



SHINDO TRAP

vibrational technology for BMSB trapping

MICROBIALS



BOTANICALS



PHEROMONES



BENEFICIALS



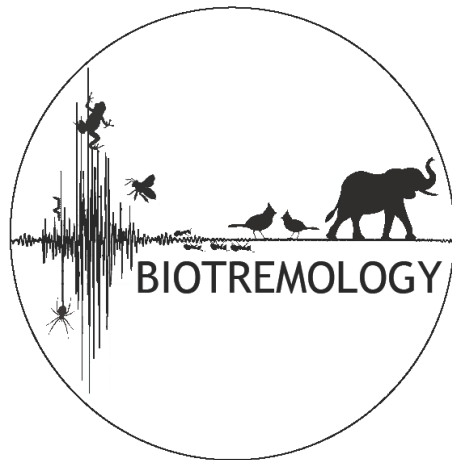
NUTRITION



Background

Biotremology is the study of production, dispersion and reception of mechanical vibrations by organisms, and their effect on behavior.

This involves neurophysiological and anatomical basis of vibration production and detection, and relation of vibrations to the medium they disperse through.



- [1st International Symposium on Biotremology](#),
San Michele all'Adige (IT), 5-7 July 2016
- [2nd International Symposium on Biotremology](#),
Riva del Garda (IT), 4-6 September 2018
- [3rd International Symposium on Biotremology](#),
Piran (SL), 19-22 September 2022

Background

BMSB (*Halyomorpha halis* STAL) use different communication clues including pheromones, kairomones and vibrational signals

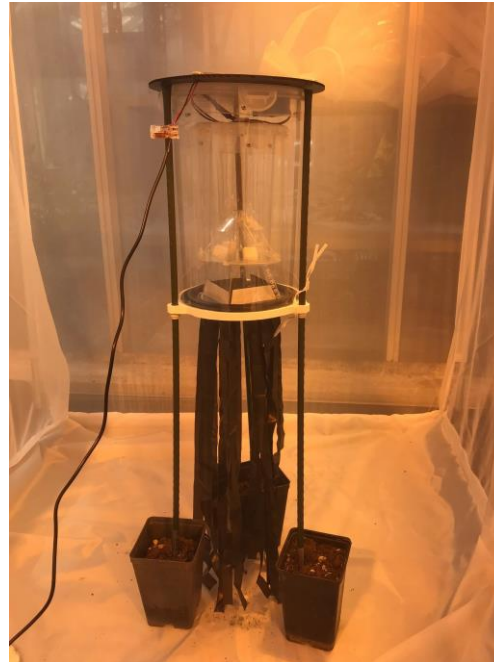
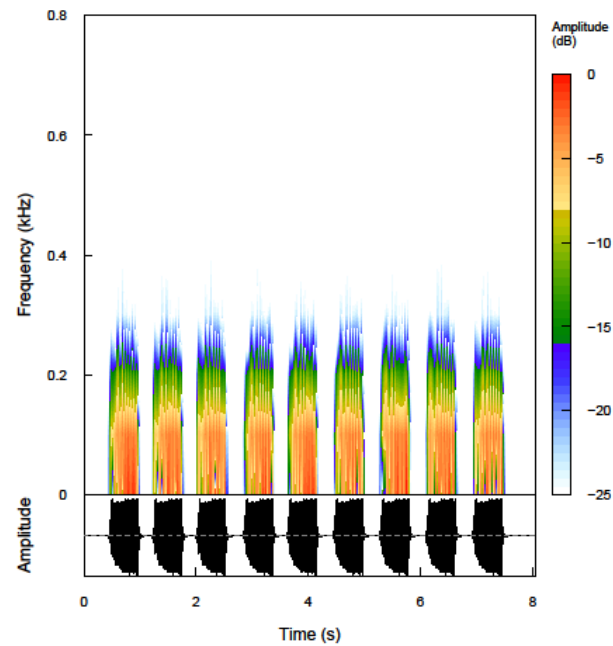
Vibrational signals work at short distance to precisely attract individuals to the source

Combination of pheromone lures and vibrational signal achieves earliest and highest catching of BMSB adults and nymphs



