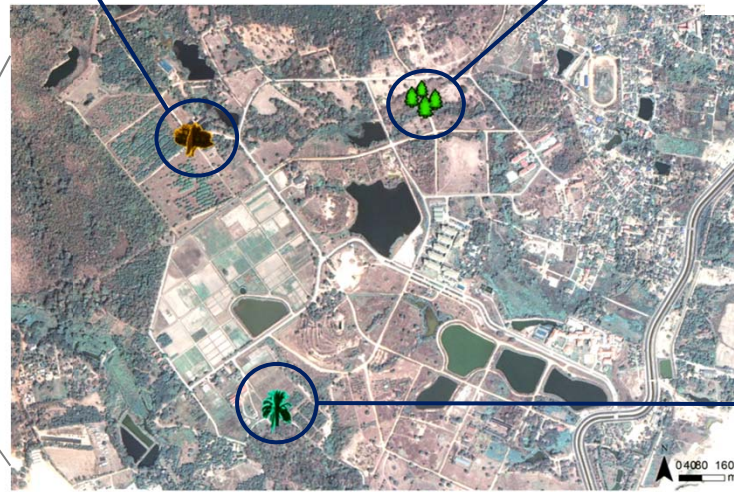


Longan orchard



Forest area

Chiang Mai Agricultural Research, Extension, and Training Center



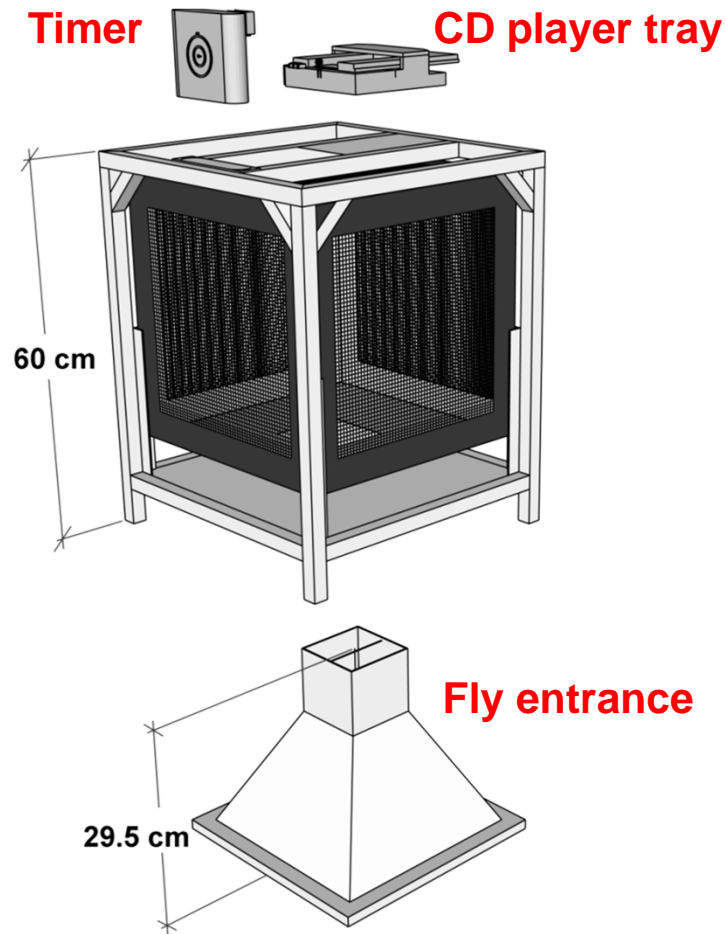
Forest area Longan orchard Palm plantation



