

LIGHT TRAPS FOR OSTRINIA NUBILALIS: Trapview AURA FUNNEL SC, Trapview AURA WING SC, Trapview AURA VERTICAL SC

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Purpose of experiment:

The aim of the trial is to find out which one of experimental light traps is most suitable to monitor European corn borer (*Ostrinia nubilalis*). Through experiment we will find out which type of light trap is most successful in attracting and retaining the pest.

1. TRIAL TECHNICAL INFORMATION

Monitored pest: *Ostrinia nubilalis*, European corn borer

Crop: corn

Type of traps in the experiment: VERTICAL SC, WING SC and FUNNEL SC

Serial numbers of Trapview traps:

VERTICAL SC: S09873, S09977, S09849

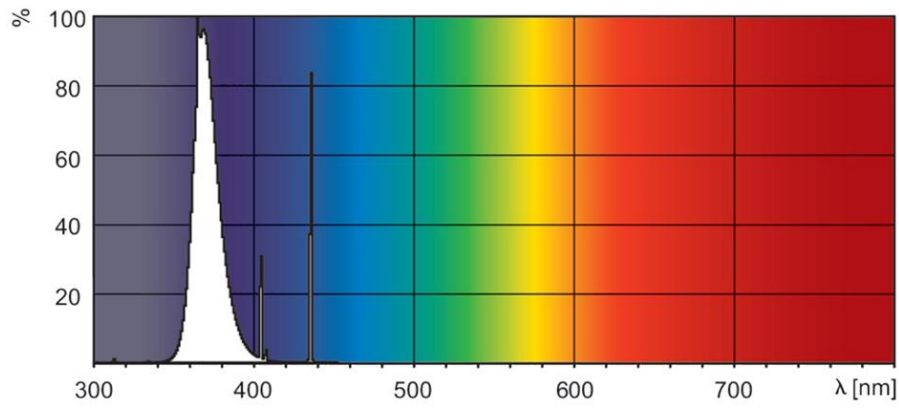
WING SC: S09807 and S09907 with chloroform pump, S09871, S09872

FUNNEL SC: S09818 and S09908 with chloroform pump, S09795, S09868

Lure(s): lights Philips ACTINIC BL TL 40W, Philips ACTINIC BL TL 15W

Features:

- Emit long-wave UV-A radiation in the 350-400nm range
- UV-B/UV-A ratio less than 0.1% (UV-B 280-315nm)
- 100% Lead free
- Low mercury
- Wide power range



Distance between the traps: place the traps at least 80 m apart to make sure they do not interfere with each other.

2. TRIAL CONFIGURATION

Start of experiment: 15.6.2023

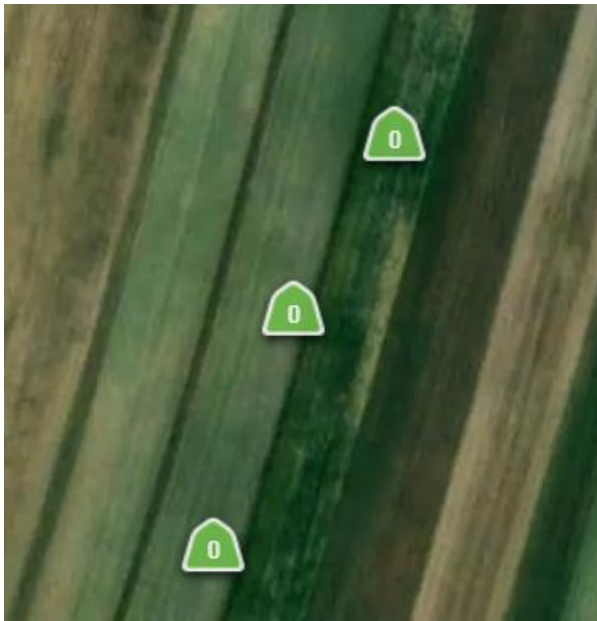
End of experiment: 8.8.2023

Location(s):

Krzeczowice: S09849, S09872, S09908, S09795, S09907, S09818, S09807



Nienadówka: S09868, S09873, S09871



3. INTERMEDIATE TRIAL OBSERVATIONS

VERTICAL traps were mounted with lamp on the side of the trap as it is seen on left picture below. Then they moved the lamp next to the external camera (right picture) which did not change dynamics of catches.



