BIOGARD®
biological First.

SHINDO TRAP

vibrational technology for BMSB trapping

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

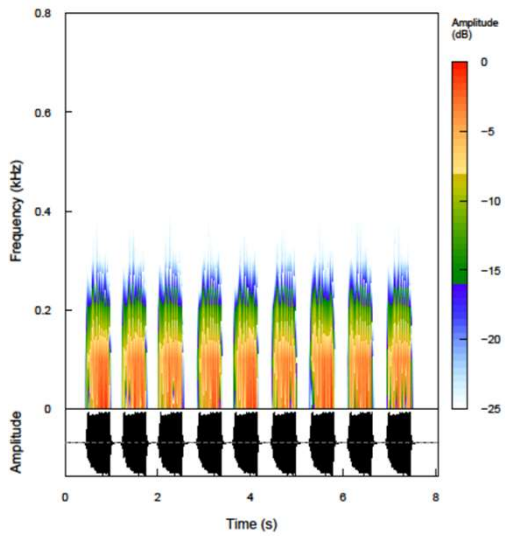
BMSB (*Halyomorpha halis* STAL) use different communication clues including pheromones, kairomones and vibrational signals

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



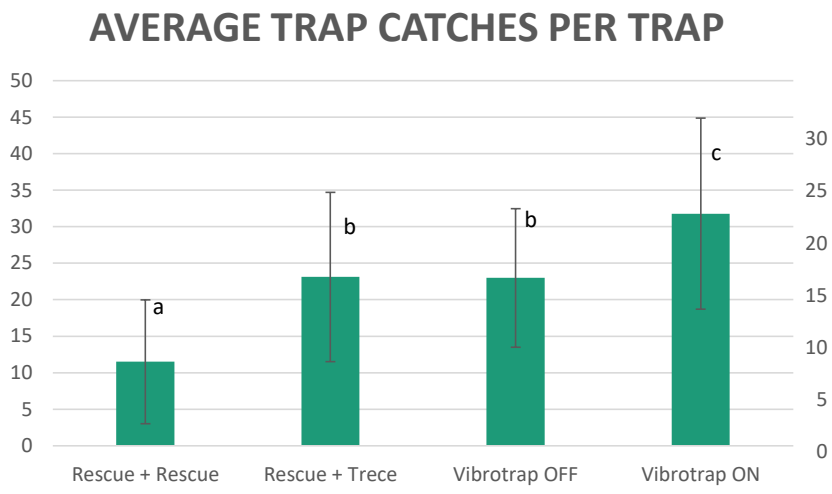
Background

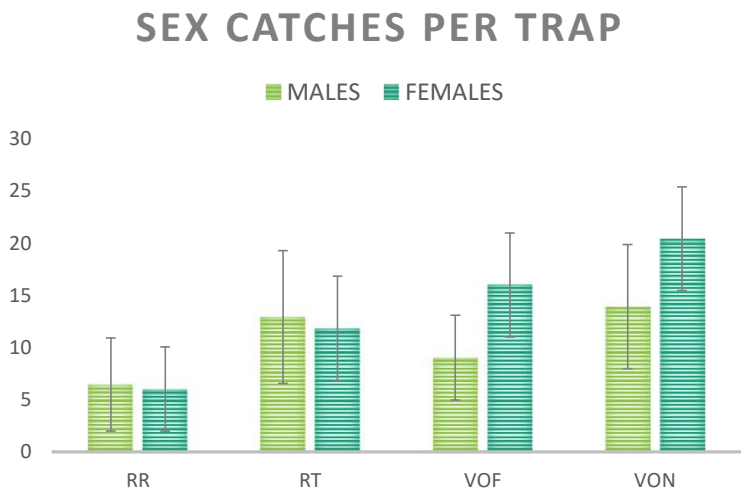
We worked with engineers to find the right shape to transmit the sound and catch the bugs

Comparison field tests

Acronym ->	VON	VOF	GT	GR	
Vibration ->	ON	OFF	NO vibration	NO vibration	
Trap design ->					
Lure ->	Trecé 	Trecé 	Trecé 	General Lures 	
	SHINDO TRAP		Commercial traps		