Palm plantation

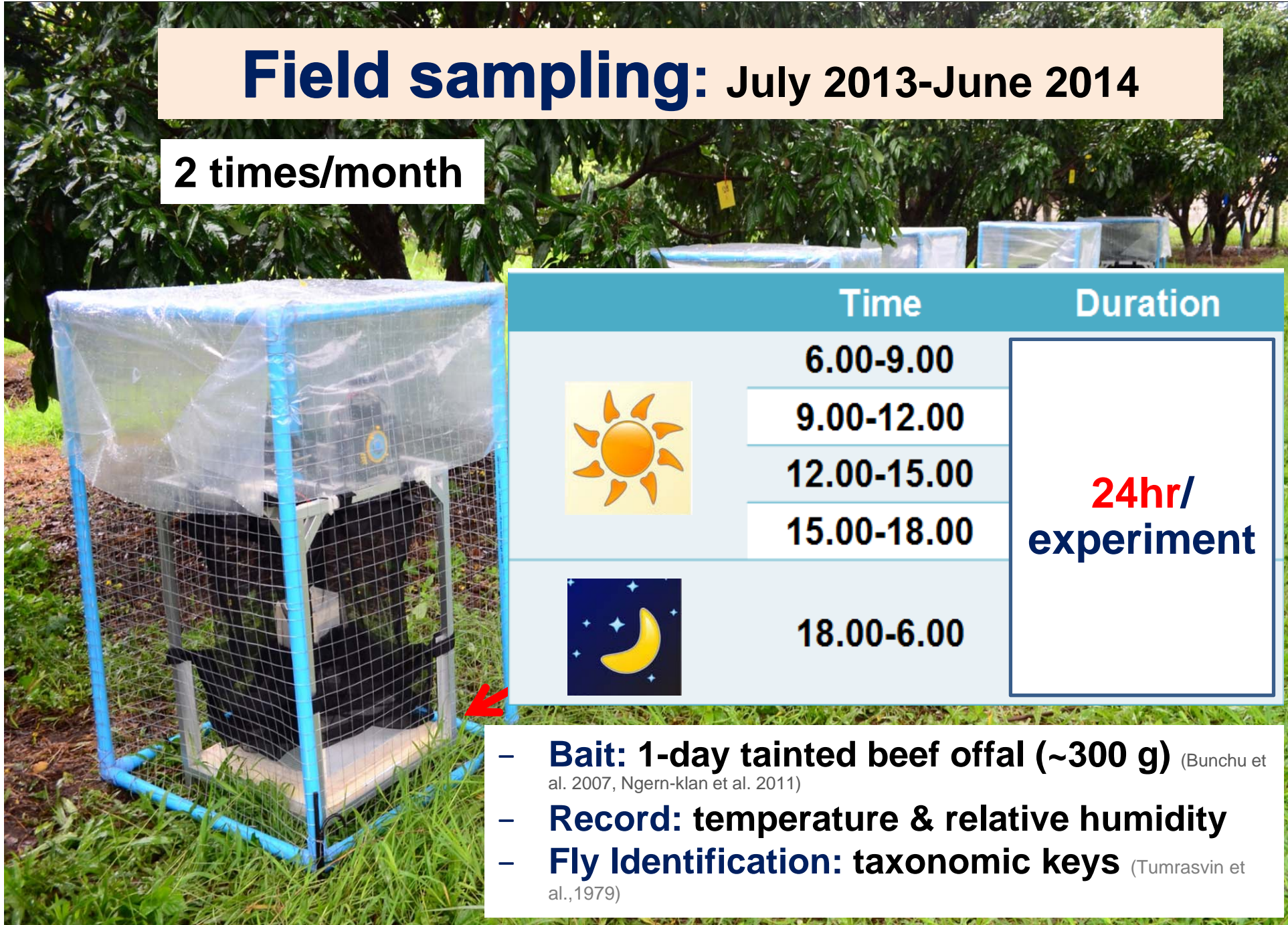
Semi-automatic trap



invented by Prof. Kom Sukontason



Field sampling: July 2013-June 2014

2 times/month

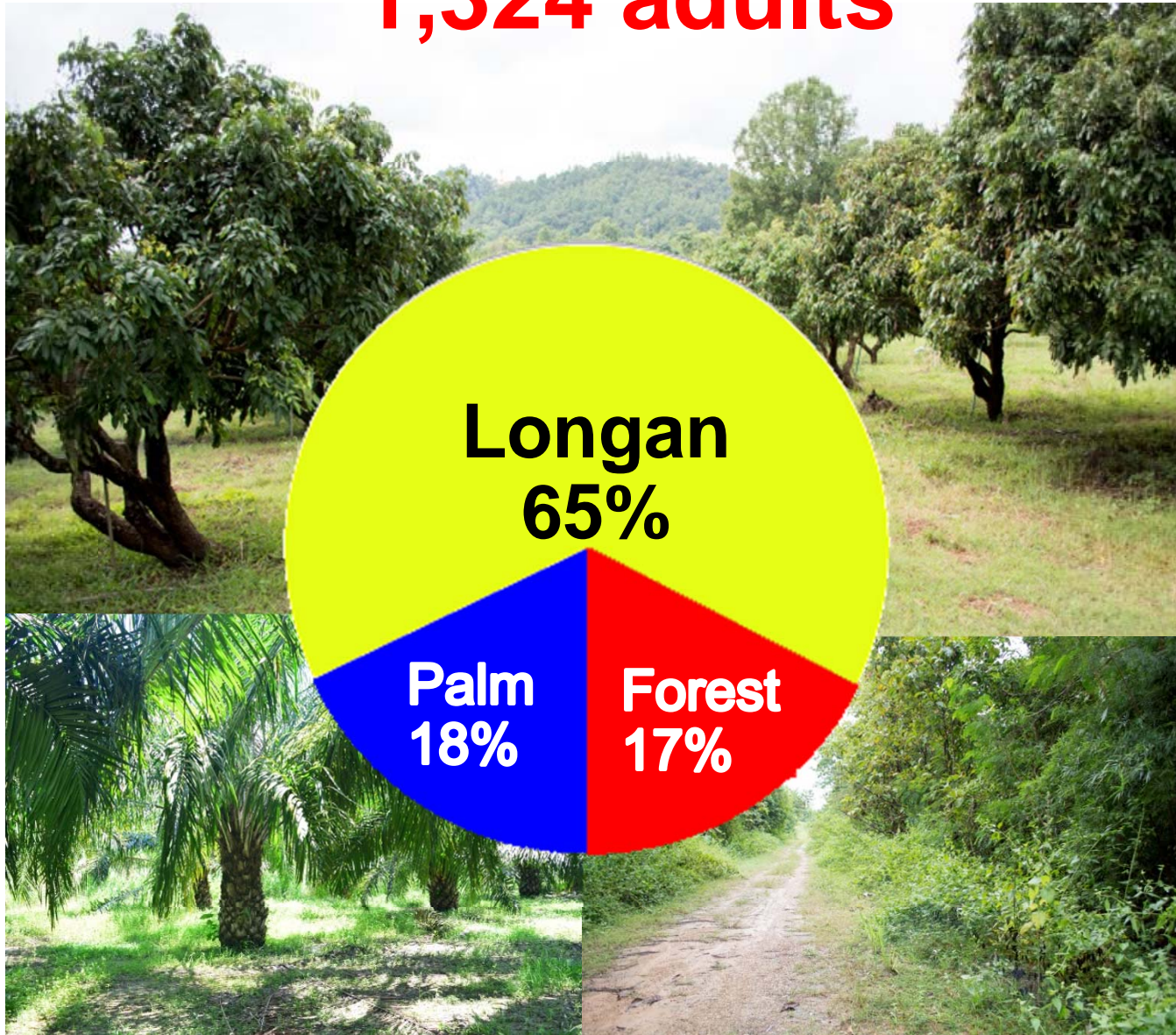


| | Time | Duration |
|---|-------------|-----------------------------|
|  | 6.00-9.00 | 24hr/ experiment |
| | 9.00-12.00 | |
| | 12.00-15.00 | |
| | 15.00-18.00 | |
|  | 18.00-6.00 | |

- **Bait:** 1-day tainted beef offal (~300 g) (Bunchu et al. 2007, Ngern-klan et al. 2011)
- **Record:** temperature & relative humidity
- **Fly Identification:** taxonomic keys (Tumrasvin et al., 1979)