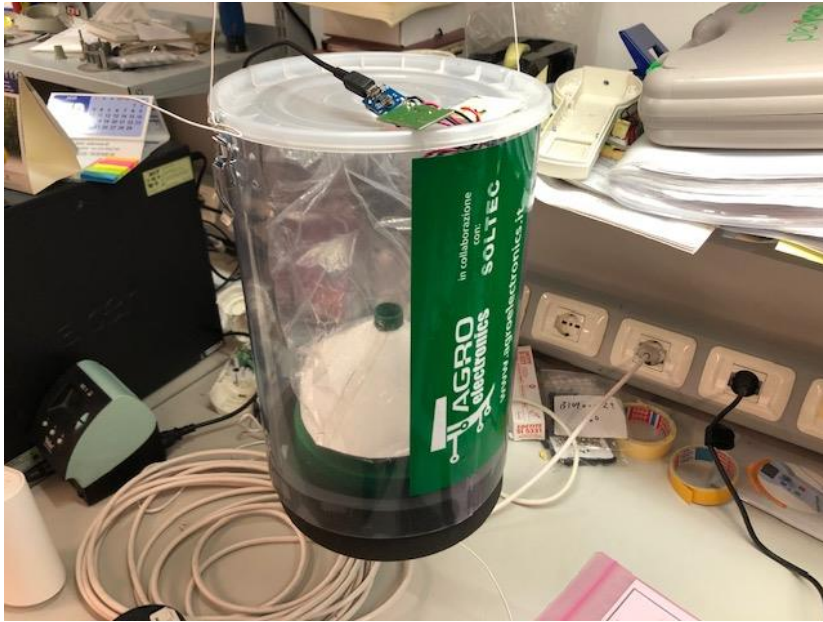
Background

We worked with researchers to find and reproduce the sound












Background

We worked with engineers to find the right shape to transmit the sound and catch the bugs



Comparison field tests

Acronym	->	VON	VOF	GT	GR
Vibration	->			NO vibration	NO vibration
Trap design	->				
Lure	->	Trecé 	Trecé 	Trecé 	General Lures 