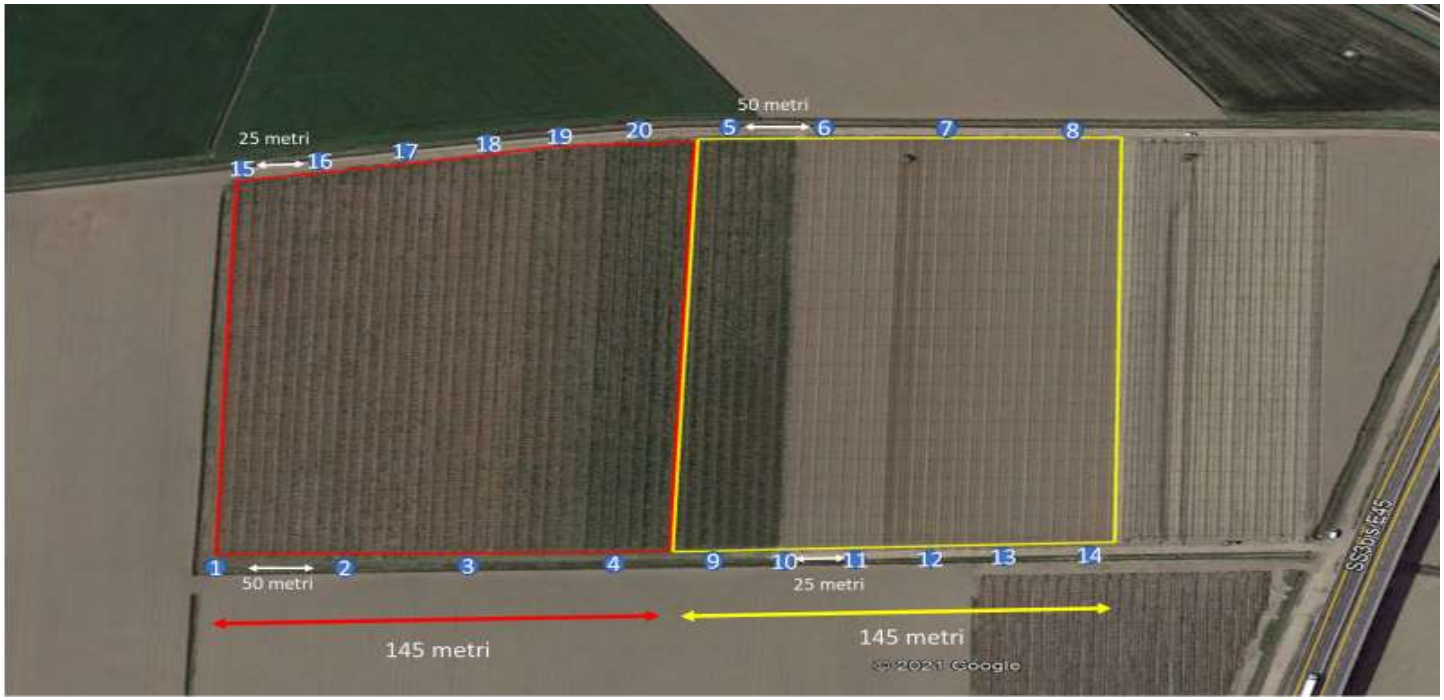
Comparison field test results





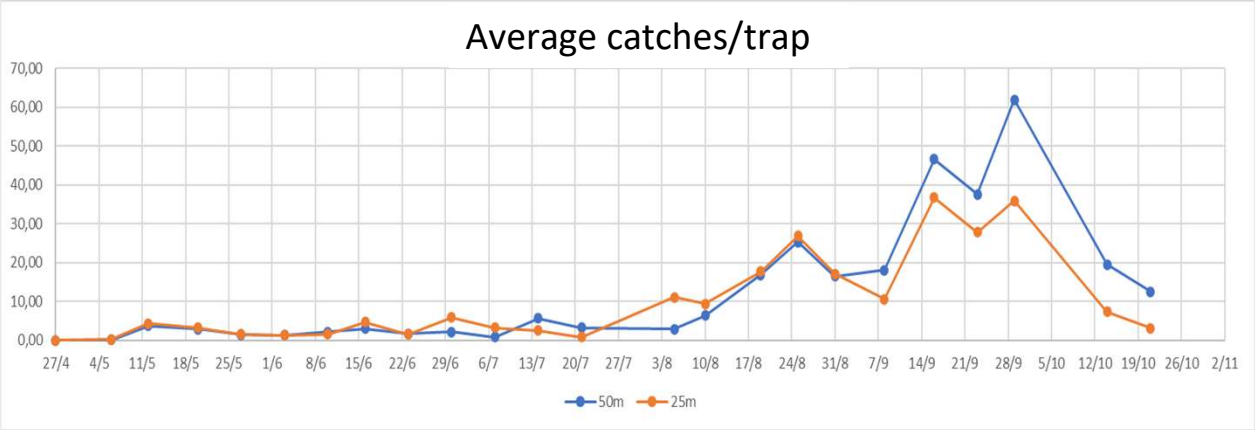
Application and shape field tests

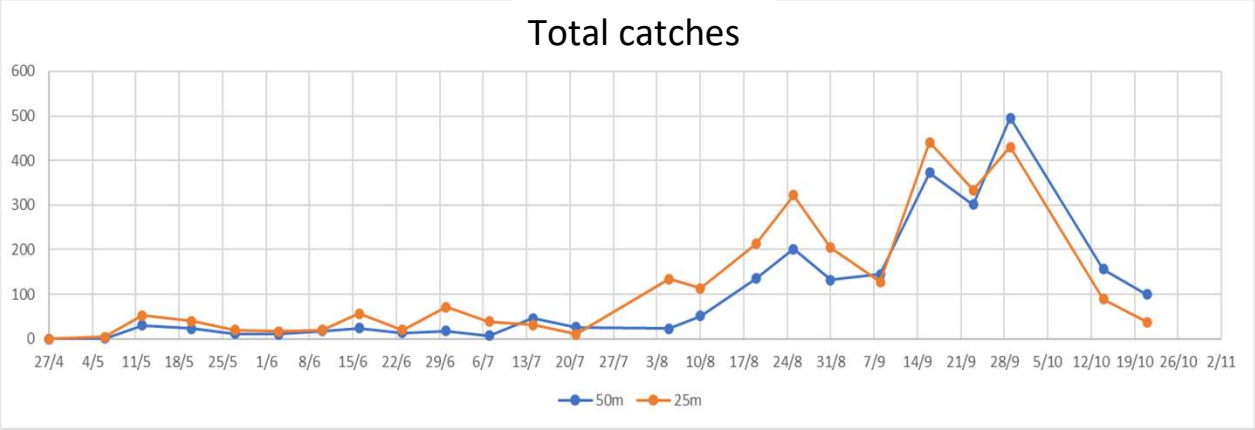
(trap with pyramid base or squid design)