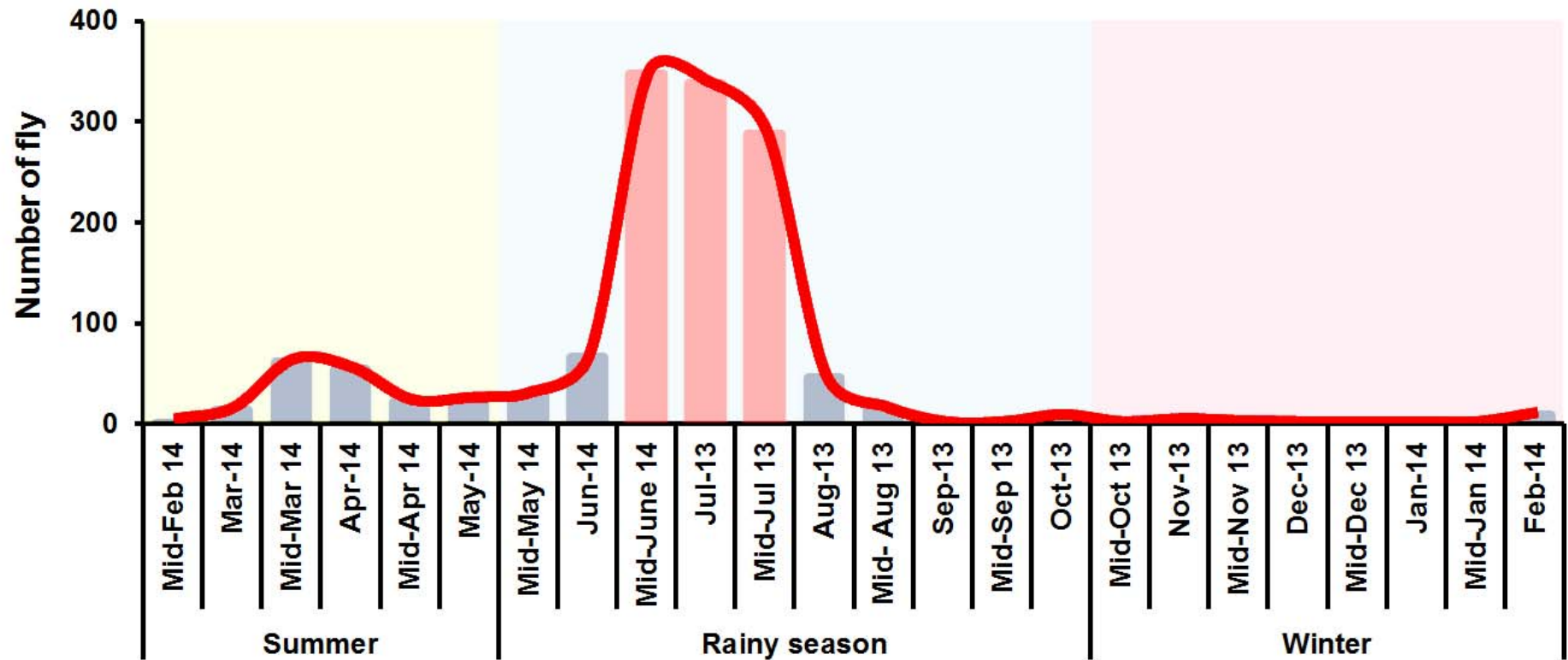


1,324 adults

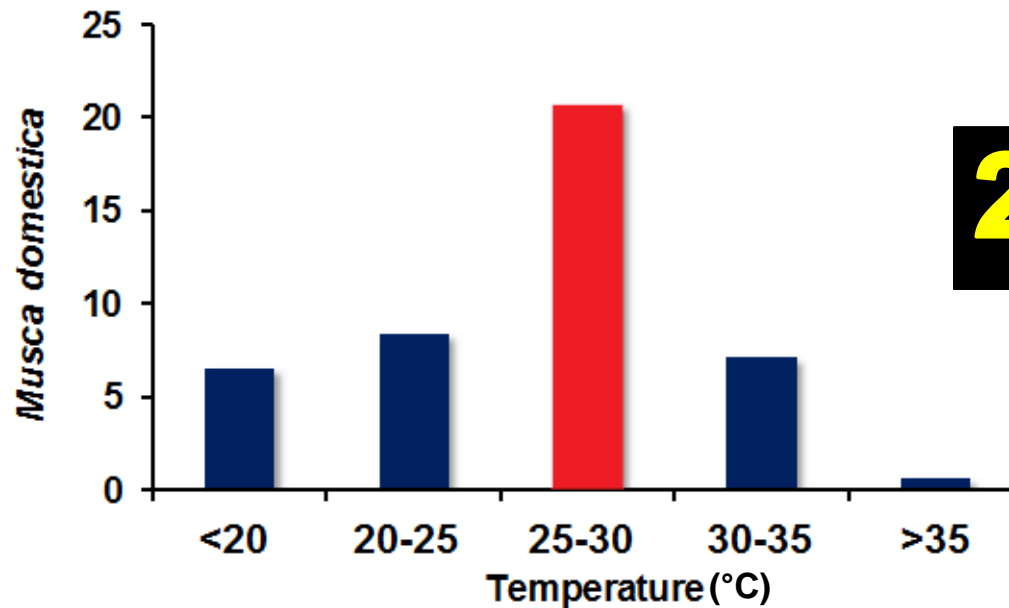
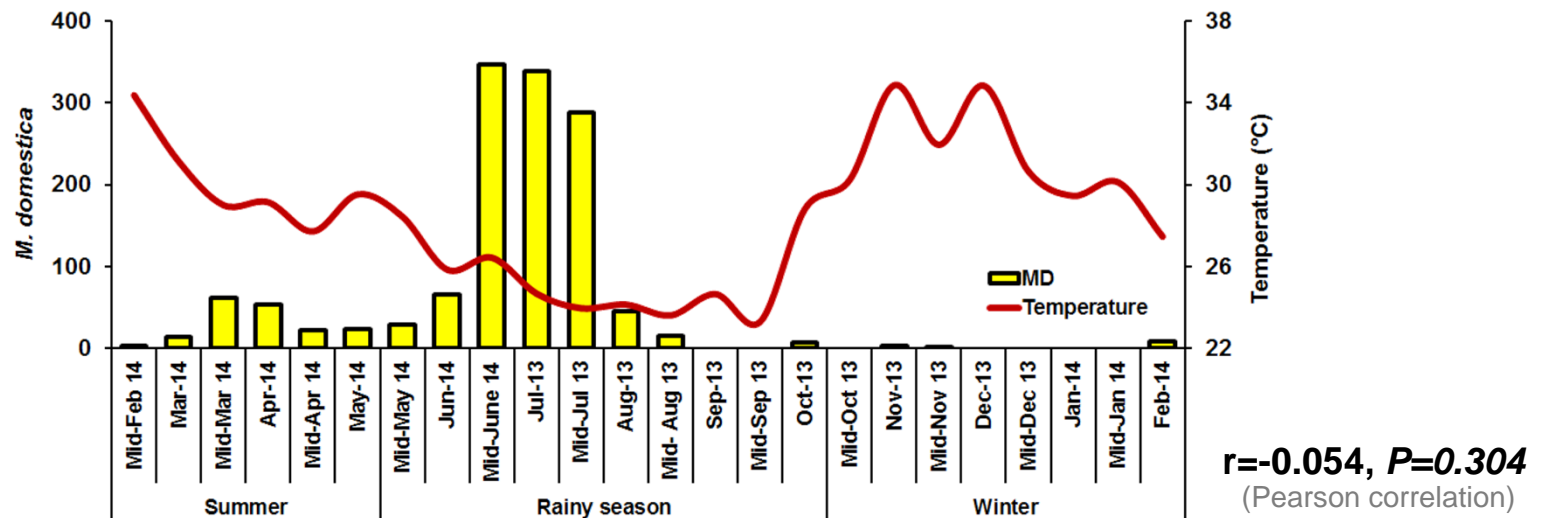




