

Breeding site of *Schoengastia chigger* mites as potential vector of scrub typhus in Vientiane (Lao PDR)



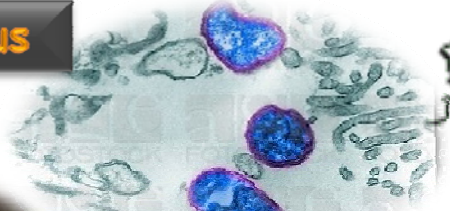
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Introduction

Scrub Typhus



(aniellemanuel, 2014)



Rural and suburban
(not city)



Eschar



Vegetation zone
(forest, plantation)



Reservoir Host



https://en.wikipedia.org/wiki/Sika_deer



<https://www.google.co.th/>



<https://www.google.co.th/imgres?imgurl=https%3A%2F%2Fwww.scientificamerican.com>

Vertebrate



<https://www.dkfindout.com/us/animals-and-nature/rodents/what-is-rodent/>



<https://www.google.co.th/imgres?>



<https://bugguide.net/node/view/587307>



<http://www.pinsdaddy.com>



<https://entomologytoday.org>



Vector



Chigger mites



a family of mites

Chigger mite



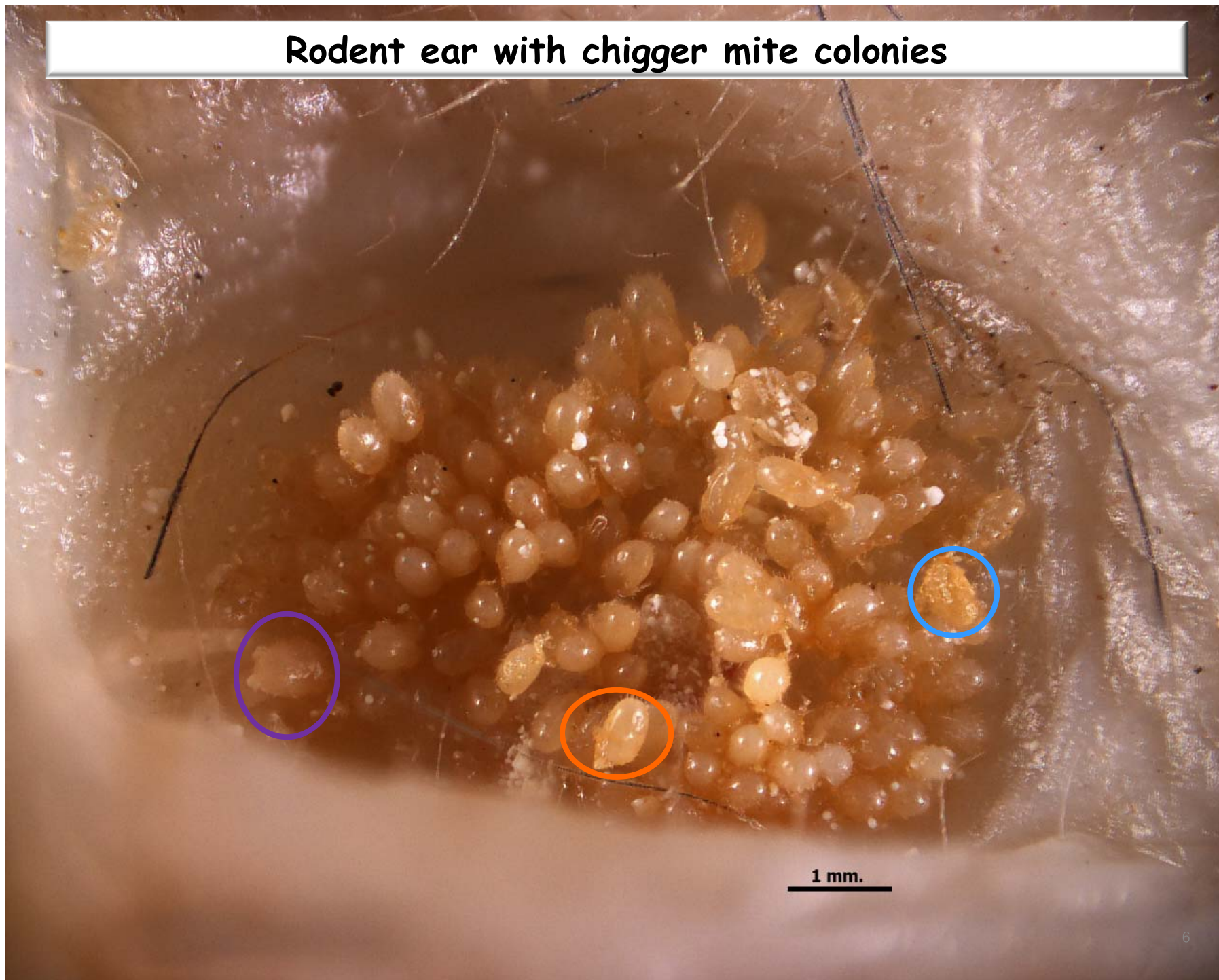
<https://en.wikipedia.org/wiki/Trombiculidae>

bite host
during
larval stage



<http://sci-s03.bacs.uq.edu.au/sib/ento/mite/chig.html>

Rodent ear with chigger mite colonies



1 mm.

