

## Monitoring of gooseberry sawfly (*Nematis ribesii*) in organic soft fruit: Intensive monitoring with yellow sticky tapes and pheromone traps

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### Abstract

Gooseberry sawfly (*Nematis ribesii*) is a persistent pest in organic small fruit crops, capable of defoliating entire plants in a short period. This study evaluates an integrated management strategy combining intensive monitoring with yellow sticky tapes and pheromone traps. Field trials in 2024–2025 at 4 locations in Belgium and the Netherlands showed an early detection of adult flights with yellow sticky tapes. A specific pheromone was very selective and showed high catches at different locations. Monitoring results also demonstrated the presence of the small gooseberry sawfly (*Pristiphora appendiculata*). These techniques demonstrate that combining ‘early warning’ yellow sticky tapes and pheromone lures provides a more complete picture of sawfly activity, both for early detection and seasonal population monitoring.

**Keywords:** Gooseberry sawfly, *Nematis ribesii*, *Pristiphora appendiculata*, biological control, pheromone, yellow sticky tapes

### Introduction

Gooseberry sawfly (*N. ribesii*) is a significant pest in organic cultivation of small fruits like gooseberry, white and red currants and jostaberry. Larvae can defoliate plants rapidly, causing weakened growth and yield loss. The sawfly overwinters as cocoon in the soil, with adults emerging from March onwards. Larvae feed on the foliage in April–May, pupate in the soil, and a second generation can occur during summer, potentially causing further damage (Frankenhuyzen van, 1996). Next to *N. ribesii*, the small gooseberry sawfly (*P. appendiculata*) can also cause damage to soft fruit. This adult sawfly is smaller and black compared to *N. ribesii* who has a yellow stomach. The larvae are green compared to the black dotted *N. ribesii*. Cocoon development is possible in the soil and between leaves (*Pristiphora appendiculata*, n.d.). Organic growers are required to use labor-intensive hand picking, preventive egg treatments (Magnesium sulphate to harden the leaves, which is not always effective) or biological treatments such as spinosad, which have a negative effect on beneficials. This study aimed to develop a sustainable management strategy using intensive monitoring with yellow sticky tapes and a specific pheromone lure.

### Material and Methods:

**Location 1 (BE):** Monitoring was conducted throughout the entire season in 2024–2025 using yellow sticky tapes (Rollertrap Yellow, Koppert) and pheromone traps (David R. Hall, pheromone developed in University of Greenwich) (Figure 1 A and B). Eight yellow sticky tapes, each 1 m long, were placed in 225 m<sup>2</sup> of organic gooseberry (various cultivars). In 2024: one pheromone lure was placed in the trial orchard. In 2025: one pheromone lure was installed at the same location as in the previous year and a second lure was placed 12.5 m away following a newly observed infestation area.

**Location 2 (BE):** Monitoring was conducted throughout the entire season 2025 using one pheromone trap in an organic soft fruit orchard.

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**Location 3 (BE):** Monitoring was conducted throughout the entire season 2025 with 3 yellow sticky tapes and one pheromone trap in an organic soft fruit orchard. 3 yellow sticky tapes of 1 m long were placed in 250 m<sup>2</sup>.

**Location 4 (NL):** Monitoring was conducted in 2025 using yellow sticky tapes and multiple pheromone traps. 170 yellow sticky tapes of 1.5 m long were placed alternated in rows on 5000 m<sup>2</sup> of biodynamic gooseberry orchard (various cultivars).



Figure 1: Trial set up with  
(A) yellow sticky tape (Rollertrap by Koppert)  
(B) pheromone trap (lure of David R. Hall developed in the University of Greenwich)

## Results

In 2024 at **location 1 (BE)**, the first captures occurred on 16 March when the yellow sticky tapes were just deployed, indicating early adult activity. In total 499 adults (male and female) were caught, while a single pheromone trap captured 552 males. Monitoring continued weekly until October (Figure 2 A). At the beginning of the season, the yellow sticky tapes showed higher catches compared to the pheromone lure, indicating a temperature-related delay in lure release. In the middle of the season, peaks were observed between 25 April and 20 June with the pheromone (Figure 2 B). Towards the end of the season, the yellow sticky tapes again proved to be more attractive. In 2025, the pressure at the same trial location was much lower. The first catch with the yellow sticky tapes was on 6 March, whereas the first catch with the pheromone trap occurred on 17 April (data not shown). In addition, the presence of a smaller related species, *P. appendiculata*, was recorded, distinguishable by size and coloration. In Figure 3 A, the presence of *P. appendiculata* was higher at the beginning of the season, while the peak of *N. ribesii* was around 26 June. The total number of *P. appendiculata* was lower compared to *N. ribesii*. In total 96 sawflies were counted. Using the pheromone lure, the total number of catches was much lower (25 in total, data not shown). At 12.5 m further from the trial site, a new infestation was observed, and a pheromone lure was deployed on 20 May. A single trap captured 857 sawflies, indicating that this sawfly does not fly very far.