In WING traps we had problem with birds. After mounting bird nets this was solved. Catches remain more or less the same.



Trapview WING SC S09807 has issues with both cameras and did not work from the beginning, by the time that we established what was the problem season was already close to end, so we decided to remove trap from experiment.

Trapview VERTICAL SC S09977 lights were not working, probably from the beginning of season. It did not catch any nocturnal organisms.

At the very beginning of the season all the lights on all of the traps were not light at all, due to firmware error, which was immediately fixed so it did not affect the trial. Lights were set up to light up at midnight until 3 o'clock at the morning, because this was default setting (22:00,01:00 GMT). The problem is that *Ostrinia nubilalis* starts flying at 22:00 local time. 10.7.2023 we reset parameters so the lights were lit from 22:00 to 3:00 (20:00, 01:00 GMT).

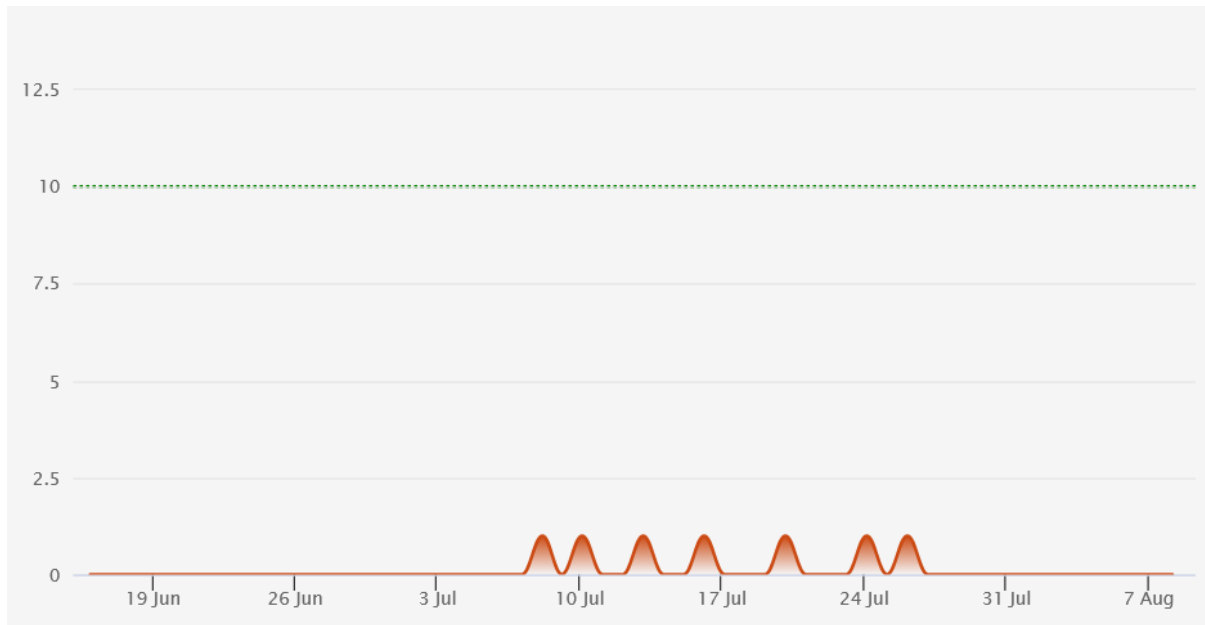
All of the WING SC traps had pheromone lure beside the lights.