(Sáenz, 2015; Service, 2008; Wrenn)





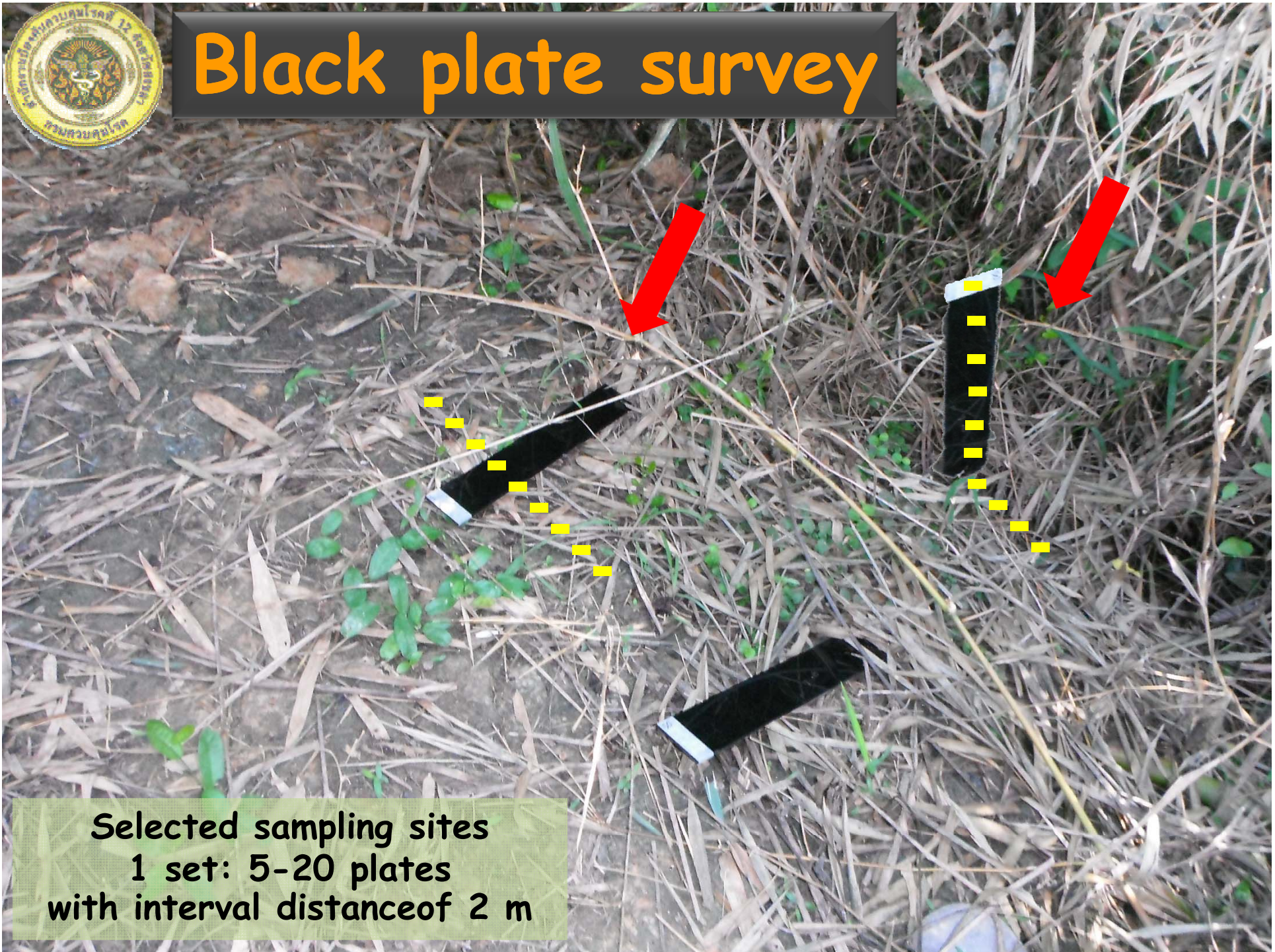
Area for Black plate survey

shades
high humidity
water sources
rodent holdings
Etc.