Peak activity: rainy season



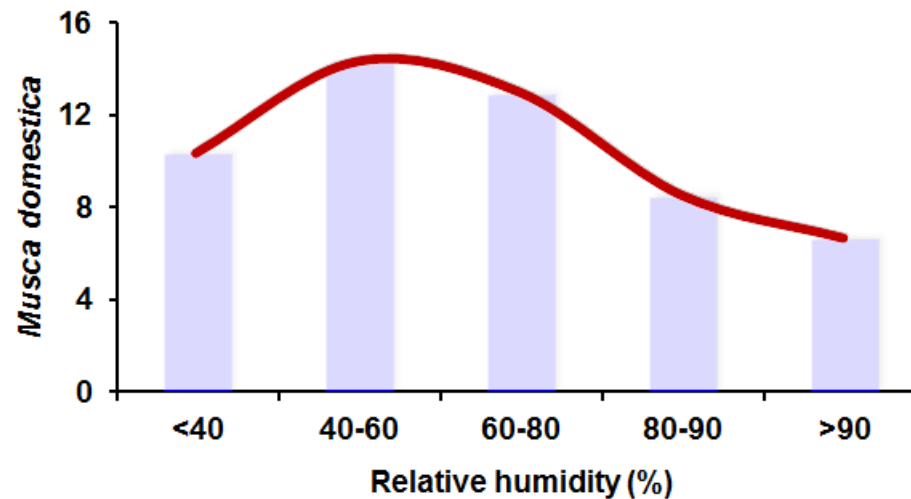
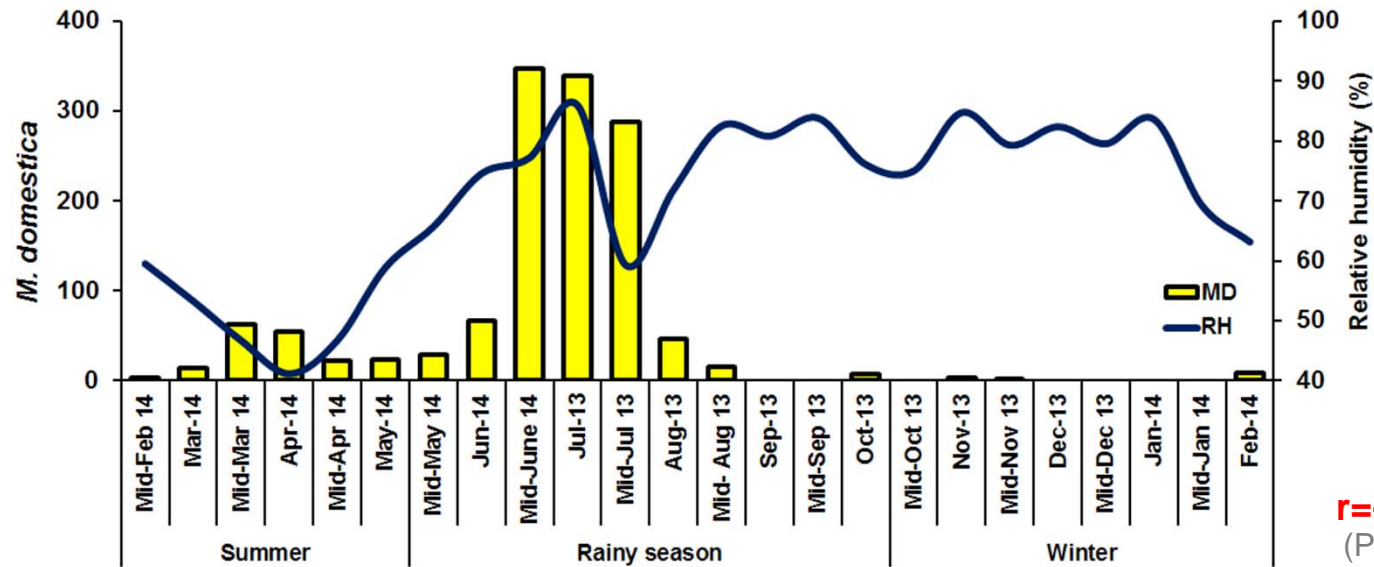
No correlation with temperature



