



**PRESENTATION BOOKLET OF
SIMPLIFIED METHODS FOR THE
MONITORING OF FUNCTIONAL BIODIVERSITY
IN ORGANIC ORCHARDS**

2017

Contact : *[put the name and contact of the national coordinator]*

Purpose of the monitoring methods:

- Familiarize producers with the simplified observation of beneficials
- Raise the awareness of producers to the natural regulations that are occurring in their orchards
- Engage the adaptation of plant protection practices in order to optimize these regulations
- When possible, observe the effect on biological control of agroecological infrastructures implemented in the orchard over space and time
- The state of the art does not provide threshold values of natural enemies as decision support for immediate pest management measures as pesticide application

Purpose of evaluation of monitoring techniques

- Co-define the criteria that have to be met so that the methods can be used by the farmers and advisors
- Refine the proposed protocols for the different methods : Determine the respective advantages and the flaws of monitoring methods and their protocols and refine the protocols accordingly
- Bring out and build on the assessment of the farmers about the methods

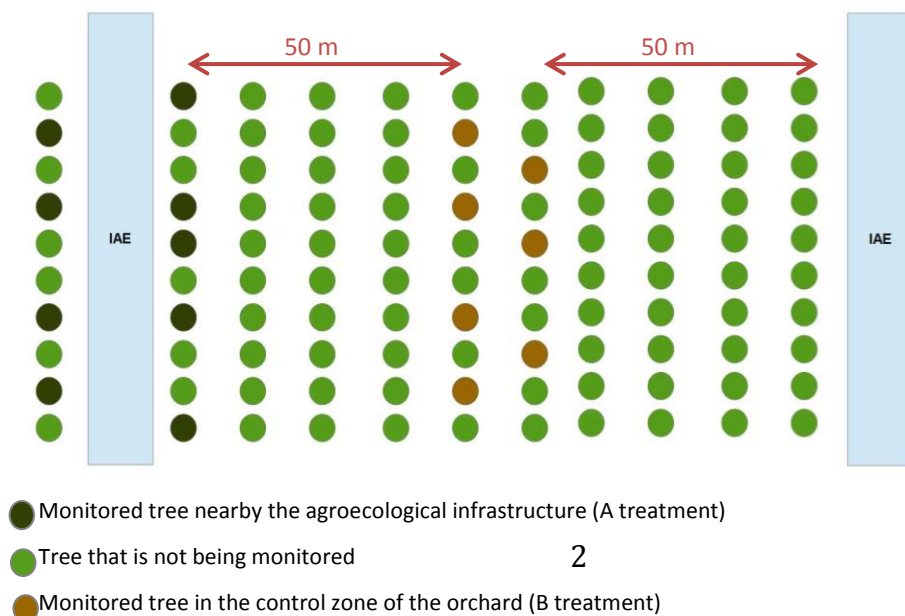
Method :

Four monitoring methods have been selected by the EcoOrchard project after literature review and initial testing. Each producer in the EBIONET network is offered to choose one or more monitoring method among the four presented in this booklet and additional methods suggested by the stakeholders during the national workshops. The list with the additional methods are in the report of the workshop, the organizers should be available to provide protocols for these methods (for that purpose, it is possible to contact *[put the name and contact of the national coordinator]*). The producers and advisors will apply the method(s) in the orchards they work in. The purpose is to familiarize with the monitoring of the main beneficials and to evaluate how user-friendly the methods and instructions are. The method can be tested in several ways :

- By comparing the results of a monitoring nearby an agroecological infrastructure (AEI - e.g. a composite hedge, a flower strip, a water body, nest boxes etc) with the results of a control monitoring distant from any AEI (cf. figure below),
- In an orchard which is managed with an agroecological practice, like reduced mowing,
- In order to follow the temporal evolution of arthropods at key moments of the season, like the arrival or the peak of abundance of an insect (according to the life cycles of the aimed populations, cf. protocoles),
- To monitor the impact of a treatment on arthropods (observation before and after the treatment)

The chosen method will be used according to a sampling plan described in the sheets below.

If the methods are used to compare the presence of beneficials between two treatments (two separate zones of the same orchard or two different orchards), one being agroecological and the other being a control, it is important to make sure that the control is distant enough from any agroecological infrastructure that could confuse the result. Ideally the control should be at 50m distance of any AEI. Many factors impact the presence of insects in a plot (e.g. farming practices, landscape, variety and age of the trees), it is important to take this into account when comparing the results of monitoring that have been performed in different orchards.