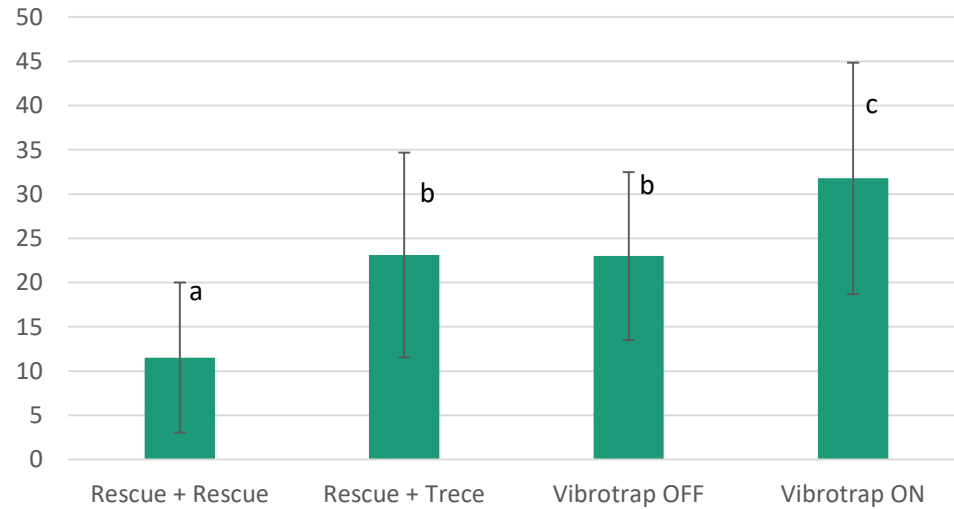
SHINDO TRAP

Commercial traps

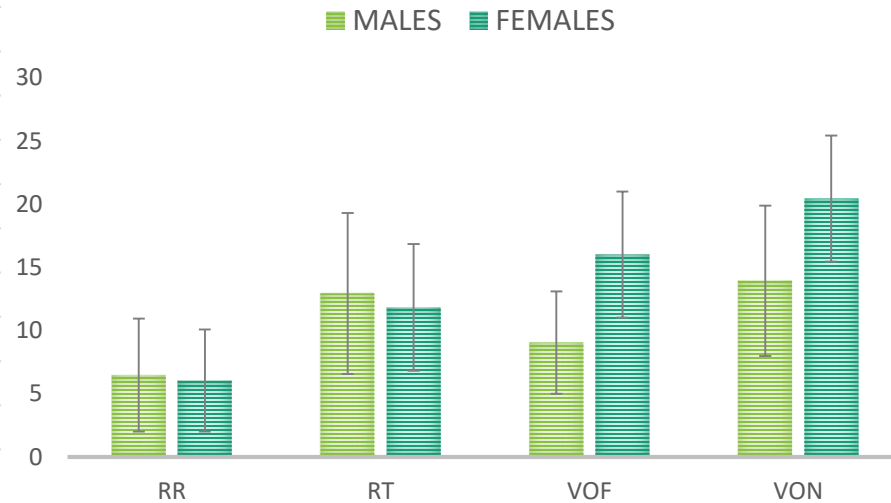


Comparison field test results

AVERAGE TRAP CATCHES PER TRAP