25-30 °C

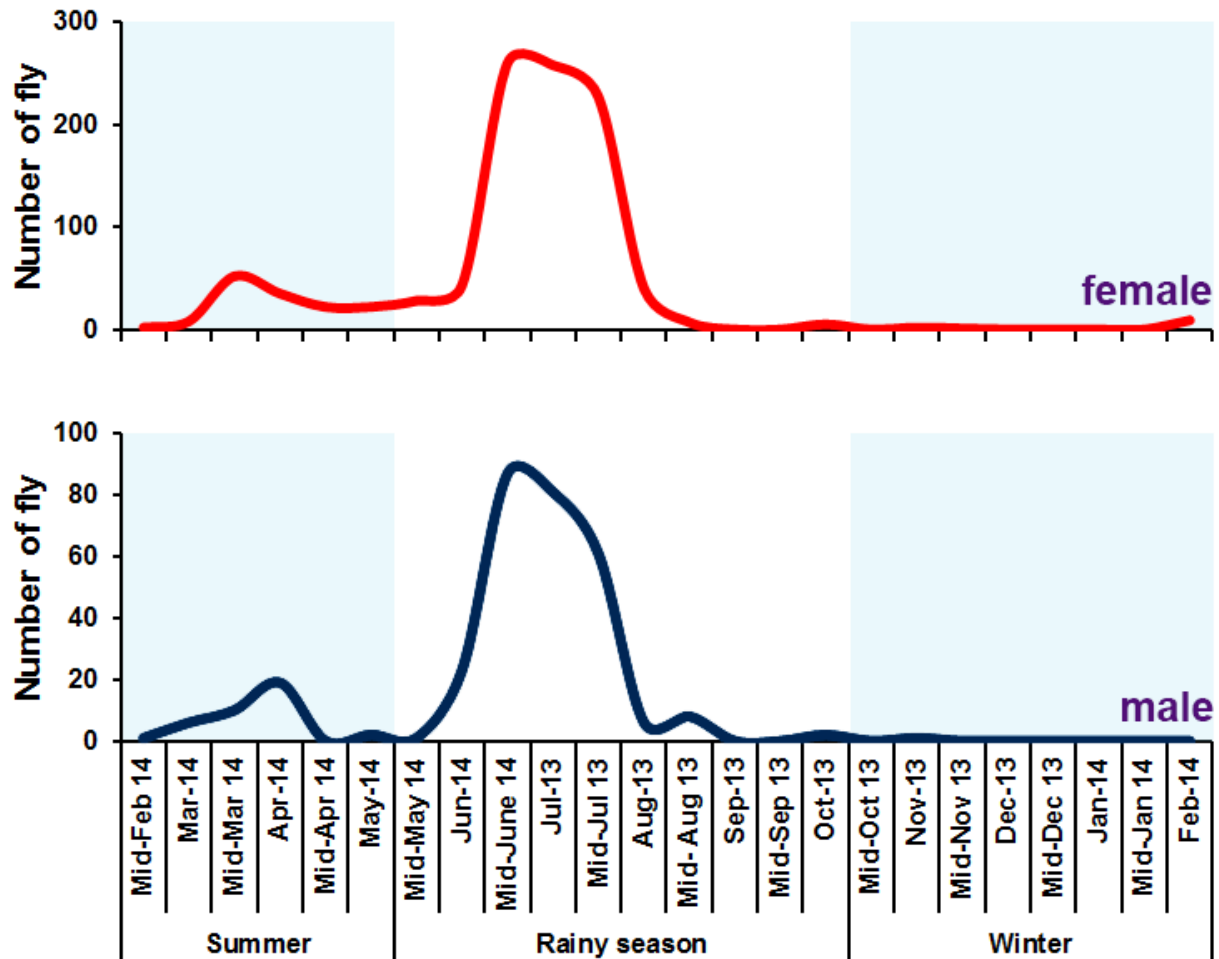


Negative with relative humidity





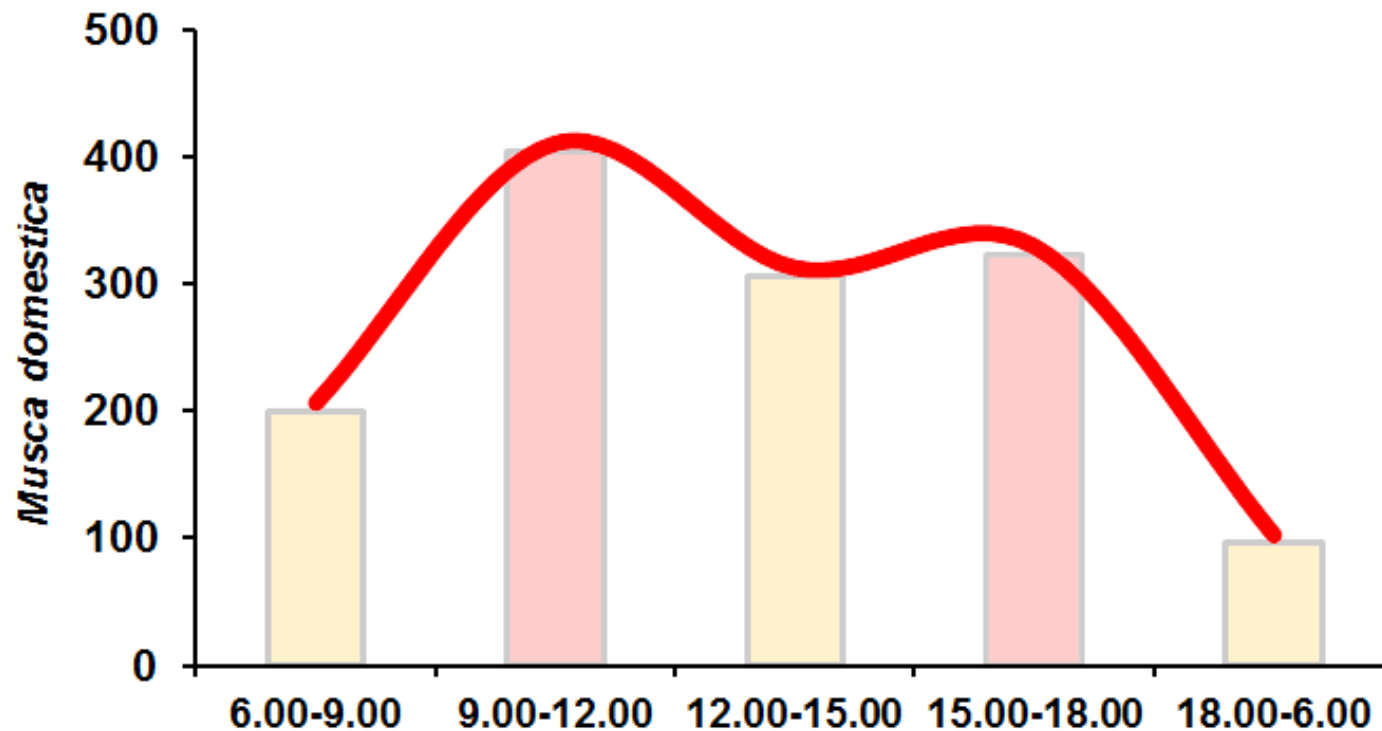
Female > male, 3:1



One-year survey



