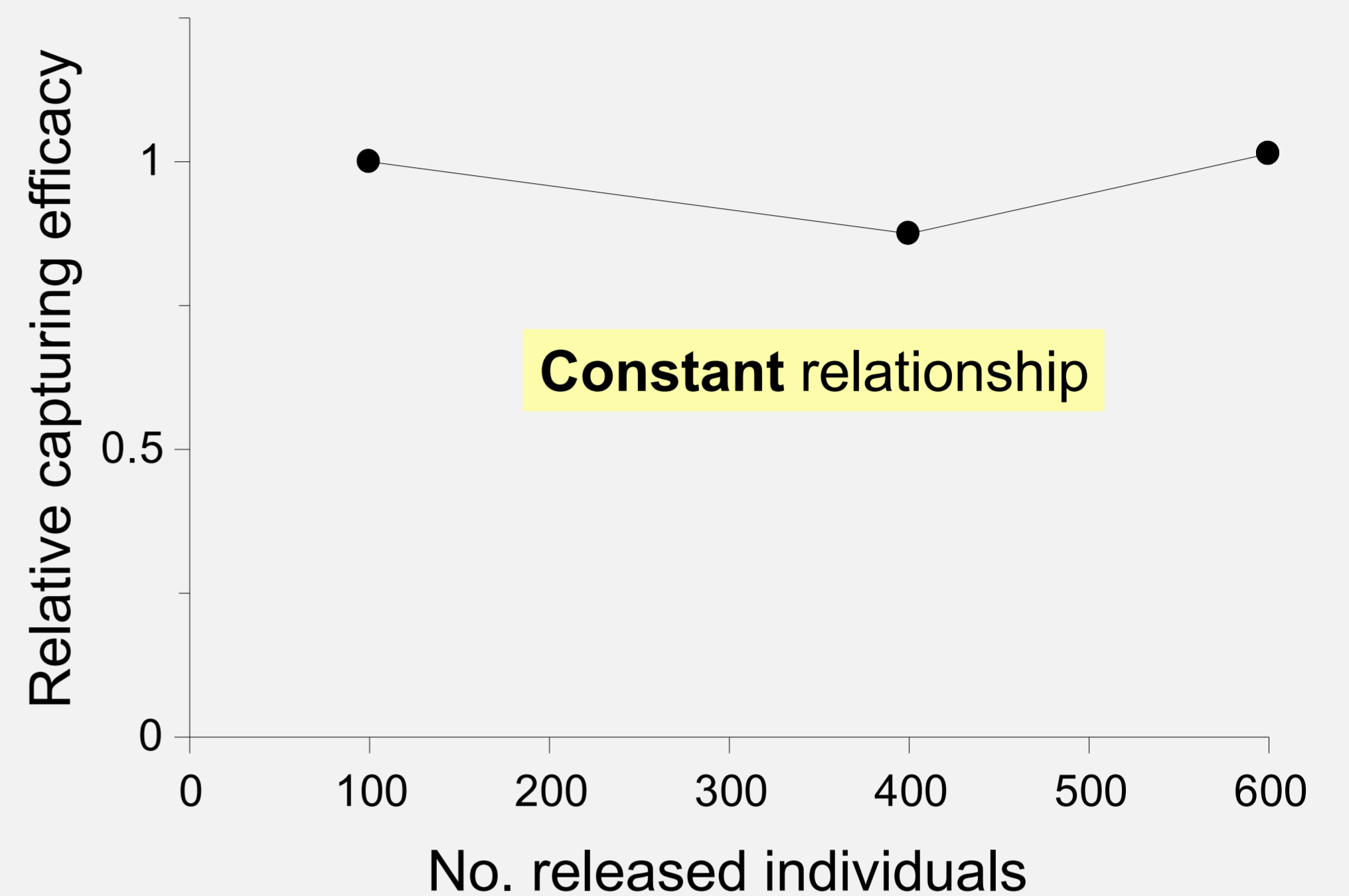


POSSIBILITY OF ESTIMATION OF ON-SITE POPULATION DENSITY OF TOBACCO BEETLE

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1. INTRODUCTION

Infestation of the **tobacco** (or cigarette) **beetle** (*Lasioderma serricornis*) is understood through monitoring by pheromone trap. Some premises need to hold true in order to practice it. A **major premise** is that the number of catches is proportional to the actual population density. We already conformed it in CORESTA2012, Sapporo (see the right fig.). As the next step, we studied possibility of estimation of **on-site population density** of the tobacco beetle based on the number of catches by **pheromone trap**.