Monitoring by growers in 2025 at different locations shows similar trends. At **location 2 (BE)**, where pest pressure was high, a single pheromone trap recorded high catches throughout the season. The first adults were recorded on 24 March. Between 11 April and 23 May the highest catches were observed. A total number of 970 individuals was counted (Figure 4 A). No distinction was made between the different gooseberry sawfly species, although most individuals were *N. ribesii*. At **location 3 (BE)**, pest pressure was lower. This organic farm

has been testing the pheromone for several years and used to use small sticky tapes to control pest pressure. Figure 4 B shows the catches on three yellow sticky tapes compared to one pheromone lure. The same pattern as at location 1 in 2024 was observed: higher catches of sawflies at the beginning of the season, while on 17 June the pheromone trap showed an increase of 84 adults. At this location pest pressure remained under control and no intervention was needed.

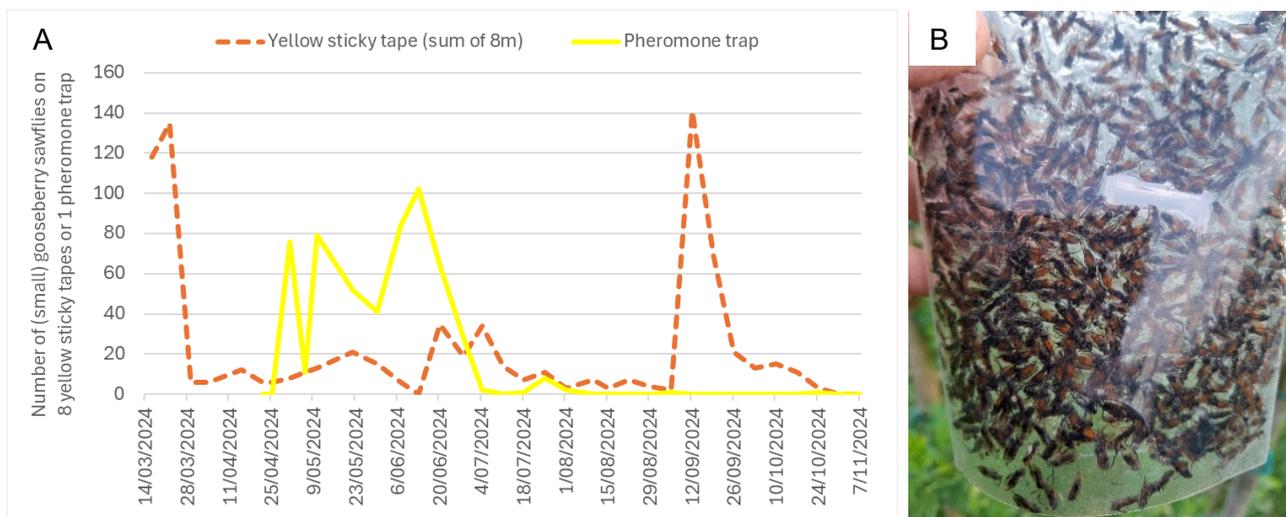


Figure 2: (A) Monitoring of (small) gooseberry sawfly season 2024 at location 1 (BE) on 8 yellow sticky tapes (sum) compared to one pheromone lure (B) High catches in the pheromone trap