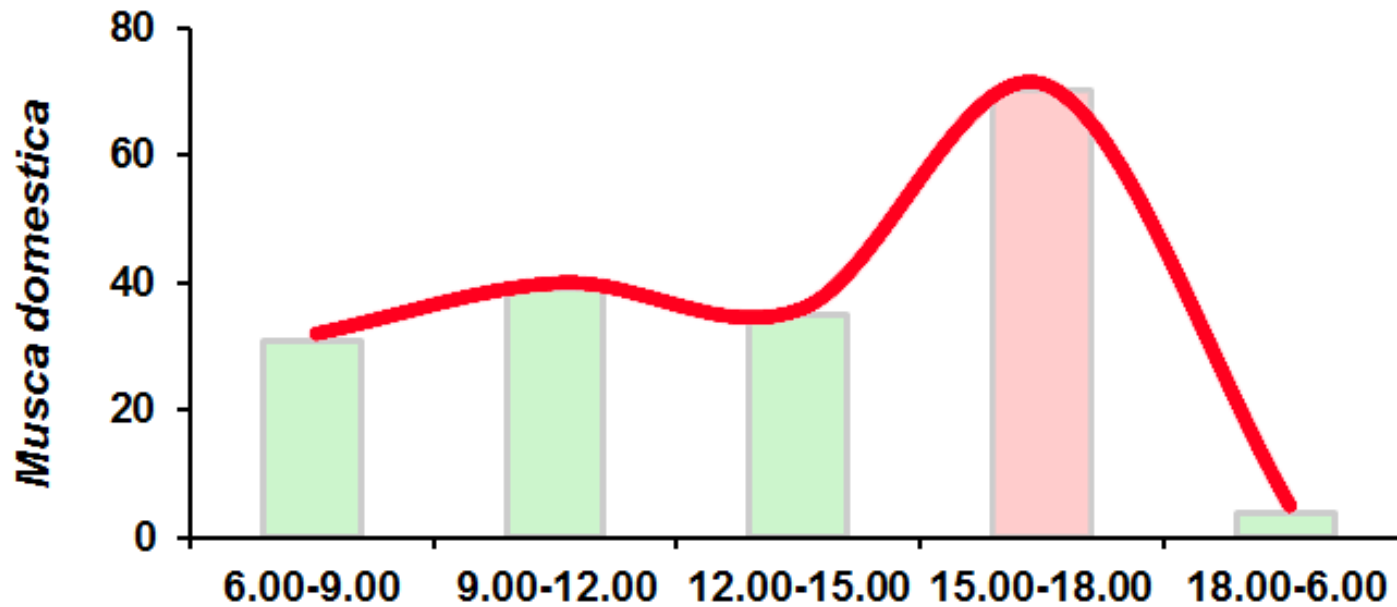
Peak activity in **late morning**



* The same letter is not significantly different (Mann-Whitney U test, $P \geq 0.05$)