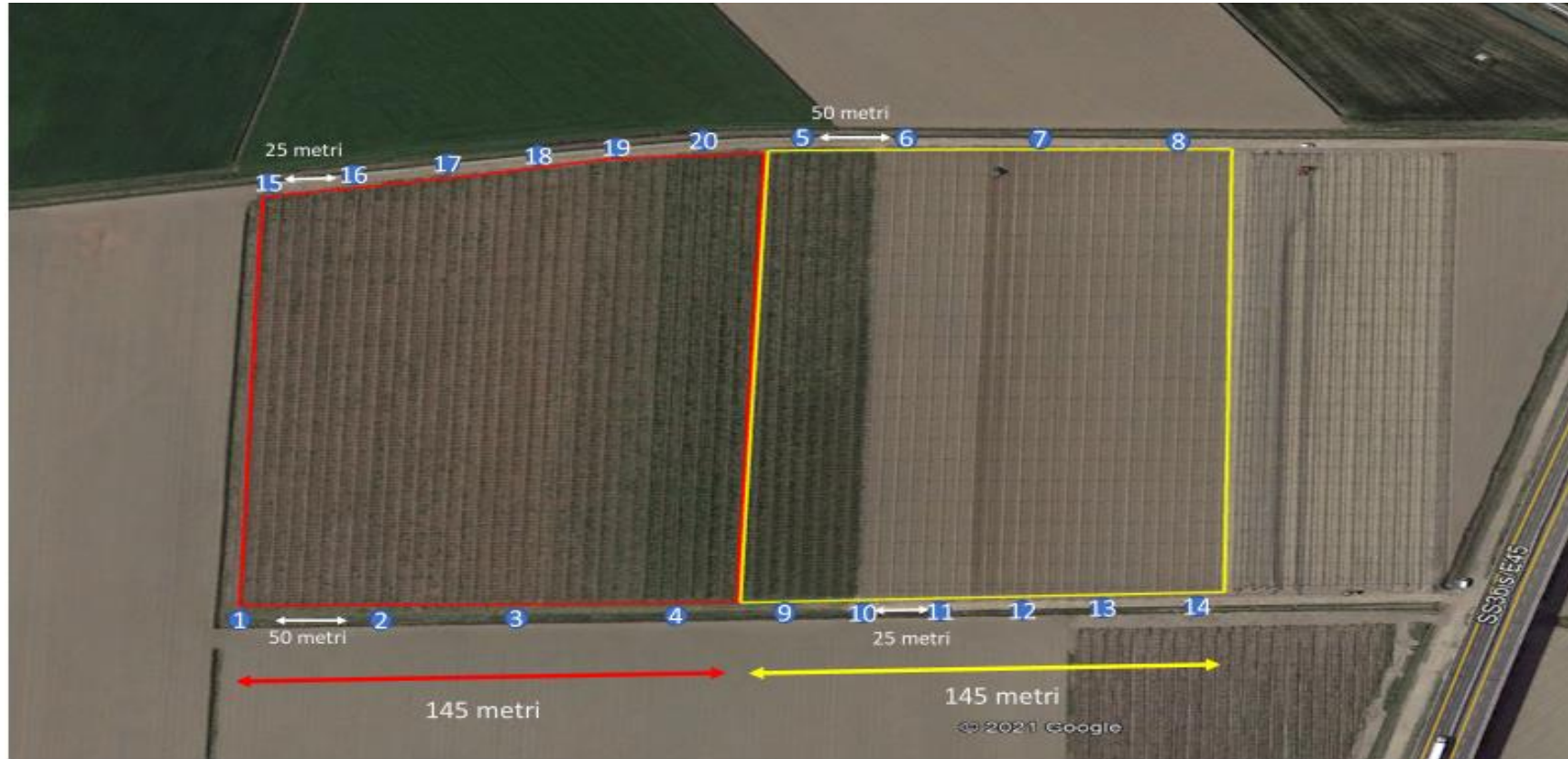


SEX CATCHES PER TRAP



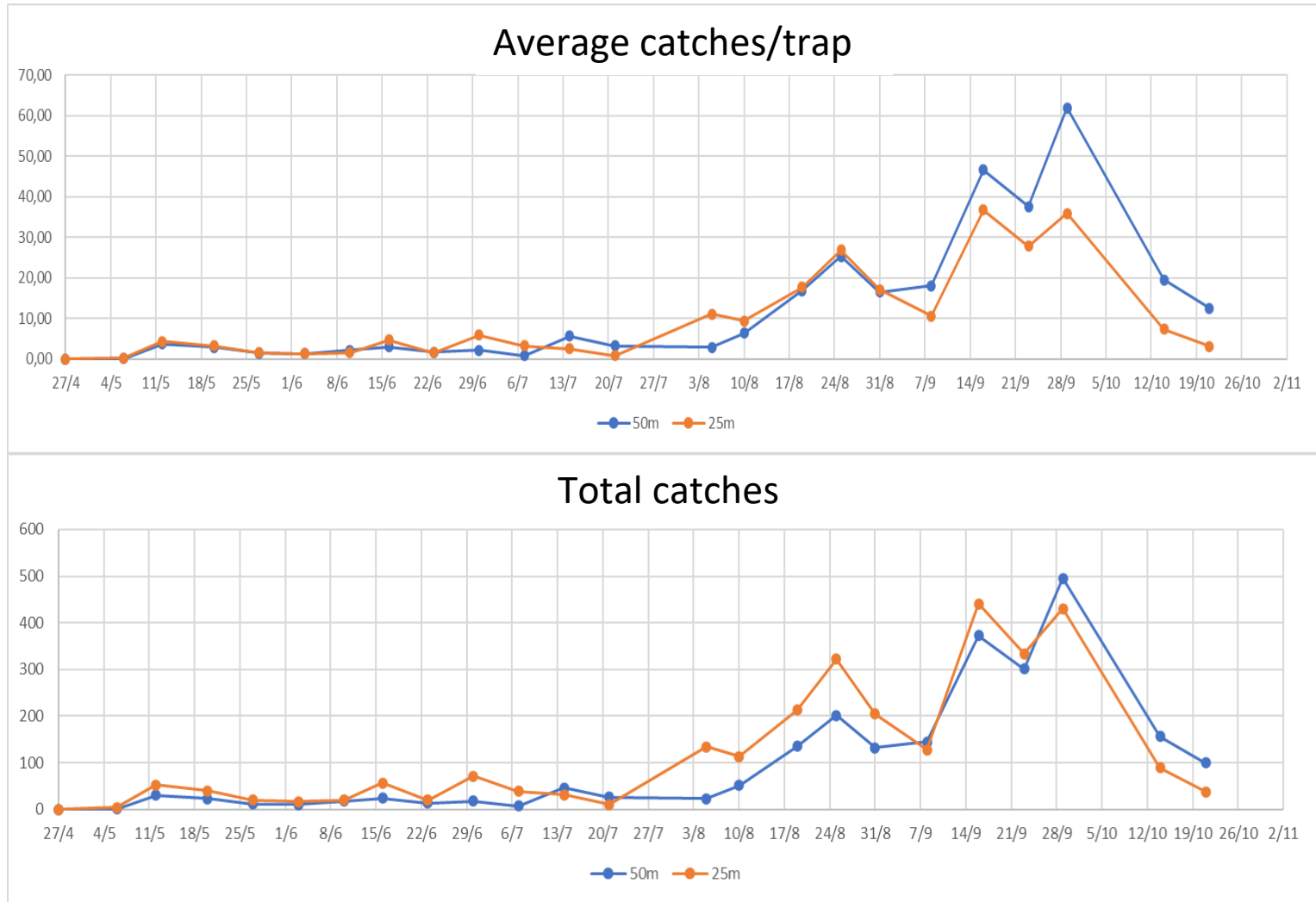
Application and shape field tests

(trap with pyramid base or squid design)