Methods' description

(more information in the method sheets)

Each method targets different groups of arthropods. It is interesting to match up the use of a method with the presence of the targeted groups and with the phenological stages during which apple trees are particularly threatened by pests (more information in the protocols).

Beneficials may be sensitive to insecticide treatments such as Neem or oil. Therefore, if a plot has been treated a short time before the monitoring, it is normal to observe a small number of beneficials. It is better to carry out the monitoring in orchards with fewer applications (e.g. in orchards with varieties that are less sensitive to aphids).

I. Visual observation of the rosy apple aphid



Following IOBC* recommendations, sample 10 trees in the orchard and identify 10 clusters (i.e. corymb) on each tree (sample trees randomly and make sure not to be attracted by clusters that are already infested). List the absence or presence of aphids or fundatrix (cf. photo on the protocol) per cluster. Mark the clusters with aphids.

When the season is more advanced, complete the monitoring by opening between 10 and 20 colonies on the marked clusters in order to make the inventory of the active natural enemies and to count the number of marked colonies that have disappeared.

Measures the infestation rate and the predation activity.

II. Beating (non destructive)



Sampling and marking of 10 trees per **treatment** (or 33 trees if the farmer is already used with IOBC guidelines). Beat one branch per tree three times over a white tray (45 x 45 cm). Vary the side of the tree that is beaten (North/South) and make sure to beat branches that have approximately the same size and with a similar strength so that the beatings are comparable. Quickly identify and count the present beneficials.

Provides a representation of the arthropods population in the canopy with a favourable bias towards bigger arthropods. The method particularly targets ladybirds, green lacewings, spiders, predatory bugs and earwigs.

III. Predation card



Sheets, on which eggs of codling moth or aphids have been glued (called sentinel preys), are exposed in the orchard. After **24** hours, the proportion of sentinel that has been predated is observed. The sheets can be placed under the tree's leaves facing the ground. Mark the trees with sheets with coloured ribbon. The method indicates a potential predation service. In the case of predation sheets with aphids the presence of ants will have an impact on the predation service since they protect aphids from natural enemies. This cannot be measured using predation cards.

IV. Cardboard band-traps

Make a roll of corrugated cardboard and place it into a bottle in which the bottom has been removed. Fix the bottle vertically against the trunk right under the foliage. This method is used to count some of the natural enemies that seek refuge in the corrugated cardboard. The band is kept on the tree for 1 week. It is to be opened carefully above a container OR shaken in order to collect the present insects, which are then identified and counted. Efficient method to assess especially earwigs and spiders.



* International organization for Biological control, international network of experts for improvement of practices and integrated pest management, through common pest and diseases assessment methods.

Summary of the proposed methods

N.B. The dates for the monitoring sessions are suggestions and they are motivated in the record sheets

Technique	Target population	Suggested protocol	Obtained results	Required equipment	Suggested dates for the monitoring
Visual observation	Aphid colonies + Active natural enemies	At 1 st monitoring mark 10 clusters / tree on 10 trees per treatment or 20 trees in total. At 2 nd monitoring note all remaining colonies and open up to 10-20 colonies per treatment or in total	Aphid infestation rate, natural enemy presence rate, biological control.	Marking band, a loup can be useful	1 st monitoring: at BBCH 59 (Balloon stage) 2 nd monitoring: At BBCH 69-70 (after petal fall).
Beating	Present beneficials	1 branch per tree beaten 3 times. 10 trees per treatment or 20 trees in total (or following IOBC guidelines 33 trees per treatment).	Counting of the present beneficials	White tray (45 x 45 cm) + stick + marking band + record sheet/pen	1 st monitoring: BBCH 69 (after petal fall) 2 nd monitoring: 1 month later
Predation card	Predation of the codling moth	10 cards per treatment or 20 cards in total	Predation rate of the eggs	Predation cards (supplied) + magnifying glass + marking band + stapler (not supplied)	2 passages per monitoring: set up and withdrawal (+24h) 1 st monitoring: from the first egg laying period onwards 2 nd monitoring : 1 month later
	Predation of the aphid	10 cards per treatment or 20 cards in total	Predation rate of the aphid	Predation card (supplied) + marking band + stapler (not supplied)	2 passages per monitoring: set up and withdrawal (+24h) 1 st monitoring: shortly after petal fall (BBCH 69) 2 nd monitoring: 15 days or 1 month later
Cardboard band traps	Present beneficials	10 band traps per treatment or 20 band traps in total	Counting of the present beneficials	Corrugated cardboard (20 x 10 cm) + sticky tape + marking band	2 passages per monitoring : set up and withdrawal (1 week) 1 st monitoring: from mid-April onwards, e.g. at the beginning of June 2 nd monitoring: 1 week later