4. FINAL TRIAL CONCLUSIONS

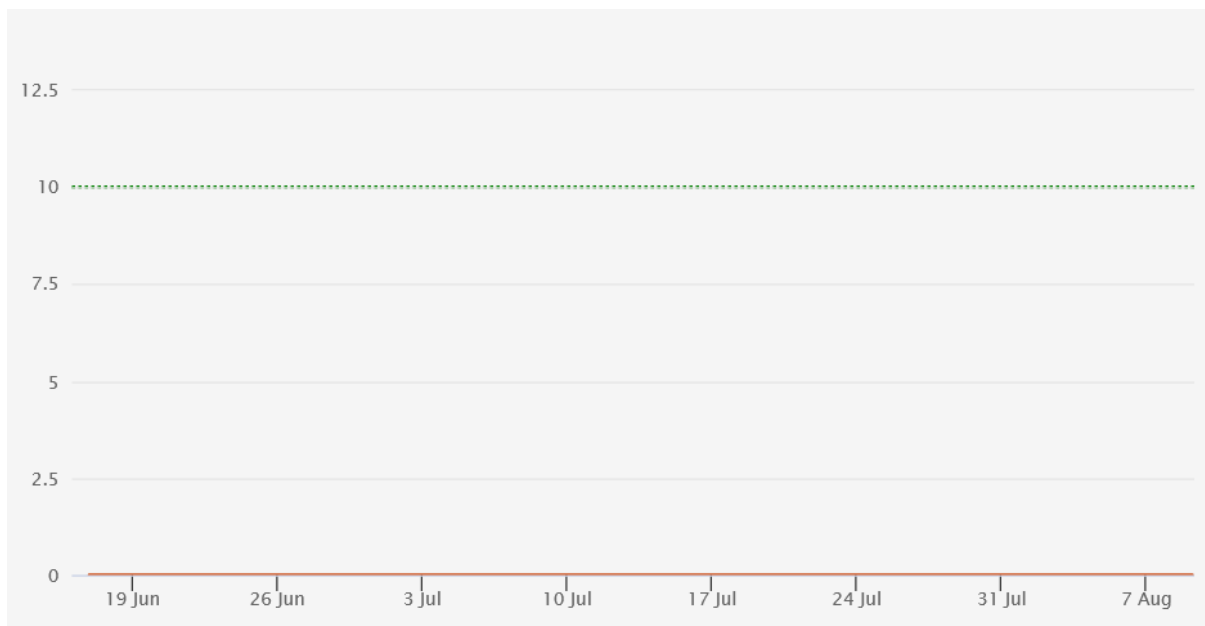
Location Krzczowice:

VERTICAL SC

S09849



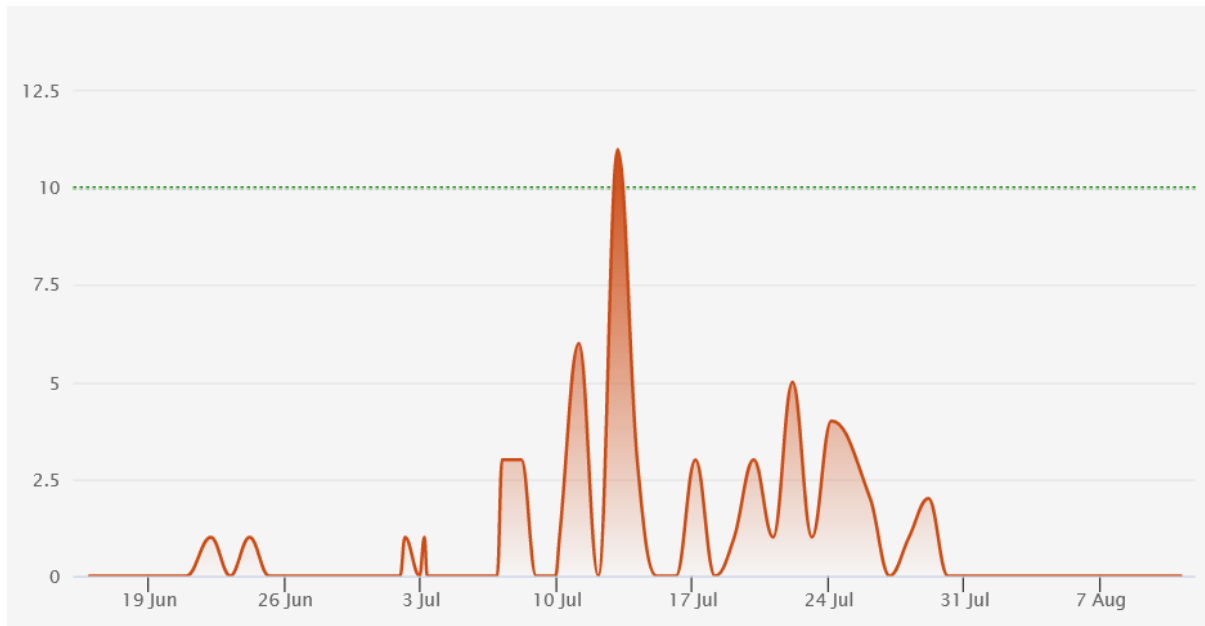
S09977



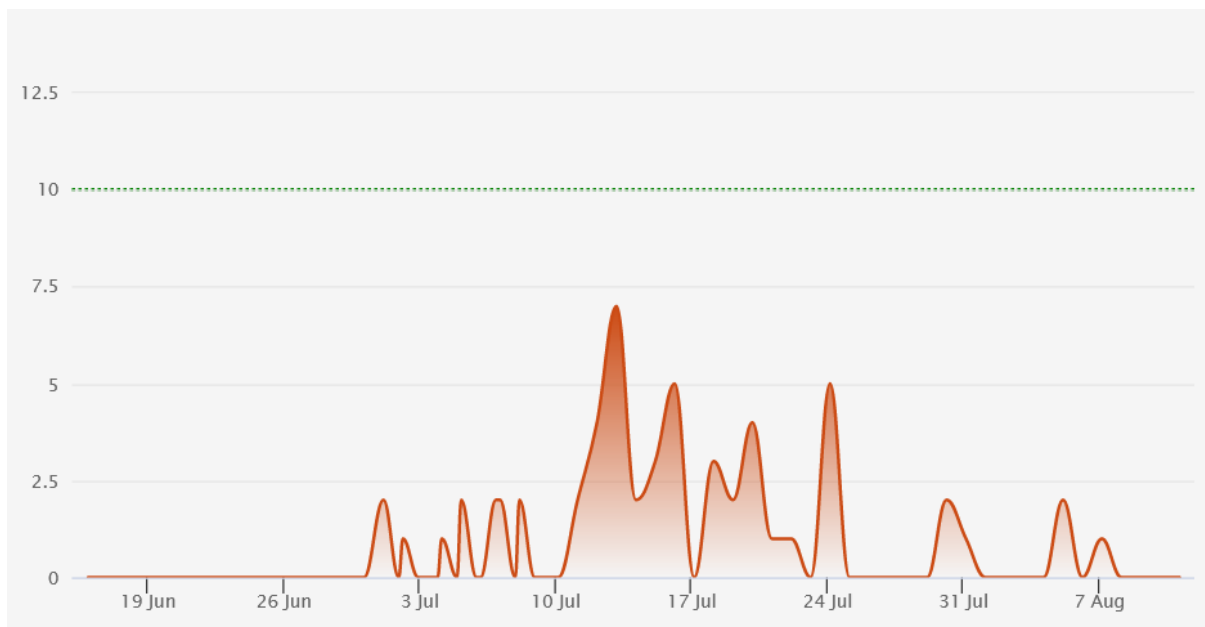
One of the VERTICAL SC traps allegedly did not work properly, because it did not catch not a single nocturnal organism, so I assume that lights did not lit. Other vertical trap caught some *Ostrinia nubilalis* moths, but catches were low.