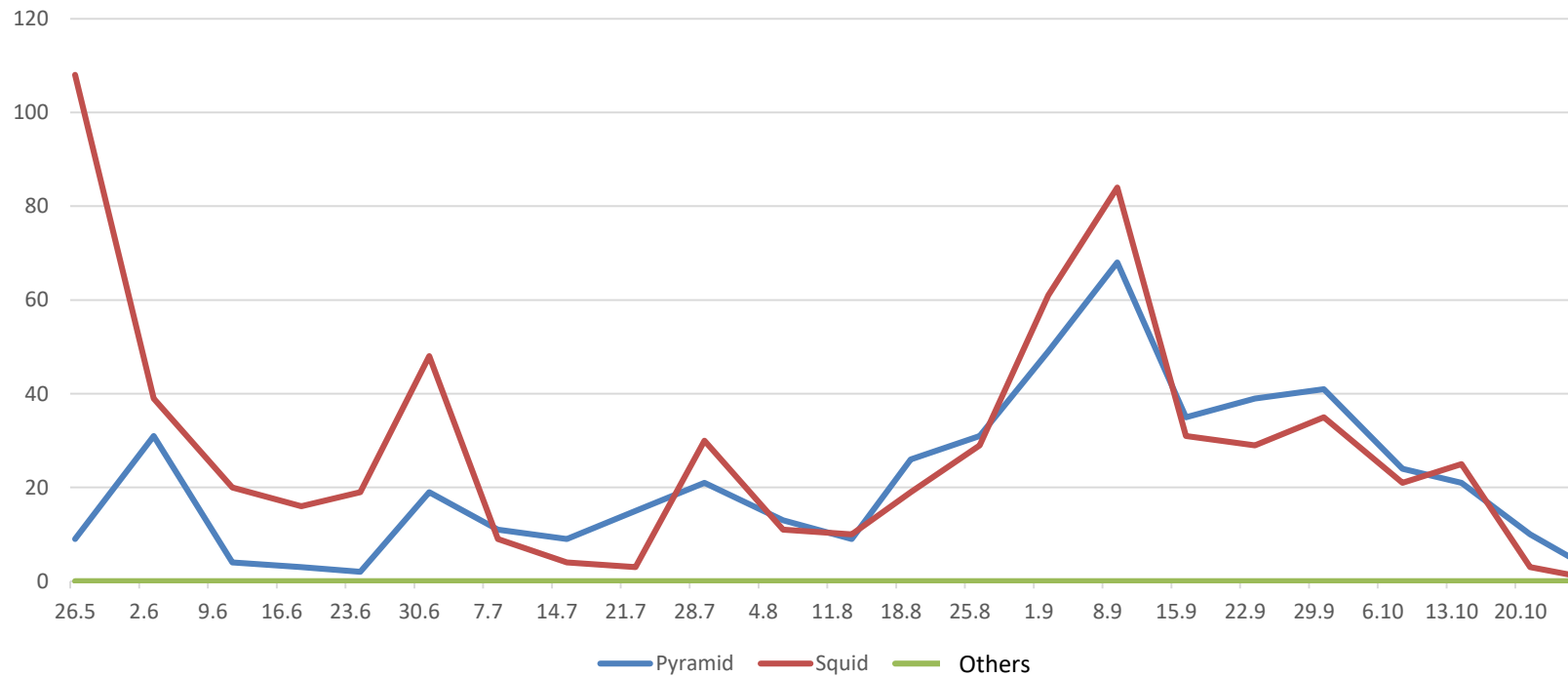
Pear orchard – two layouts: 25 m and 50 m-distance among traps along the borders. Total: 20 traps