IMPORTANT

- ➔ Think carefully about the orchard(s) that will be monitored and discuss about the choice with the organizers of the workshop
- ➔ Verify the compatibility of the chosen method with the planned agricultural interventions (mode of irrigation, plant protection treatments, use of tractors...)
- ➔ Think of measuring the time needed every time the method is being used
- ➔ All needed material will be provided
- ➔ Sample the trees in regular manner all over the orchard. For instance, walk along the imaginary lines of a "Z" or a cross across the orchard and sample every 3rd or 5th tree along a row.

LINEE TECNICHE - MELO

DISCIPLINARE DI DIFESA DEL MELO Stadi fenologici secondo Fleckinger - Scala BBCH



A Gemma d'inverno
BBCH00

A Ingrossamento gemme
BBCH01

B Rottura gemme
BBCH07

C Punte verdi
BBCH07



C3 Orecchiette di topo
BBCH10

D Mazzetti affioranti
BBCH53

D3 Mazzetti divaricati
BBCH56

E Bottoni rosa
BBCH57



F Apertura fiore centrale
BBCH60

F2 Piena fioritura
BBCH65

G Caduta petali
BBCH65

H Fine caduta petali
BBCH69



I Allegazione
BBCH72

J Ingrossamento frutti
BBCH79



NOTATION SHEETS FOR THE MONITORING OF FUNCTIONAL BIODIVERSITY

Once the monitoring method has been chosen, make a print of the sheets to carry out the monitoring and to do the notations.

Fill a blank notation sheet for each monitoring session of the season.

The first sheet is meant to help the identification of the main beneficials.
Make a colour print for the producers who have chosen the visual counting, beating and band trap methods.

Content:

1. Identification of the main beneficials (2 p.)
2. General description (1 p.)
3. Visual observation of the rosy apple aphid (3 p.)
4. Beating (3 p.)
5. Predation card – codling moth (2 p.)
6. Predation card – rosy apple aphid (2 p.)
7. Cardboard band trap (2 p.)
8. Pluriannual grid (1p.)

Contact : *[put the name and contact of the national coordinator]*

Identification of the main beneficials (1/2)



Ladybird (Adult)



Ladybird (Larva)



Gall mite (Larva) feeding on an aphid



Green lacewing (Larva)



Syrphid (Larva)



Earwig



Predatory bug (eg: Miridea family)



Predatory bug (eg: Anthocoridae family) in an aphid colony



Predatory bug (nymph)



Predatory bug (nymph)



Spider (eg: Lycosidea family)



Opilion

General description (1/1)

Name of the farmer:

Localisation:

Describe what you want to **test** (Agroecological infrastructure or practice, effect of a treatment, key moment in the biology of an insect, etc.)

.....
.....

Attributes of the orchard

In order to test an infrastructure, a treatment or a practice, you can do a **comparative monitoring** between a treatment (orchard or zone of an orchard – that we can call "A treatment") with this infrastructure or practice and a treatment without (that we can call "B treatment"). Both areas should be as similar as possible, with minimum distance of 50 meters.

- If you choose to compare the monitoring of two different orchards, fill out the two following parts.
- If the comparison takes place in the same orchard, or if you do a monitoring without testing a practice or an infrastructure, only fill one part out.

A treatment

Planted variety:

Age of the orchard :

Surrounding landscape : Simple (barely diversified vegetation, wide open spaces, etc.)
 Intermediate
 Complex (diversified vegetation, hedges, smaller spaces)

Production mode : Organic Integrated Conventional

B treatment

Planted variety:

Age of the orchard :

Surrounding landscape : Simple (barely diversified vegetation, wide open spaces, etc.)
 Intermediate
 Complex (diversified vegetation, hedges, smaller spaces)

Production mode : Organic Integrated Conventional

If the two treatments are in the same orchard, what is the distance between them? m
(should be at least 50 meters)

Visual observation of the rosy apple aphid (1/3)

You can fill this table for 1 or 2 monitorings in the same season.