Black plate survey



Selected sampling sites
1 set: 5-20 plates
with interval distance of 2 m



Chigger collection by black plate



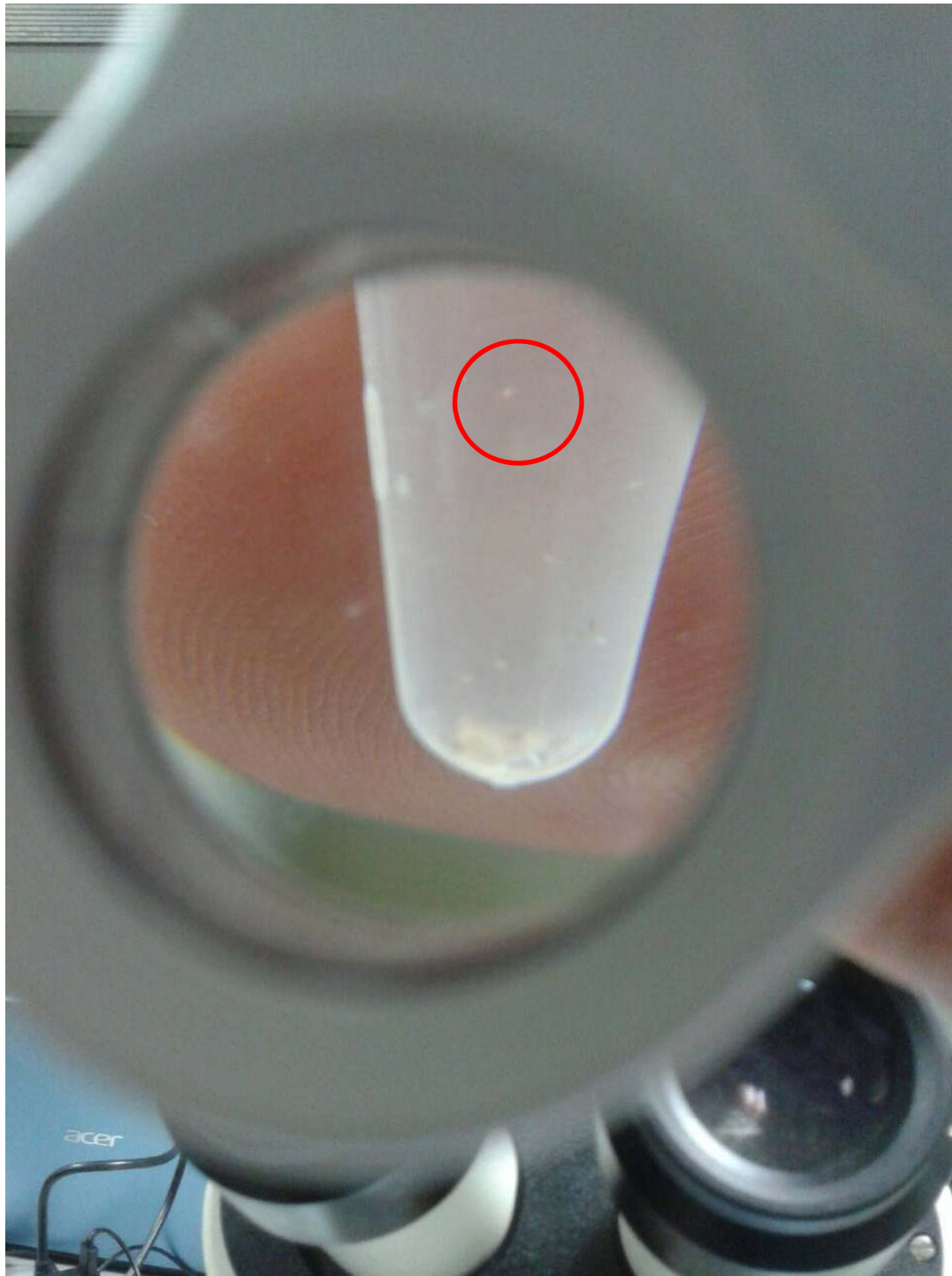


Collecting chigger