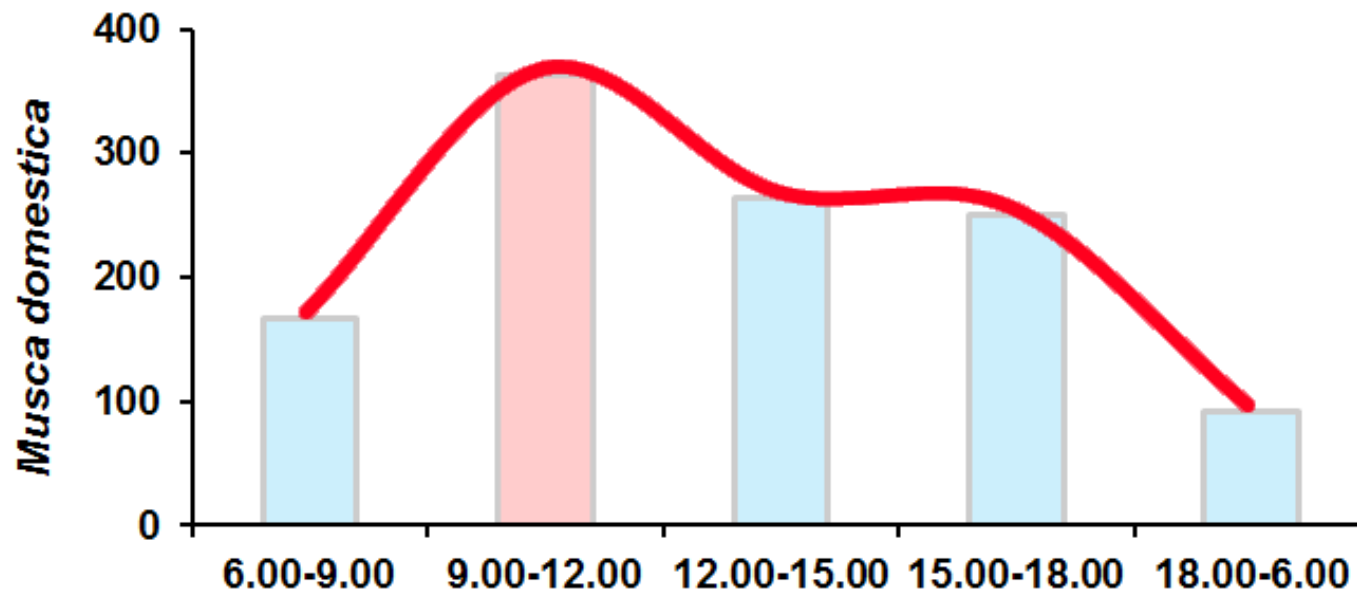
Summer



Late afternoon: 15.00-18.00



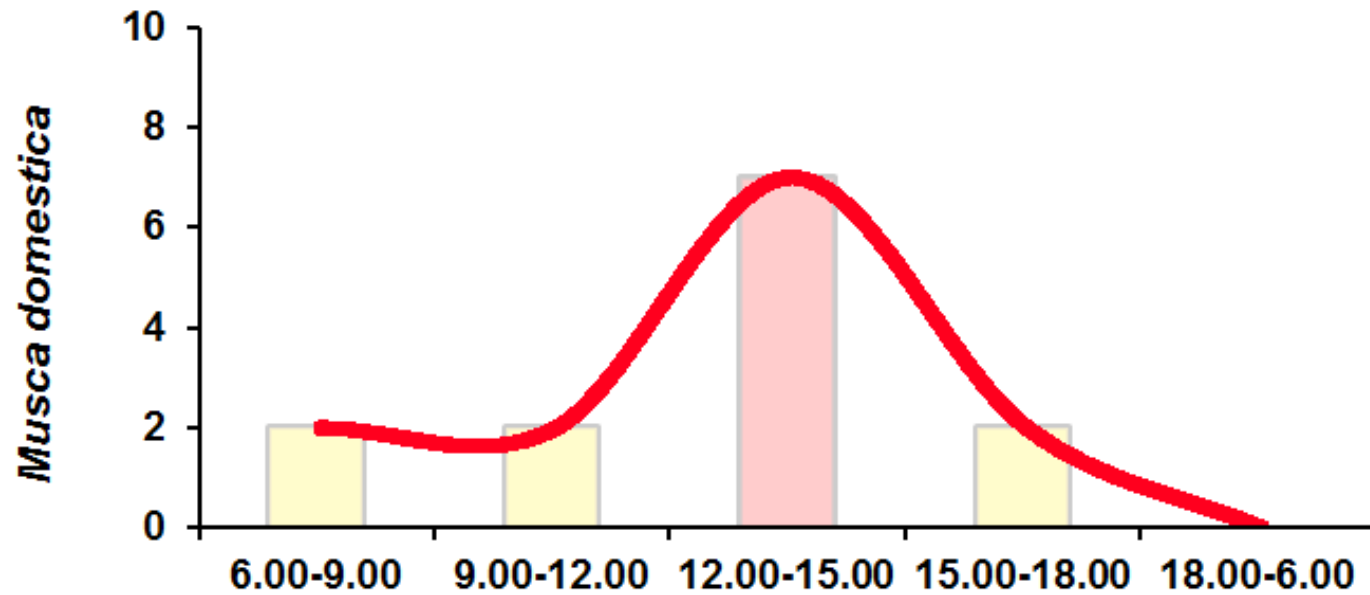
Rainy season



Late morning: **9.00-12.00**

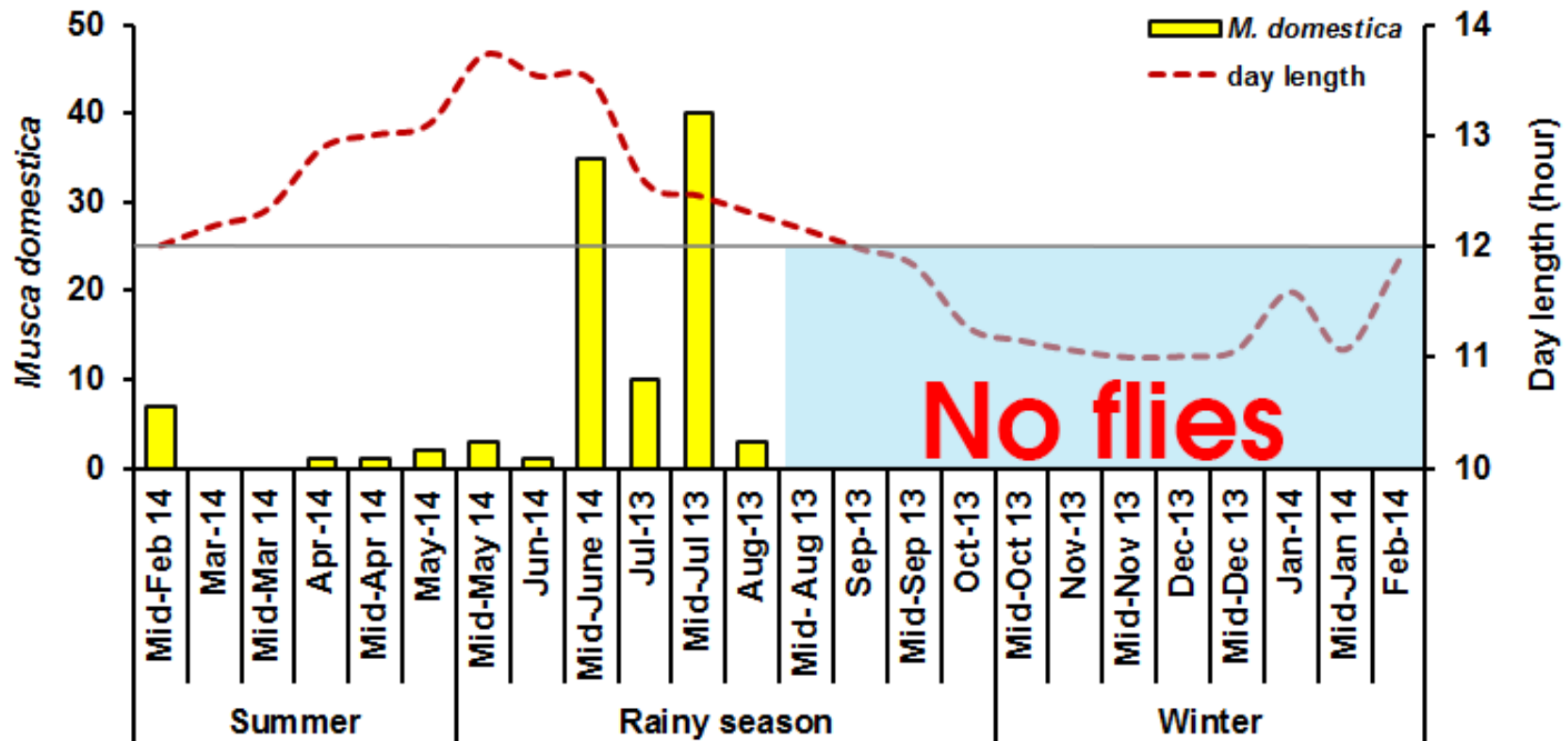


Winter

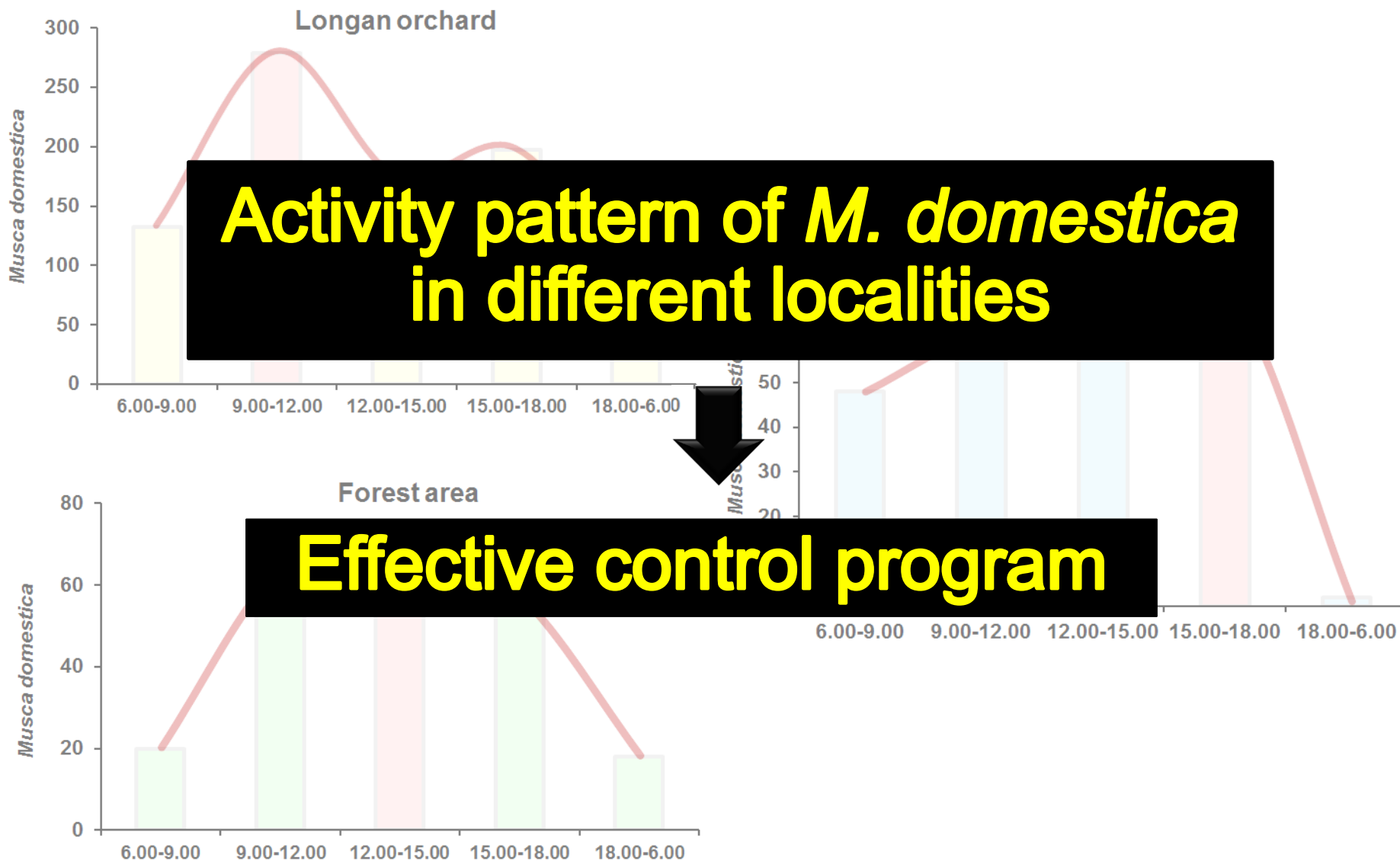


Early afternoon: 12.00-15.00

Night trap



Daily activity



In summary



Musca domestica

- Longan orchard
- Rainy season
- 25-30 °C
- Negative correlation with humidity
- Day time (6 am - 6 pm)



Microhabitat
Season



Daily activity

In conclusion

Baseline information of
daily & seasonal activity of *M. domestica*
under natural conditions





Acknowledgement

- **International Research Network (IRN)**
“Pest Insect and Arthropods in the Urban Settings”
- **Royal Golden Jubilee Ph.D. Program**
- **Dept. Parasitology, Fac. Medicine, CMU**





THANK YOU



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