FUNNEL SC

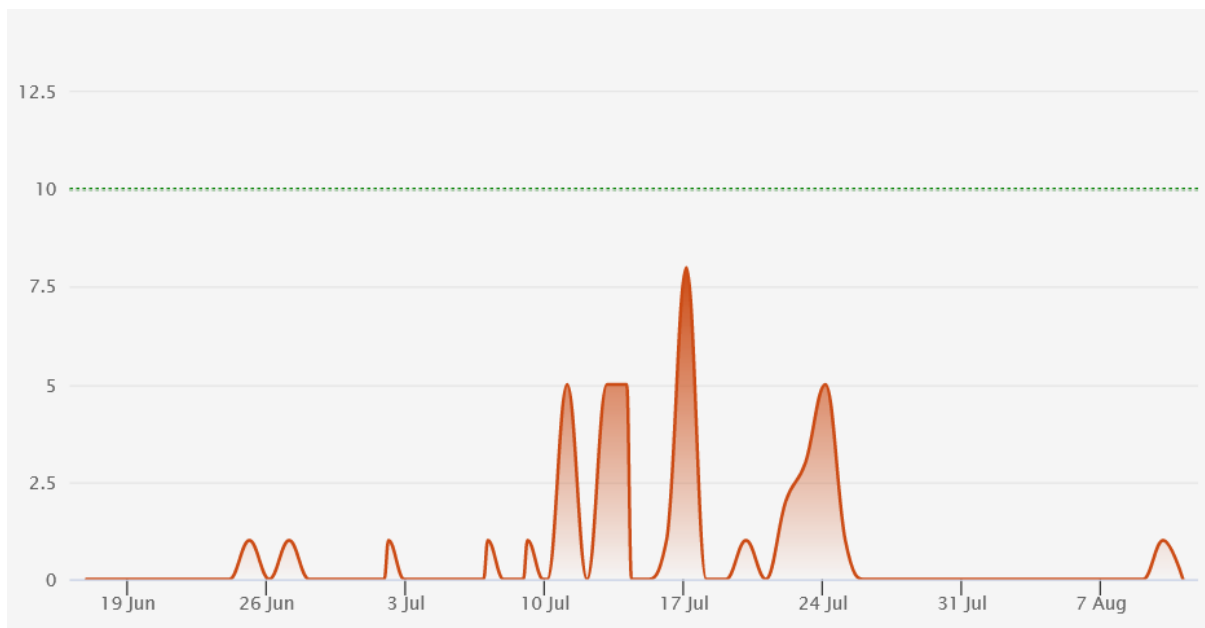
S09795



S09908 with chloroform pump



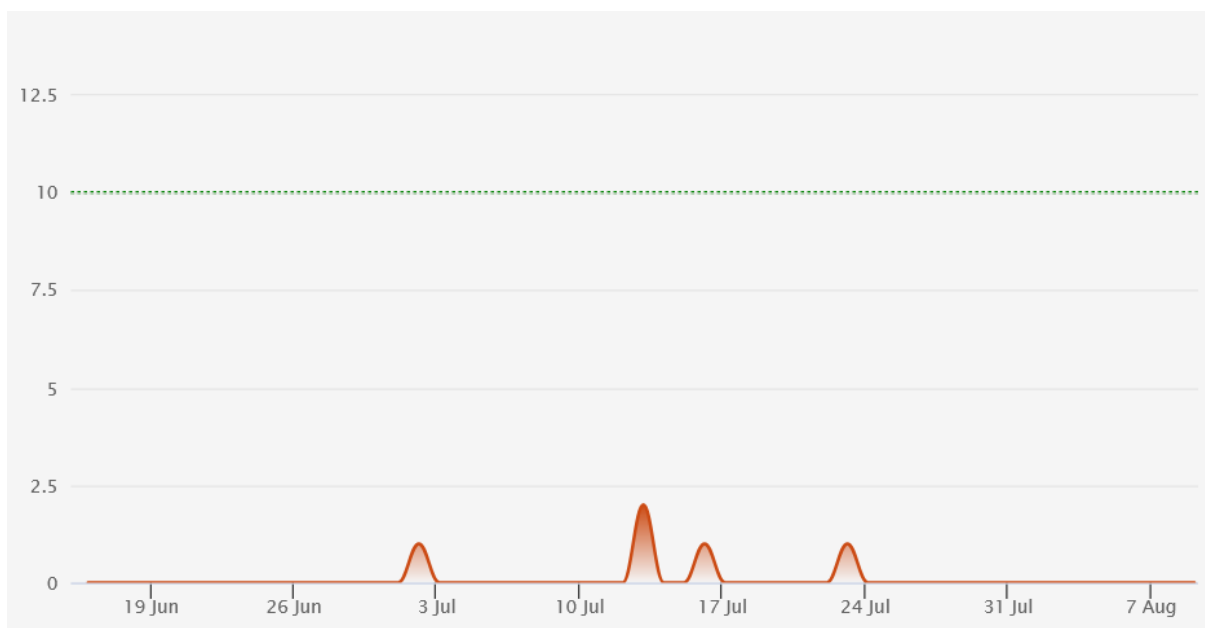
S09818 with chloroform pump



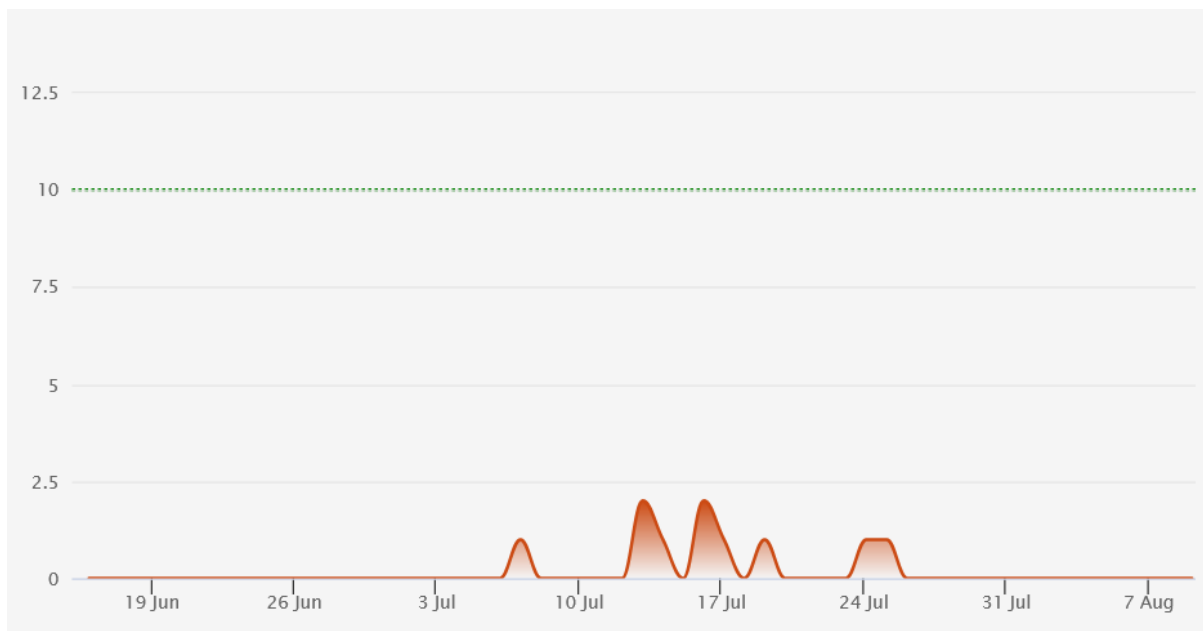
As it is shown on charts above all three FUNNEL SC traps had a similar number of catches, regardless it had chloroform or not. Those traps had the highest catches of all the models of traps used in trial. Trial has shown that on this location FUNNEL SC traps were most effective of all models.