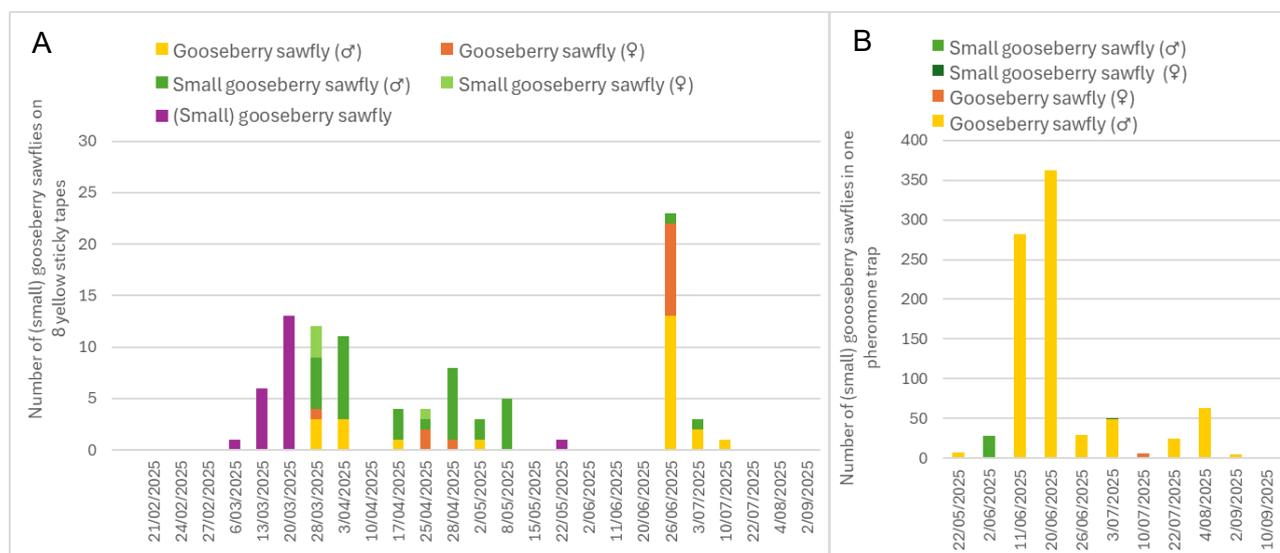


Figure 3: Monitoring of (small) gooseberry sawfly season 2025 at location 1 (BE) (A) on 8 yellow sticky tapes (sum) (B) with one pheromone trap, 12.5 m further than the trial site

At **location 4 (NL)** intensive monitoring with yellow sticky tapes and pheromone traps was carried out in a biodynamic gooseberry field with different cultivars in 2025. Here as well, early flights were detected earlier with the yellow sticky tapes (25 March) compared to the pheromone lure, which recorded its first catch on 2 April (data not shown). On 25 March, a total of 169 gooseberry sawflies (*N. ribessi*) and 73 small gooseberry sawflies (*P. appendiculata*) were counted on 8 yellow sticky tapes of 1.5 m long, giving a total of 242 adults (counts only for 25 March, no further counting). Later in the season, adults in the

pheromone traps increased with a peak around 29 April. There was a large variation in adults caught with the pheromone traps across different rows (Table 1). In total, 1037 adults were trapped between 25 March and 13 May in 10 traps (on average, 103.7 individuals per trap).

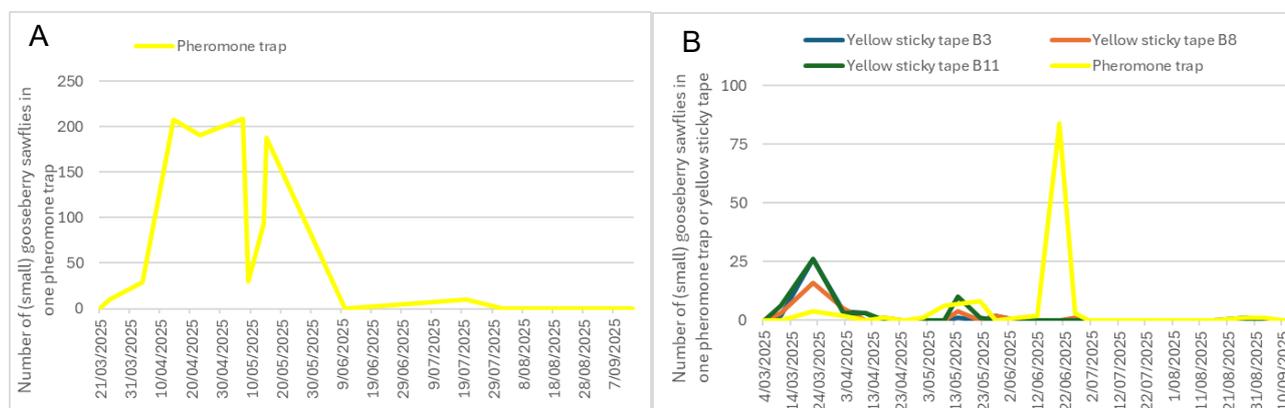


Figure 4: Monitoring of (small) gooseberry sawfly season 2025

(A) at location 2 (BE) with only one pheromone trap

(B) at location 3 (BE) with 3 yellow sticky tapes (1 m long) compared to one pheromone trap

Table 1: Monitoring of (small) gooseberry sawfly season 2025 at location 4 (NL) with one pheromone trap in different rows

Row	1	3	4	5	7	15	17	19	20	21
Number of (small) gooseberry sawflies	10	8	13	11	19	40	156	289	340	151

## Discussion

Monitoring across multiple locations confirmed that yellow sticky tapes (Rollertrap) allow earlier detection of adult gooseberry sawflies as well in Belgium as in the Netherlands. Pheromone traps captured higher numbers later in the season, reflecting differences in lure release. In 2025, species composition also varied, with *P. appendiculata* appearing primarily at the beginning of the season and *N. ribesii* peaking later. Differences in pest pressure between sites influenced total catches and timing, highlighting the importance of local monitoring, even within short distances (12.5 m or within rows). These results highlight several potential directions for further research, including the influence of cultivar differences, mechanical weeding, trap density on monitoring efficiency, population dynamics of *P. appendiculata* and *N. ribesii*. Overall, combining ‘early warning’ yellow sticky tapes with pheromone lures provides a more complete picture of sawfly activity throughout the season.

## Acknowledgements

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