2. MATERIALS & METHODS

Trap Placement (see the right fig.)

Twelve NEW SERRICO traps were placed at 10m intervals and 1.5m height on wall and plywood boards.

Experiment Conditions

Released*: 50(8), 100(10), 200(8), 300(6) or 400 males*(3)**

* Three days after appearance.

** Numerals within brackets indicate replications.

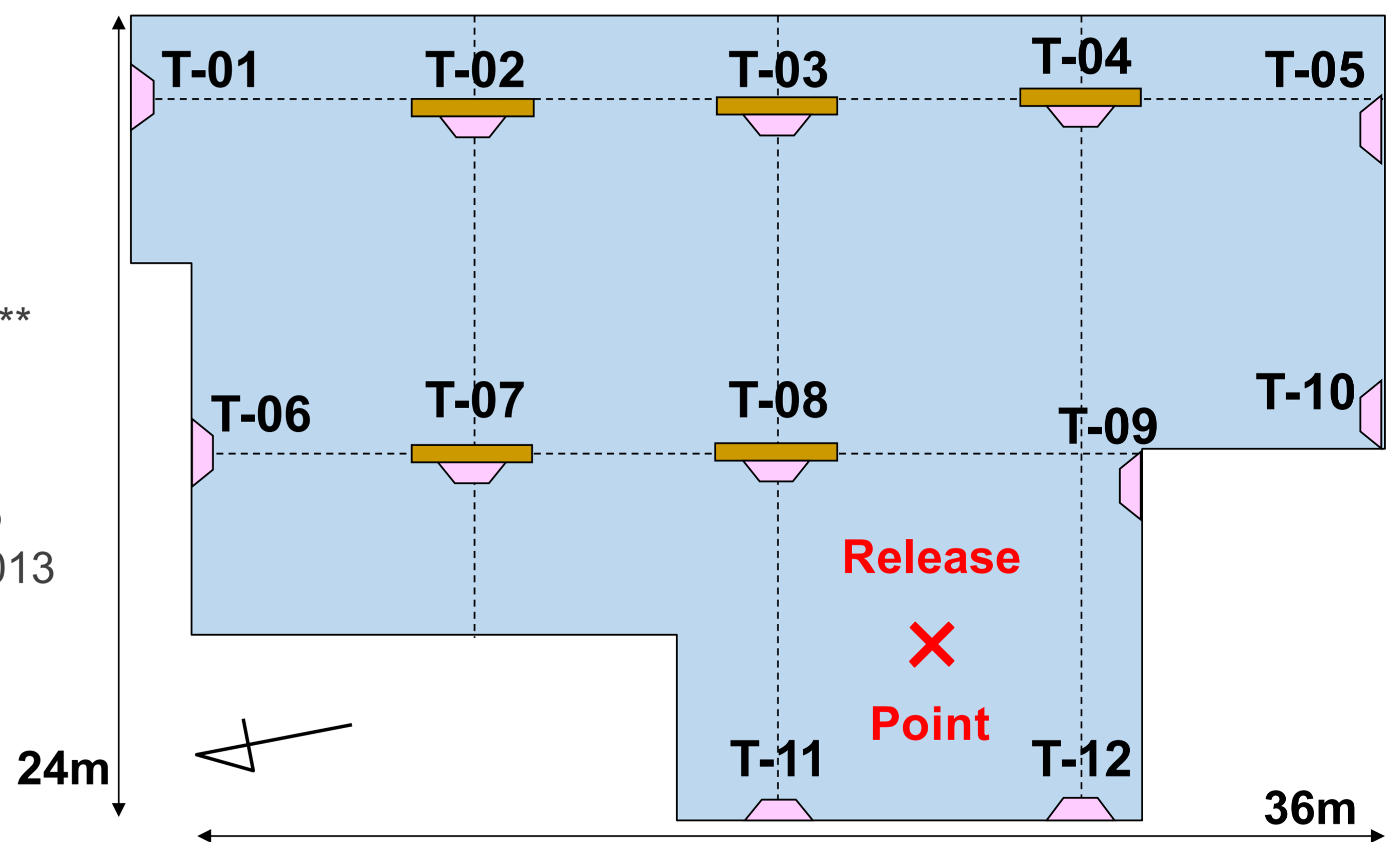
Experiment period: July to October in 2013, 2014 and 2015