WING SC

S09872



S09907 with chloroform pump

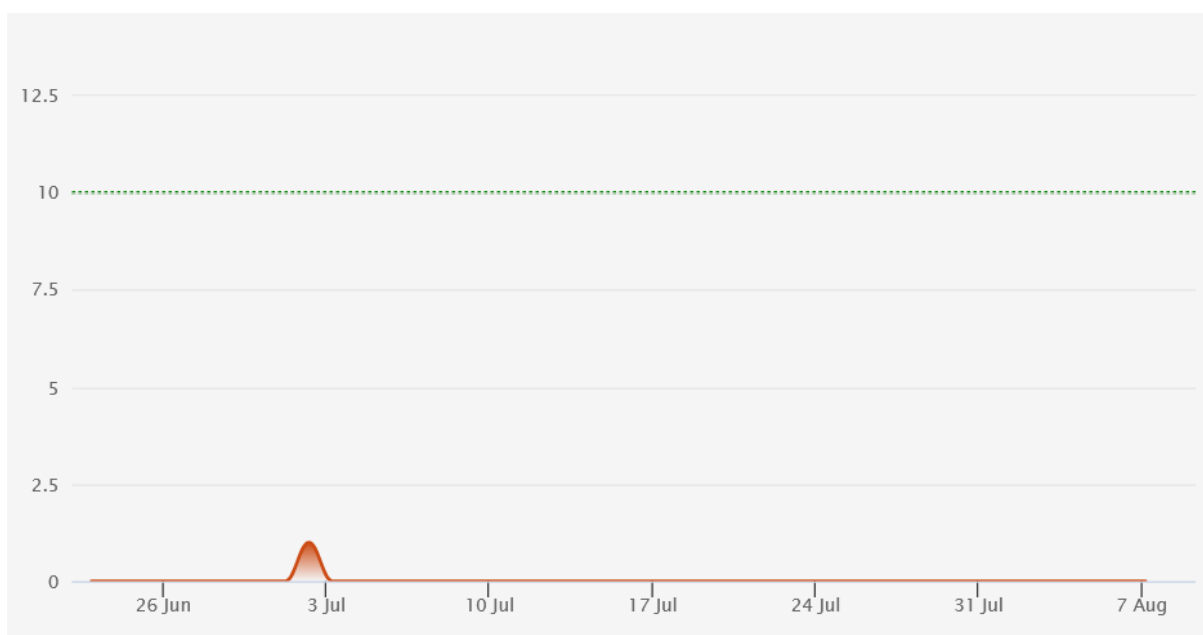


One WING SC trap was excluded from trial due to camera problem. WING SC types of traps often catch birds, so nets are mandatory add-on. As shown on pictures above one of the traps was more effective as another. It may be due to location on the field. In general WING SC type of traps had lower catches than FUNNEL SC type.

Location Nienadówka:

VERTICAL SC

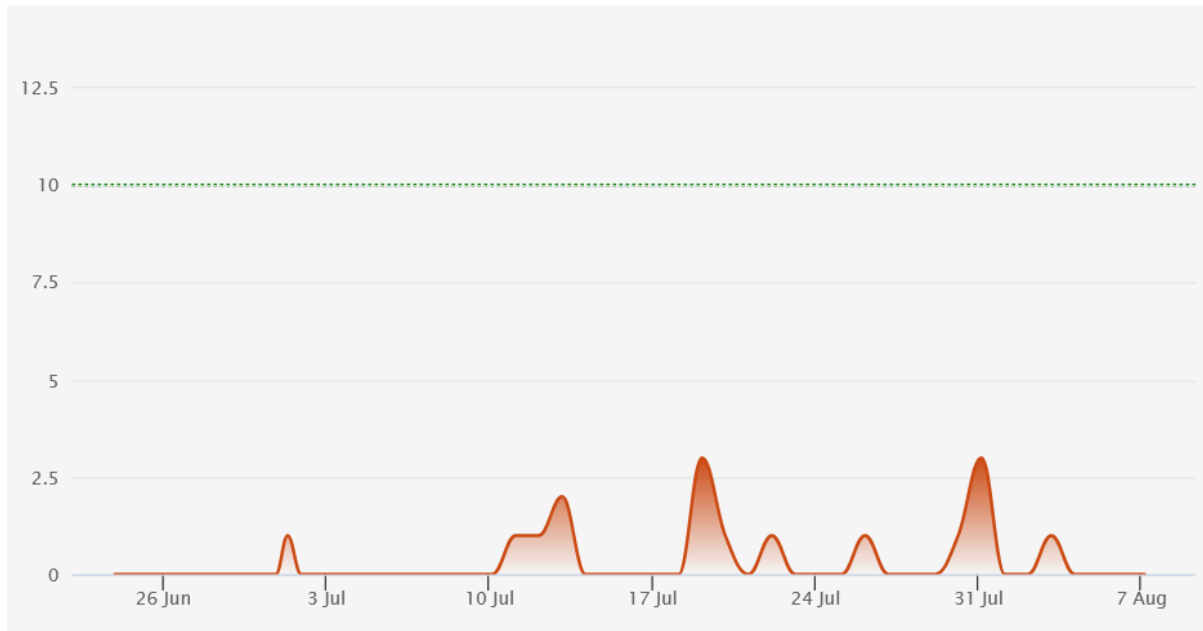
S09873



On other location of trial Trapview VERTICAL SC caught only one *Ostrinia nubilalis* moth.