Preserve in 50-70% ethanol

Trail 1
1/1



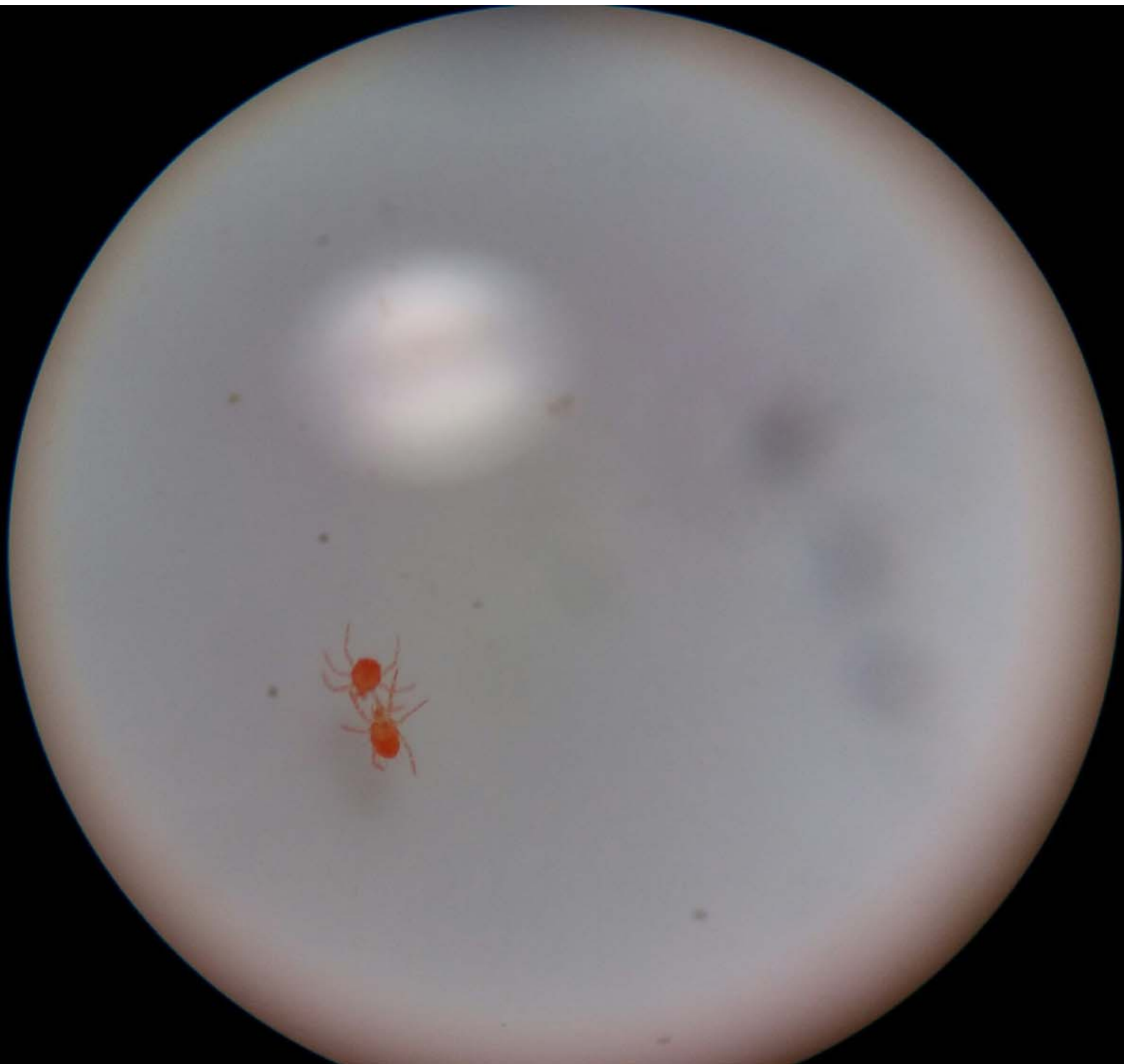


Search for mite islands (Radial black plate trapping)
1 m in diameter



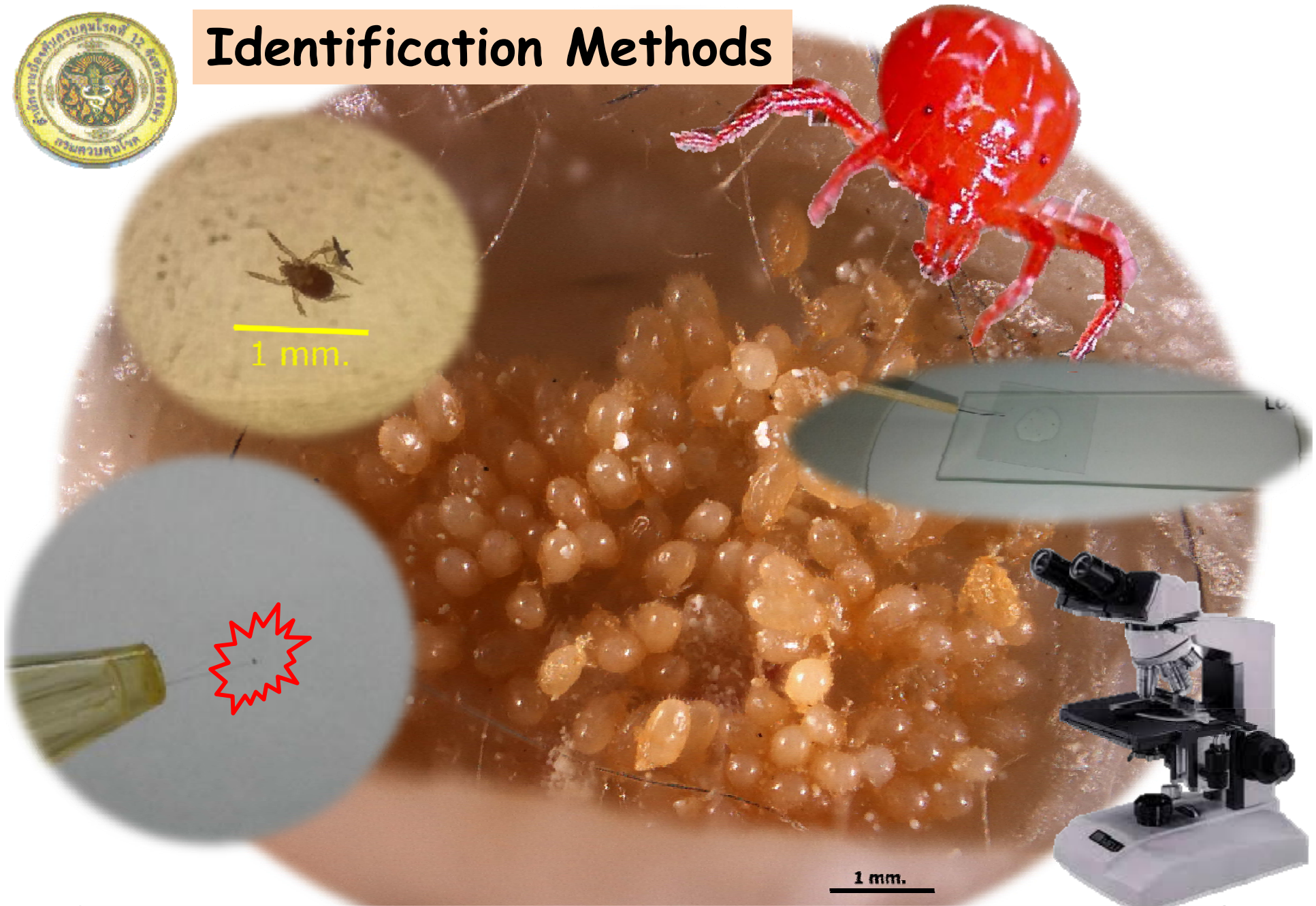