As plant protection and irrigation have an impact on result, you can also indicate which practices you had before monitoring.

	1 st time	2d time
Date of first monitoring		
Dates of the second monitoring		
Plant protection treatments applied 15 days before monitoring	No Fungicide : Insecticide : Herbicide :	No Fungicide : Insecticide : Herbicide :
Irrigation 7 days before monitoring	No Surface Sprinkler localized	No Surface Sprinkler localized

Time needed to make the monitoring:

< 30 min 30min to 1h 1h to 2h > 2h

Personal perception: fast medium long

IMPORTANT :

- ➔ **Suggestion:** Carry out the 1st monitoring **at BBCH 59 (Balloon stage)** and the 2nd one at **BBCH 69-70 (after petal fall)**. It can be interesting if you ask yourself whether or not to make an anti-aphid treatment during petal fall stage, and if you want to monitor the presence of beneficials. However at this early stage of the season, it is more difficult to detect numerous beneficials in the aphid colonies, which does not mean that they are absent of the orchard.
- ➔ It is recommended to comply to a **random sampling** method in order to avoid being only attracted by damaged trees (e.g. walk along the imaginary lines of a "Z" or a cross across the orchard and sample 1 tree over 3 or 5 along a row). You can also choose trees from a distance to avoid being attracted by nests.
- ➔ Use the method in **stable climatic conditions** (neither wind nor rain) and in the **morning**, especially if you open the colonies as beneficials are less mobile at this time of the day.
- ➔ **N.B.** If there is no comparison between two treatments, fill out the entire notation sheet independently from the titles "A and B treatment".



Bring the booklet and the necessary equipment in the orchard during the monitoring.

Visual observation of the rosy apple aphid (2/3)

- ➔ Among the marked clusters, open randomly 20 colonies. If you can't find 20, try to open at least 10 (if necessary open colonies on unmarked clusters and indicate it on the notation grid).
- ➔ For each opened colony, check the box of the present beneficials. If there are no beneficials check "only aphids". If there are ants (defender of aphids against beneficials check the corresponding box



A Treatment									
Number of beneficials in the colony									
Colony n°	Ladybird		Green lacewing (Larva)	Syrphid (Larva)	Earwig	Bug	Other	Ant	Only aphids
	Larva	Adulte							
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20				11					

Visual observation of the rosy apple aphid (3/3)

B Treatment									
Number of beneficials in the colony							Other	Ant 	Only aphids
Colony n°	Ladybird		Green lacewing (Larva) 	Syrphid (Larva) 	Earwig 	Bug 			
	Larva 	Adulte 							
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

	A treatment	B treatment	All the trees
Total of colonies with beneficials			
Number of colonies that have disappeared			
% of presence of natural enemies	x5 = %	x5 = %	x2,5 = %

Beating (1/3)

You can fill this table for 1 or several monitorings in the same season.

As plant protection and irrigation have an impact on result, you can also indicate which practices you had before monitoring.

	1 st time	2d time	3d time	4 th time
Date of beating				
Plant protection treatments applied 15 days before monitoring	No Fungicide : Insecticide : Herbicide :	No Fungicide : Insecticide : Herbicide :	No Fungicide : Insecticide : Herbicide :	No Fungicide : Insecticide : Herbicide :
Irrigation 7 days before monitoring	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized

Time needed to make the monitoring:

< 30 min 30min to 1h 1h to 2h > 2h

Personal perception: fast medium long

IMPORTANT :

- **Suggestion:** Carry out the 1st monitoring **after the petal fall stage (BBCH 69)** and the 2nd one **1 month later**. At the petal fall stage, beneficials start being more visible in the foliage. It is therefore interesting to observe their evolution from this stage onwards
- Do not carry out this method if the **weather** conditions are rainy or windy. Take advantage of the insects' slowness in the **morning**, do the monitoring before noon
- **Beat** alternately the Southern and the Northern sides of the trees. Make sure that the strength used to beat branches is comparable from a tree to another, and that the branches have approximately the same size.
- **NB.** If there is no comparison between two treatments, fill out the entire notation sheet independently from the titles "A and B treatment".



Bring the booklet and the necessary equipment in the orchard during the monitoring.

Beating (2/3)

You can beat 33 trees per treatment if you are used to follow the IOBC guidelines. If not, it is possible to beat 10 trees per treatment. Write the number of beneficials that are present per tree.