Application field test results

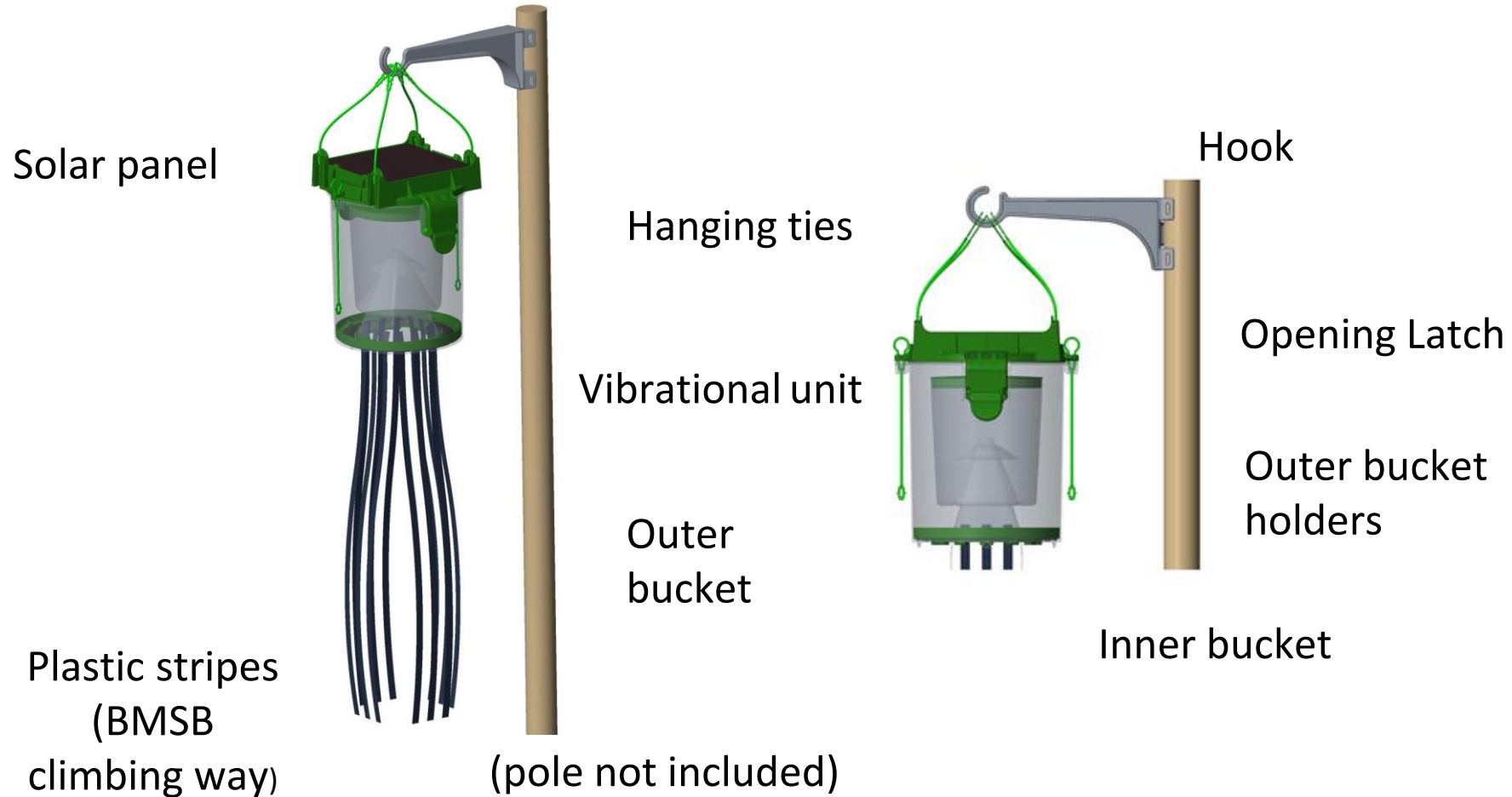


Pyramid vs Squid traps

Seasonal Average Trap Catches of Pyramid trap design vs Squid trap design



SHINDO TRAP final design



SHINDO TRAP FEATURES

- Enhanced catching performance by combining pheromone and vibrational clues with innovative design
- Best monitoring performance
- Early detection already from spring on
- High catching performance through all summer and autumn
- Captures of males, females and juveniles
- Potential Mass-Trapping (studies in progress)

THANKS FOR YOUR ATTENTION