Mites Island







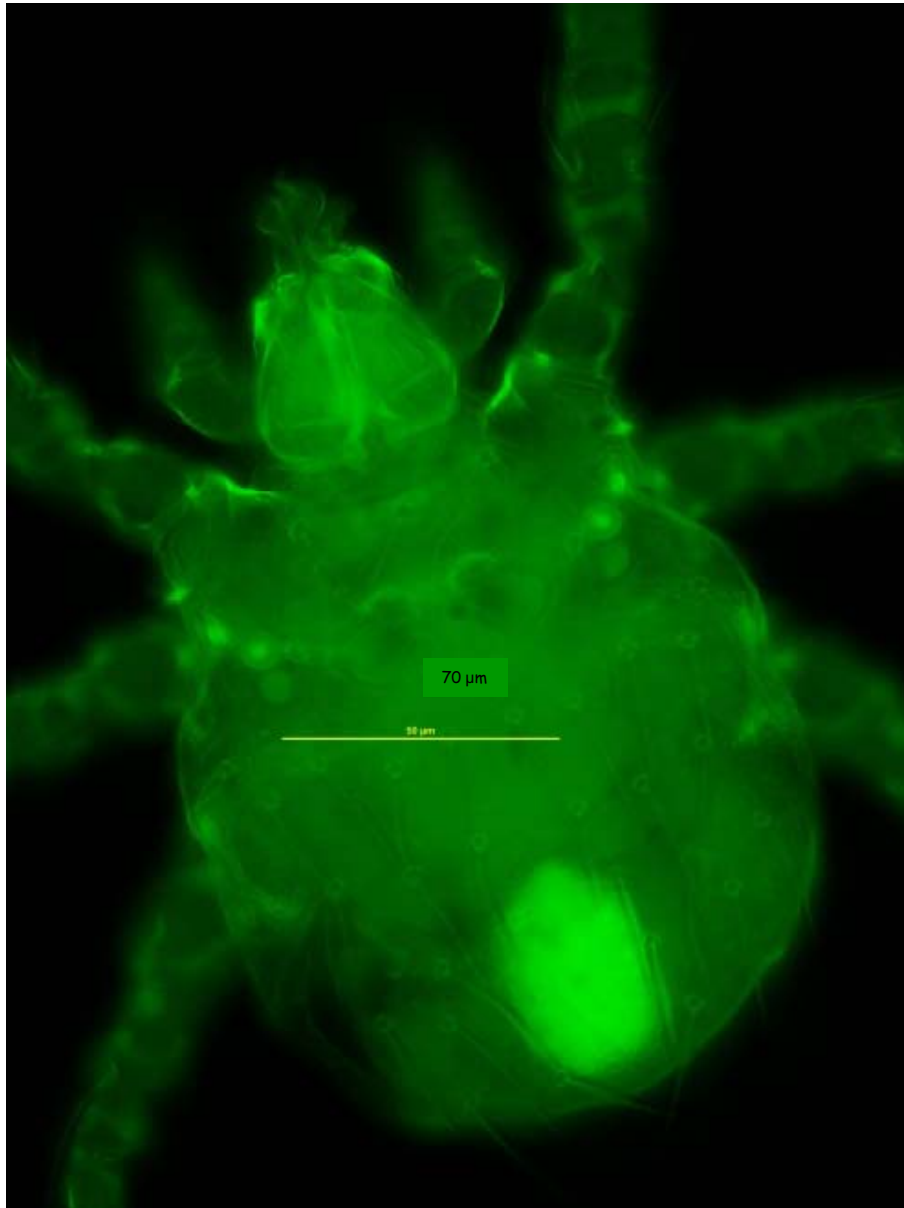
Identification Methods



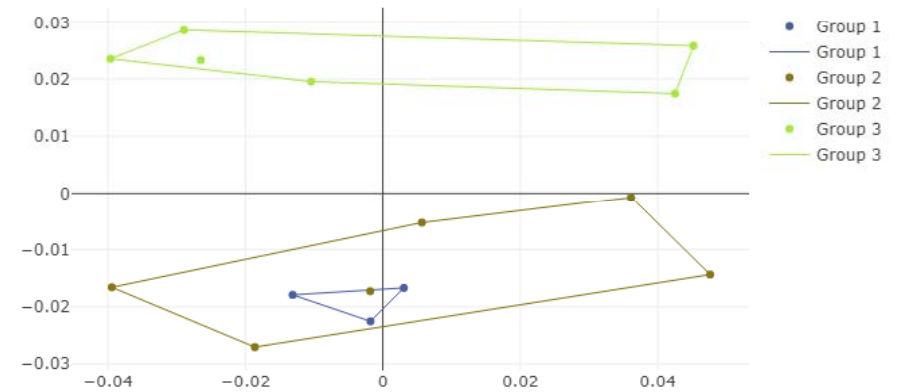
Rodent ear with chigger mite colonies photography