FUNNEL SC

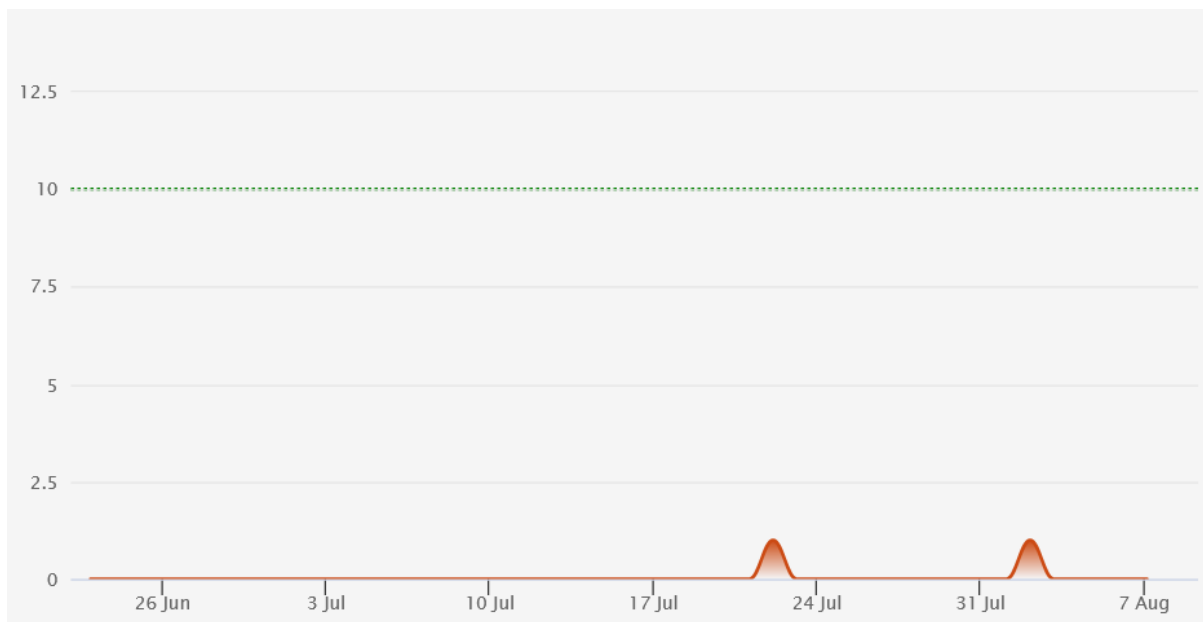
S09868



Funnel had quite a few catches more than vertical and wing trap, although catches was on location Nienadówka in general low in all three types of traps.

WING SC

S09871



WING SC had more catches than VERTICAL SC and lower catches than FUNNEL SC.

DIONP trap (conventional trap)

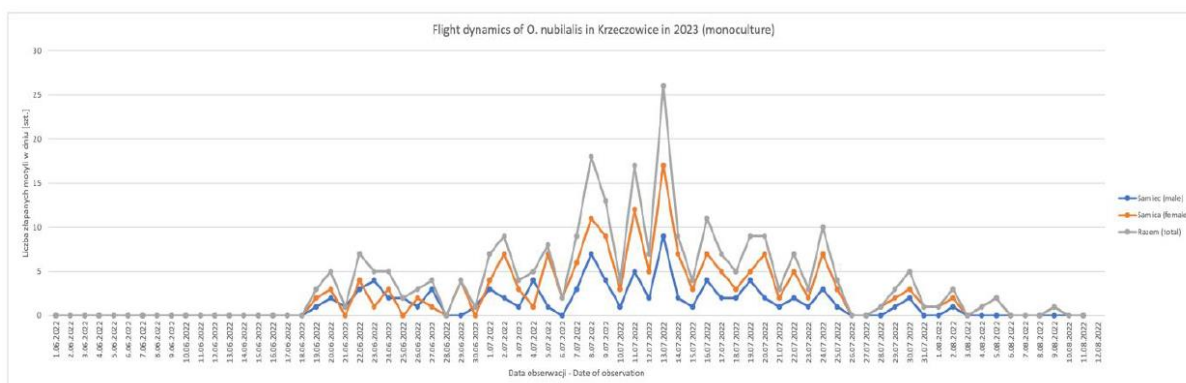


Fig. 3. Flight dynamics of males and females of *O. nubilalis* in Krzczowice, Poland in 2023

TYPE OF TRAP	NUMBER OF CATCHES
VERTICAL SC S09849	7
VERTICAL SC S09977	0
VERTICAL SC S09873	1
FUNNEL SC 9818	42
FUNNEL SC 9795	54
FUNNEL SC 9908	57
FUNNEL SC 9868	16
WING SC 9871	2
WING SC 9907	10
WING SC 9872	5
DIONP TRAP (CONVENTIONAL)	268

CONCLUSION OF TRIAL

Trial has shown that FUNNEL SC is most suitable trap model for monitoring *Ostrinia nubilalis*. The least catches were on VERTICAL SC model. Chloroform does not increase catches. Pheromone baits also does not increase catches.