

Monitoring of *Agriotes* spp. in vegetable fields

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Figure 1: Click beetles, *Agriotes obscurus* (top) and *A. sputator* (below).

Click beetle larvae (Fig. 1 & Fig. 2), known as wireworms (*Agriotes* spp., Coleoptera: Elateridae), cause economic damages in vegetable crops. Currently, there is no plant protection product registered in Switzerland. It is necessary to study further details of the behaviour and the ecology click beetles. Presently, pheromone traps are used for monitoring, but these are not easy to manage for farmers. Therefore feasible trapping methods are needed.

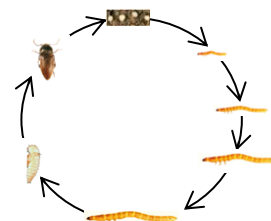


Figure 2: Development of click beetles through egg, larval instars, pupal and adult stages.

Are cut grass-clover traps effective in attracting click beetles?

Material & Methods

Study site:

- Organic vegetable farm (AG, CH), ~380m altitude
- Monitoring period: calendar week 14 - 24
- Grassland with 3 traps (Fig. 3A)
- Vegetable field with 3 traps

Trap design:

- 0.2 m² transparent plastic fixed to the ground and covered with cut grass and clover (Fig. 3B-D).

Species identification:

- Morphological identification
- Confirmation by molecular identification

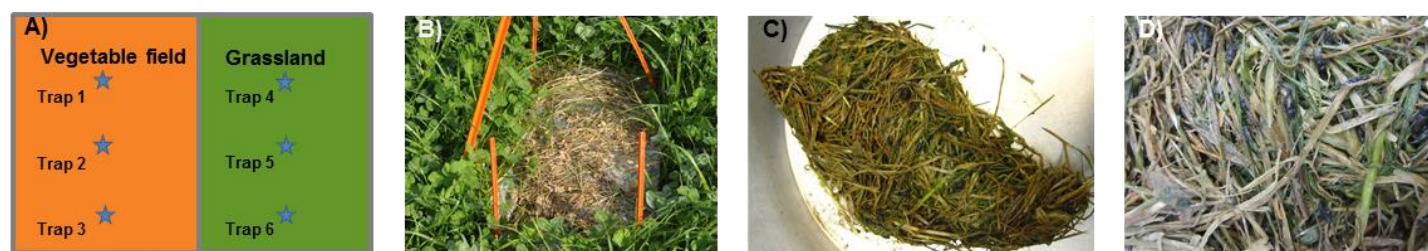


Figure 3: Overview of the trap placement at the study site (A). Example of a trap in the grassland (B), and trap catches (C + D).

Results

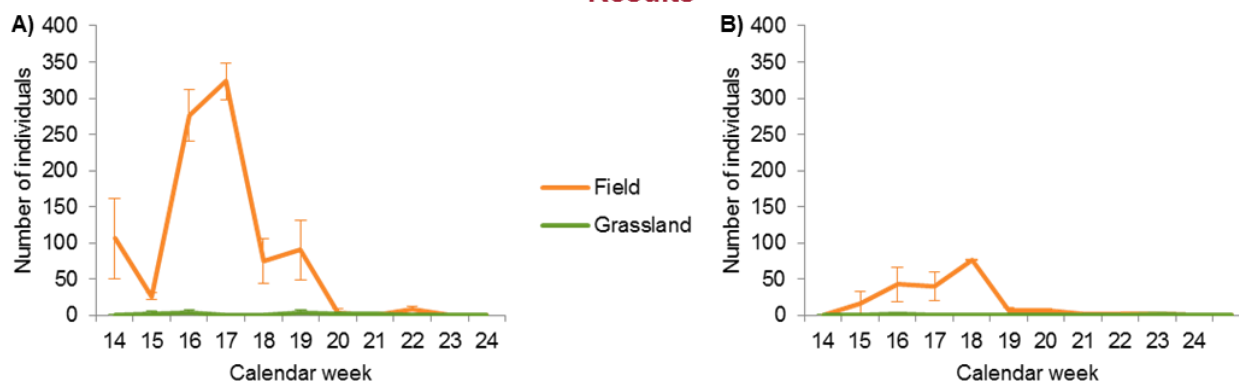


Figure 4: Mean number of individuals \pm standard deviation of click beetles caught in traps in the vegetable field or in grassland per week.

A) *A. obscurus*. B) *A. sputator*. N=3 traps per vegetable field, N=3 traps per grassland.

- *Agriotes obscurus* and *Agriotes sputator* were identified in the traps at the study site.
- In total, 2644 *A. obscurus* and 547 *A. sputator* were caught during the monitoring period.
- More individuals of both species were caught in the vegetable field than in the grassland (Fig. 4).

- First monitoring results show that the tested traps are attractive for click beetles
- Continuation of the monitoring in 2015

References

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