Addition of species identification methods

Technique → geometric morphometric



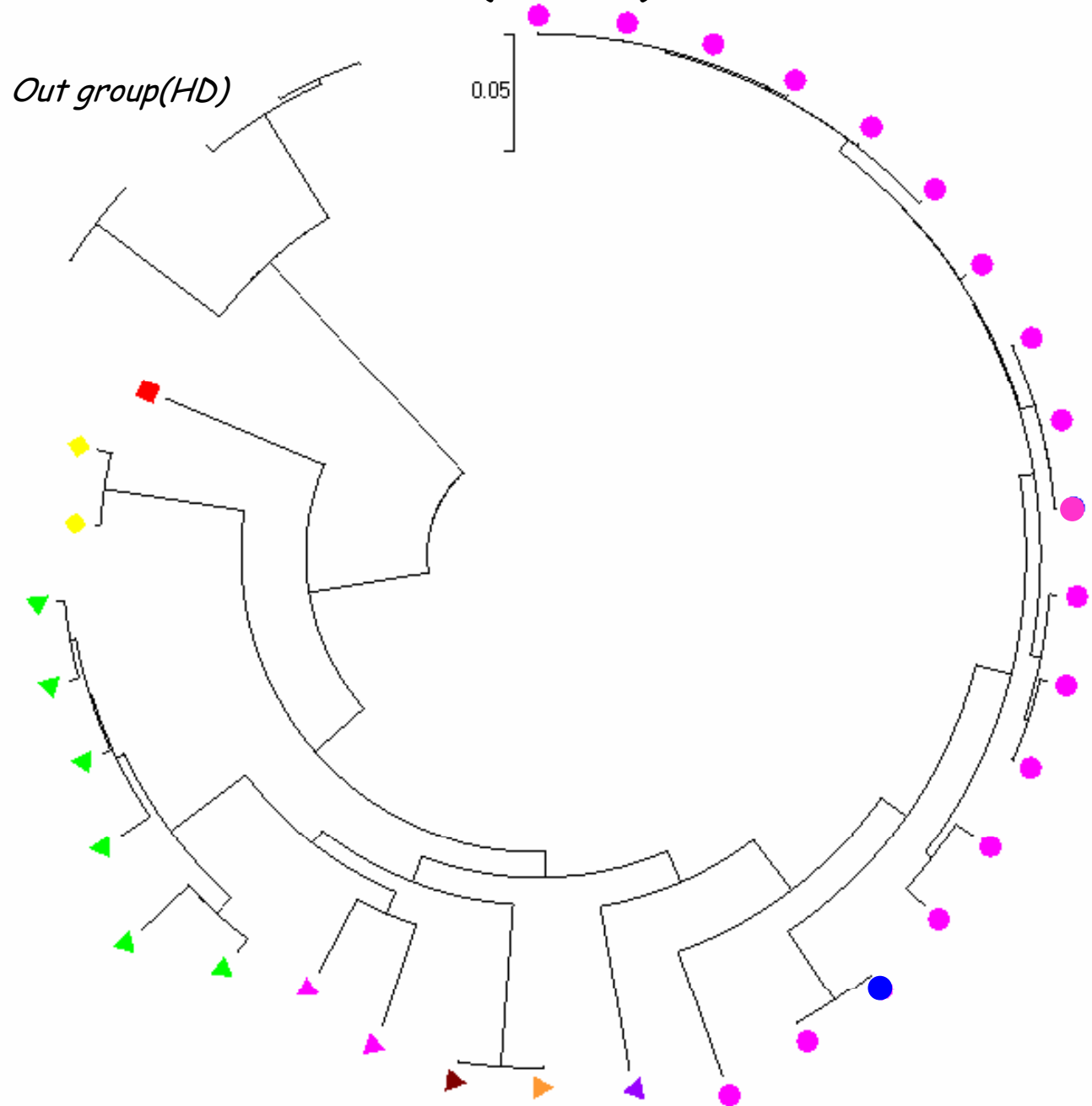
Principal Components Analysis





Technique → Molecular (COI)

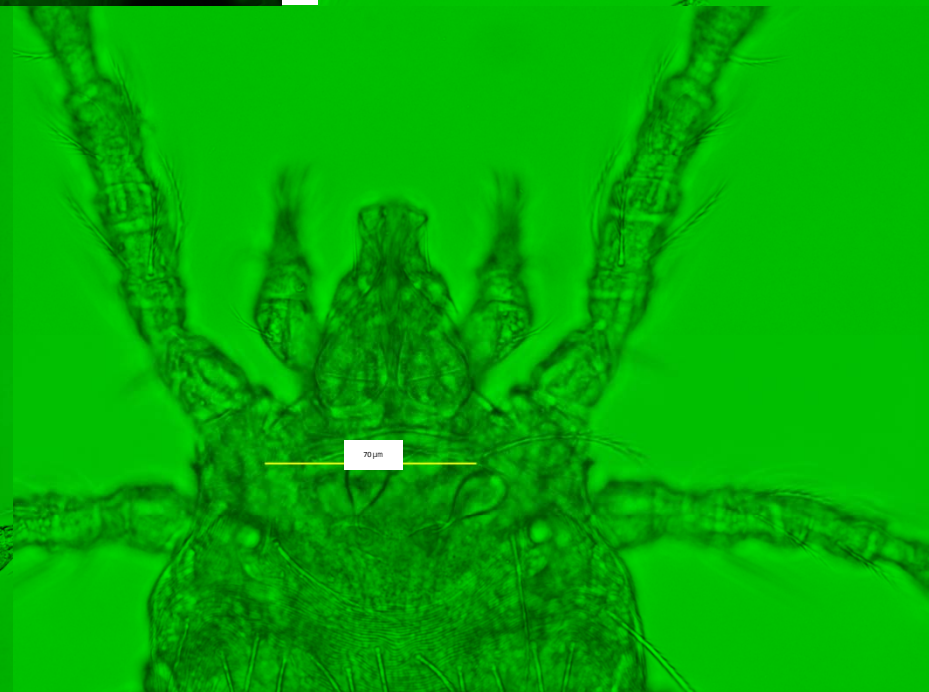