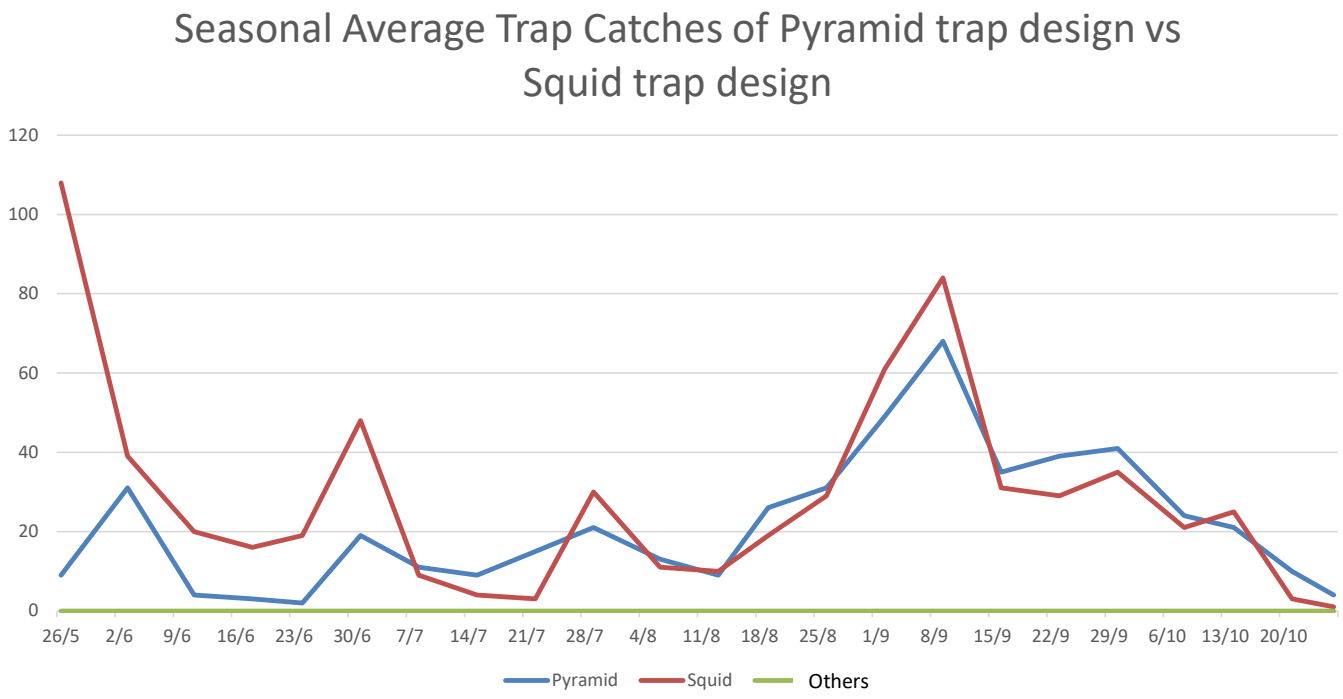
Pear orchard – two layouts: 25 m and 50 m-distance among traps along the borders. Total: 20 traps

Application field test results





Pyramid vs Squid traps



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