Treatment A																																				
Tree n°	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Total		
Ladybirds																																				
Larvae																																				
																																				
Adults																																				
																																				
Green lacewings																																				
Larvae																																				
																																				
Syrphids (Larvae)																																				
																																				
Earwigs																																				
																																				
Predatory bugs																																				
																																				
Spiders																																				
																																				
Opilions																																				
																																				
Other																																				
Total number of beneficials in A treatment:																																				

Beating (3/3)

Treatment B																																			
Tree n°	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Total	
Ladybirds																																			
Larvae																																			
																																			
Adults																																			
																																			
Green lacewings																																			
Larvae																																			
																																			
Syrphids (Larvae)																																			
																																			
Earwigs																																			
																																			
Predatory bugs																																			
																																			
Spiders																																			
																																			
Opilions																																			
																																			
Other																																			
Total number of beneficials in B treatment:																																			

Total number of beneficials on all the trees:	15
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Predation cards – Codling moth (1/2)

You can fill this table for 1 or several monitoring in the same season.

As plant protection and irrigation have an impact on result, you can also indicate which practices you had before monitoring.

	1 st time	2d time	3d time	4 th time
Date of set up of the predation cards				
Dates of the monitoring				
Plant protection treatments applied 15 days before monitoring	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide
Irrigation 7 days before monitoring	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized

Time needed to make the monitoring:

< 30 min 30min to 1h 1h to 2h > 2h

Personal perception: fast medium long

IMPORTANT:

- ➔ **Suggestion:** Carry out the **1st monitoring** from the 1st laying period onwards and the 2nd one **1 month later**. This makes possible to observe the evolution of the predation and parasitism rate and to whether it coincides with the increase in codling moth in the orchard.
- ➔ Avoid setting up the cards when the **weather** conditions are humid.
- ➔ The cards should be placed in the orchard as soon as possible, so that the eggs are kept in a good state and are still attractive to predators.
- ➔ **NB.** If there is no comparison between two treatments, fill out the entire notation sheet independently from the titles "A and B treatment".
- ➔ **Information:** The eggs on the predation card are eggs of *Ephestia* which is a flour moth harmless for crops.



Bring the booklet, the necessary equipment and a stapler in the orchard during the monitoring.

Predation cards – Codling moth (2/2)

Predation activity

Monitoring **24h** after the set up of the cards.

Per card, about 10 frozen eggs have been counted. Counting the remaining eggs gives an idea of the presence or absence of a predation activity. One predator may eat several eggs, so that the number of predated eggs is not equivalent to the number of predators.

Treatment A :

Treatment B:

Card n°	All eggs are intact : no predation activity	<50% eggs predated : Partial predation activity	>50% eggs predated : high predation activity		Card n°	All eggs are intact : no predation activity	<50% eggs predated : Partial predation activity	>50% eggs predated : high predation activity
1					1			
2					2			
3					3			
4					4			
5					5			
6					6			
7					7			
8					8			
9					9			
10					10			
Total per class					Total per class			

Comments and remarks:

Predation cards – Rosy apple aphid (1/2)

You can fill this table for 1 or several monitoring in the same season.

As plant protection and irrigation have an impact on result, you can also indicate which practices you had before monitoring.

	1 st time	2d time	3d time	4 th time
Date of set up of the predation cards				
Dates of the monitoring				
Plant protection treatments applied 15 days before monitoring	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide
Irrigation 7 days before monitoring	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized

Time needed to make the monitoring:

< 30 min 30min to 1h 1h to 2h > 2h

Personal perception: fast medium long

IMPORTANT :

- ➔ **Suggestion:** It can be interesting to carry out the 1st monitoring shortly after flowering and the 2nd one 15 days later. It can be interesting if you ask yourself whether or not to make an anti-aphid treatment during petal fall stage, and if you want to monitor the presence of beneficials. However at this early stage of the season, it is more difficult to detect numerous beneficials in the aphid colonies, which does not mean that they are absent from the orchard. Another suggestion is to make the 1st monitoring at the **petal fall stage (BBCH 69)** and the 2nd one **15 days to 1 month later** in order to observe the evolution of the predation rate in conditions that are more favourable to beneficials.
- ➔ Avoid setting up the cards when the **weather** conditions are humid.
- ➔ The cards should be placed in the orchard as soon as possible, so that the aphids are kept in a good state and are still attractive to predators.
- ➔ **NB.** If there is no comparison between two treatments, fill out the entire notation sheet independently from the titles "A and B treatment".
- ➔ **Information :** The glued aphids may not be rosy apple aphids. It is not an issue because this method targets generalist predators.