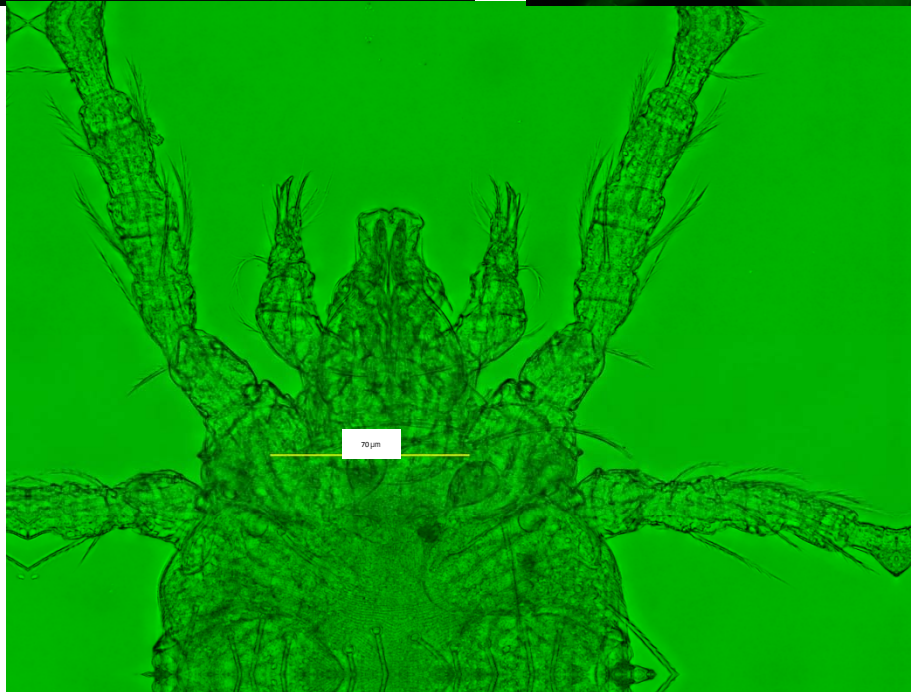
- *Schoengastia_R_L*
- *Schoengastia_B_L*
- ▼ *Schoutedenichia_R_L*
- ▲ *Ascoschoengastia_J*
- ▲ *Ascoschoengastia*
- ▲ *Ascoschoengastia_T*
- ▲ *Ascoschoengastia_L*
- ◆ *Trombiculidae_Canada*
- *Hirsutiella_Poland*