Max., Ave., Min. temperature: 34.4, 28.5, 22.5 Celsius in 2013

34.0, 25.9, 17.1 C in 2014

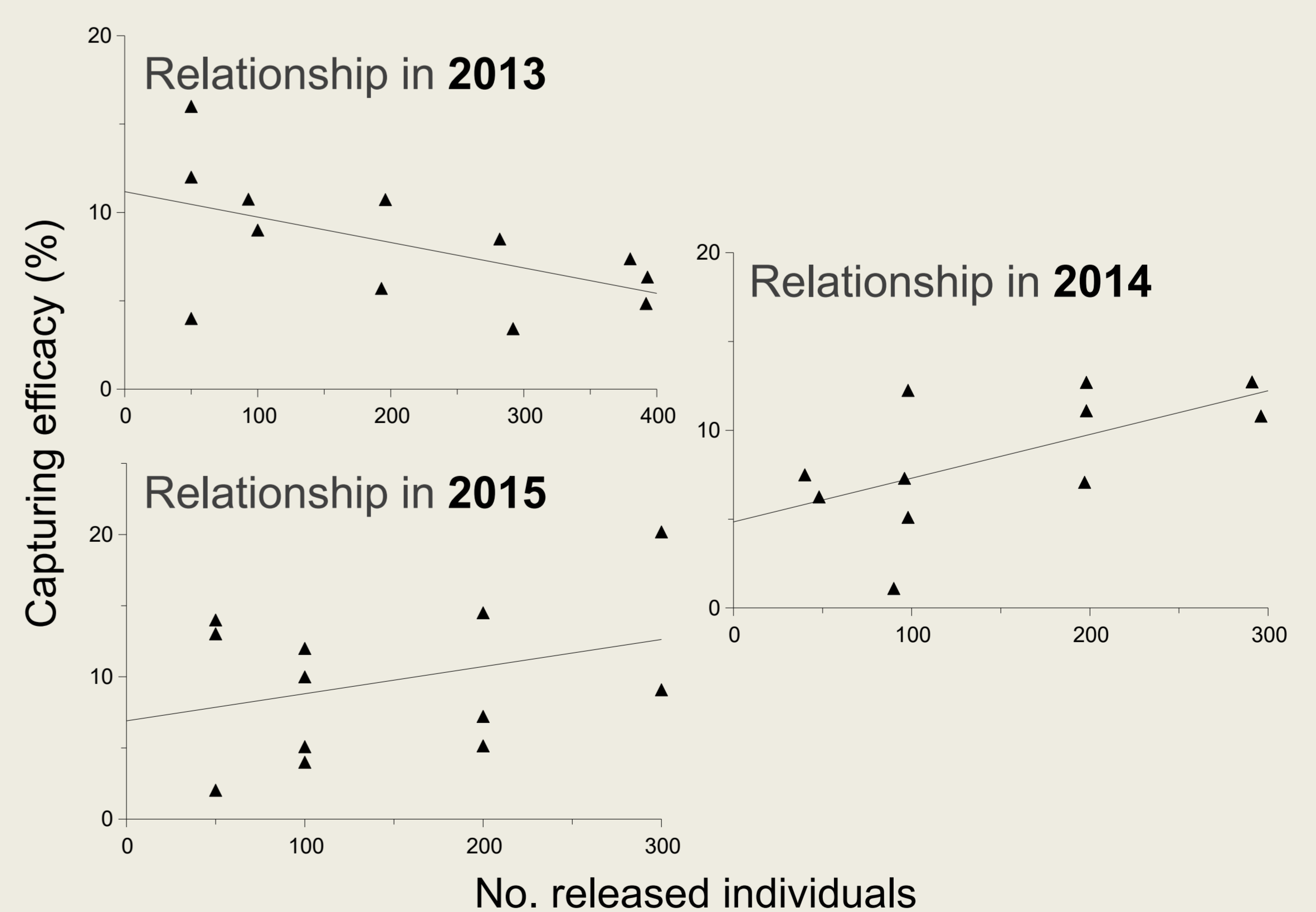
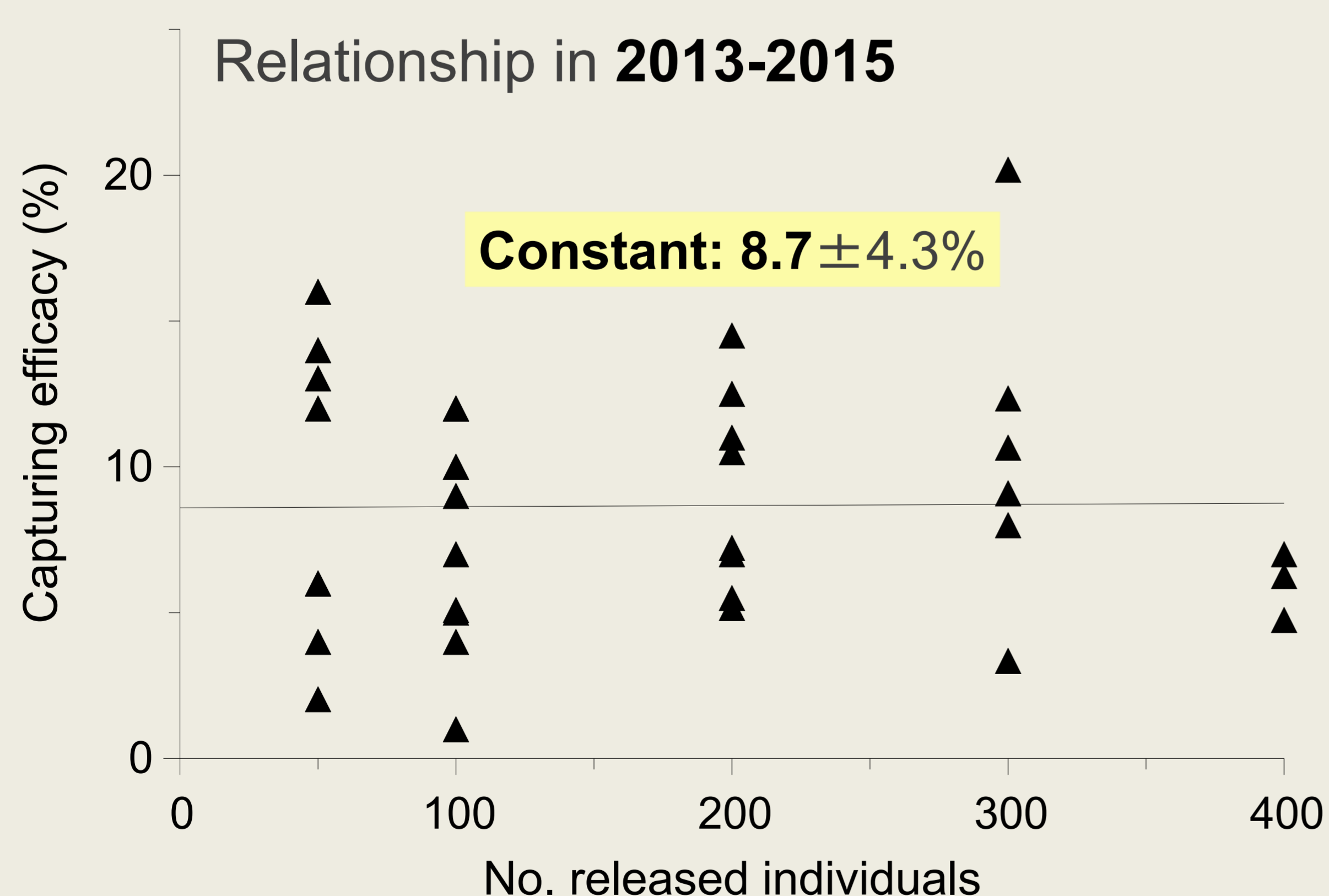
36.7, 25.1, 16.4 C in 2015

The beetles were released from **the release point**.
The catches were counted **one week** after release.



3. RESULTS & DISCUSSION

Capturing efficacy was **constant**, using data for **three years**.



The relationship in each year was inconsistent (see the three right figs.): negative in 2013, positive in 2014 and 2015, but the relationship was constant based on 35 results for three years (see the left fig.). These results suggest that **it is possible to estimate on-site population density based on the number of catches**. However, the constant is obtained experimentally and isn't to apply to every site directly. It is necessary for respective sites to pursue respective constants. Furthermore, we should proceed with the examination in regards to it in **a site with unknown conditions**.