Bring the booklet, the necessary equipment and a stapler in the orchard during the monitoring.

Predation cards – Rosy apple aphid (2/2)

Predation activity

Monitoring **24h** after the set up of the cards.

Per card, 10 intact aphids have been glued. Counting the remaining aphids gives an idea of the presence or absence of a predation activity. One predator may eat several aphids, so that the number of predated aphids is not equivalent to the number of predators.

Treatment A :

Treatment B:

Card n°	All aphids are intact : no predation activity	Between 1 and 5 predated aphids : Partial predation activity	More than 5 predated aphids : Full predation activity		Card n°	All aphids are intact : no predation activity	Between 1 and 5 predated aphids : Partial predation activity	More than 5 predated aphids : Full predation activity
1					1			
2					2			
3					3			
4					4			
5					5			
6					6			
7					7			
8					8			
9					9			
10					10			
Total per class					Total per class			

Comments and remarks:

Corrugated card board band traps (1/2)

You can fill this table for 1 or several monitoring in the same season.

As plant protection and irrigation have an impact on result, you can also indicate which practices you had before monitoring.

	1 st time	2d time	3d time	4 th time
Date of set up of the bands				
Dates of the monitoring				
Plant protection treatments applied 15 days before monitoring	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide	No Fungicide Insecticide herbicide
Irrigation 7 days before monitoring	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized	No Surface Sprinkler localized

Time needed to make the monitoring:

< 30 min 30min to 1h 1h to 2h > 2h

Personal perception: fast medium long

IMPORTANT :

- ➔ Suggestion: Monitoring sessions can be carried out as soon as earwigs are visible in the foliage (around mid-April). If you carry out 1st monitoring at the beginning of the abundance peak of earwigs (around end of May) and the 2nd one during the abundance peak (around mid-June), you can observe the increasing evolution of the earwig population in the orchard.
- ➔ If you roll the bands around the branches, avoid setting up the cards when the **weather** conditions are rainy and if a sprinkler **irrigation** system is working.
- ➔ For the bands that are **rolled around the branches**, the corrugated part has to be oriented against the trunk, and the smooth part has to look outwards. The bands should be wrapped around branches that are as horizontal as possible. Otherwise, the **bottle** which contains the cardboard band has to be scotched vertically against the upper part of the trunk.
- ➔ **NB.** If there is no comparison between two treatments, fill out the entire notation sheet independently from the titles "A and B treatment".





Bring the booklet and the necessary equipment in the orchard during the monitoring.



Corrugated card board band traps (2/2)

Grading grid

Monitoring **1 week** after set up of the bottles.

In the boxes, write the number of beneficials collected in each band. You can open completely the band, or alternatively shake it 5 times in a container, but remember to always do the same.

	A treatment									
Trap n°	1	2	3	4	5	6	7	8	9	10
Earwigs 										
Spiders 										
Other										
Total of beneficials in the A treatment:										

	B treatment									
Trap n°	1	2	3	4	5	6	7	8	9	10
Earwigs 										
Spiders 										
Other										
Total of beneficials in the B treatment:										

Total number of beneficials in all the traps :	
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Comments and remarks:

PLURIANNUAL FOLLOW-UP

If you're interested in following your biodiversity during several years, in order to see any improvement, you may be interested in using these grids to report your 2016, 2017... results !

VISUAL OBSERVATION

infestation rate	A treatment	B treatment
2016		
2017		
2018		
2019		

BEATING

	2016	2017	2018	2019		
Total number of beneficials in A treatment:						
Total number of beneficials in B treatment:						

PREDATION CARDS

Report the number of cards for each of the 3 classes:

classes	Treatment A :			Treatment B :		
	All eggs are intact : no predation activity	Between 1 and 5 predated eggs: Partial predation activity	More than 5 predated eggs: Full predation activity	All eggs are intact : no predation activity	Between 1 and 5 predated eggs: Partial predation activity	More than 5 predated eggs: Full predation activity
2016	/10	/10	/10	/10	/10	/10
2017	/10	/10	/10	/10	/10	/10
2018	/10	/10	/10	/10	/10	/10
2019	/10	/10	/10	/10	/10	/10

CARDBOARD BANDS

	2016	2017	2018	2019		
Total number of beneficials in A treatment:						
Total number of beneficials in B treatment:						