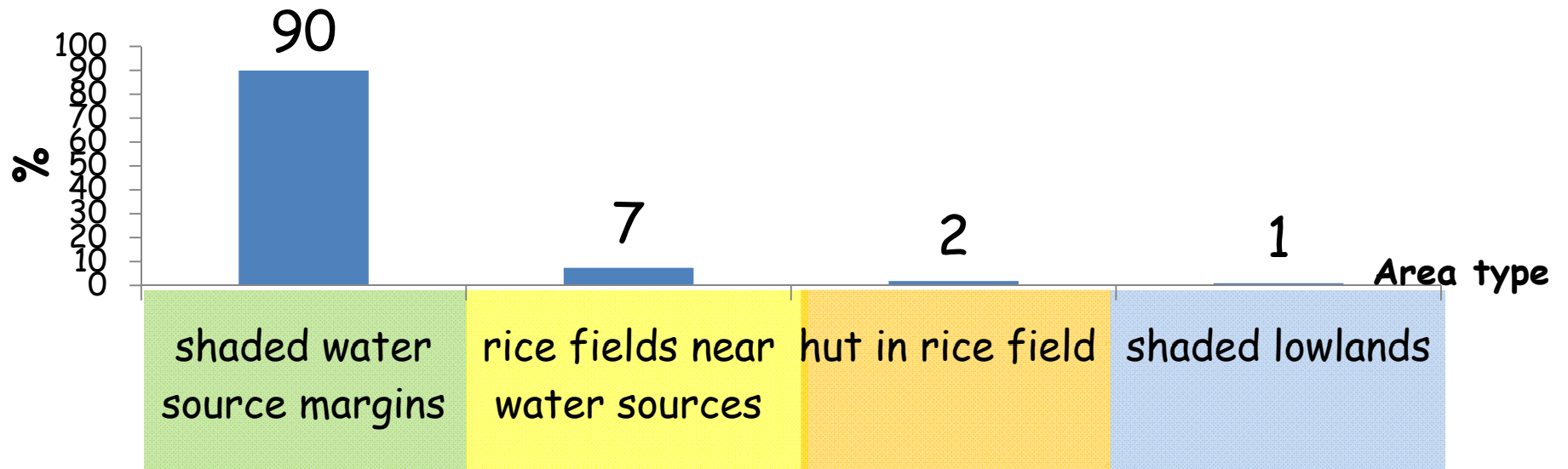


Result

109 *Schoengastia chigger* mites



Breeding site of *Schoengastia chigger* mites





Conclusion



chigger mite breeding site related to humid agricultural areas



having a holistic understanding of scrub typhus and its transmission-risk areas



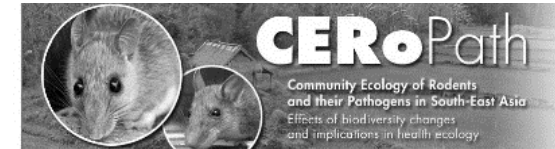
provide a practical surveillance system for more effective prevention and control programs



continue to develop technique to classify species of chigger mites in the future



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Thank you