Tips for breeding your ladybirds successfully

1. What to do when you receive the ladybird larvae

- Open the envelope and take time to care for your ladybirds.
- Find a place where the breeding net will not be exposed to significant changes in temperature. Keep it between 15° C (59° F) and 21° C (69.8° F) in a place with sufficient natural light (ideally 12 hours of light a day).

➜ ***Please note that excessive heat and excessively dry conditions may kill the larvae. The breeding net should not be placed near a source of heat, in direct sunlight (i.e. on a windowsill) or under a lamp.***

- Gently empty all the contents of the box containing the young larvae over the bottom of the vivarium. If larvae try to escape from the box, use a clean, fine, soft brush so that you don't injure them, and place them back at the bottom of the vivarium.

- Feed your larvae in the vivarium immediately, following the feeding instructions provided with your larvae.
- If you have aphids on your plants, you can give them to your larvae regularly. All species of aphids are suitable for ladybirds, except aphids from elder trees.

➜ ***Remember to close the vivarium properly after each feed. Larvae are great at escaping.***

What to do during the breeding

Follow the feeding instructions carefully, otherwise the larvae may eat each other. Among ladybirds, cannibalism also occurs naturally in the wild. *The food supplied is sufficient to breed your larvae until the nymph stage.*

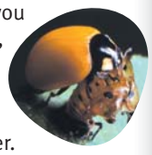
- Larvae go through different stages of development; each stage involves a shedding of their "shell". After each shedding, the old "skin", called excuviae, can be seen. After three sheddings, ladybird larvae will turn into nymphs.

➜ ***Nymphs are immobile : do not remove them from their support. This may injure or kill them. The nymphs do not feed.***

- After 6 to 8 days, the adults leave the nymphal shell; the elytra are yellow and very soft. At this stage, the ladybird is extremely fragile. After a few hours, the elytra will harden and change to a red and black colour, giving the ladybird its characteristic appearance.

2. What to do when the ladybirds have reached the adult stage

- You can release the ladybird adults outside from May to October by placing them on plants infested with aphids. Handle them using a fine, soft brush.
- You can keep the adults in the vivarium if you feed them with aphids. After a couple of days, ladybirds will mate. The first eggs can be laid after 5 to 10 days.



- From November, when outdoor conditions are not favourable, you can keep them in conditions similar to overwintering. To do this, for 2 weeks, keep the vivarium containing the adults at 10-15°C (50-59°F) with a piece of paper soaked in a sugary solution (honey diluted in water) and a few grains of pollen. Then, place them in the fridge at approx. 4°C with the paper. Re-soak the paper in the sugary solution regularly.

➜ ***In spring, you can release your ladybirds in the garden***

Please remember, however, that the mortality rate can be high when stored in the fridge. This mortality occurs naturally in the overwintering sites. Surviving ladybirds will produce the spring population.

3. How to start a new ladybird breeding process

- All you have to do is buy a refill in the shop which supplied you with the kit or go to www.adavalue.com/adaliabox.html.

➜ ***Keep the vivarium and the instruction guide in a safe place.***

The world of the Adalia bipunctata ladybird

Ladybirds have 6 legs and are, therefore, classified as **insects**. They belong to the order of **Coleoptera** and the family of **Coccinellidae**. Like all other Coleoptera, their front wings (elytra) are rather rigid and form a shell that protects the membranous wings which enable them to fly. In Europe, we have nearly 300 species, which vary in size from 1 to 10 mm and which are identified by the colours and patterns on the elytra. Within the same species, the patterns can be very different and make identification complicated, especially in the case of the **Adalia bipunctata** ladybird, which can be red with 2 black spots or black with red spots. And, contrary to what people believe, the number of spots does not correspond to the insect's age.

Before becoming the "Beetle of Our Lady", the ladybird goes through 4 stages :

1. the egg, which hatches after 5 days
2. the larva, which devours aphids and gets fatter for 10 to 15 days, shedding its skin 3 times
3. the immobile pupa**, which transforms in 6 to 8 days
4. the adult, which can lay eggs after 1 to 3 weeks (weather permitting)

Generally the eggs are laid in clutches, in the spring or early summer. They are most often elongated, oval and pale yellow to bright orange in colour. The quantity laid varies according to the species. For **Adalia bipunctata**, it varies from 20 to 50 eggs a day, over a two-week period. They can be found on leaves or stems of plants next to aphid-infested areas.

After hatching, the larvae eat their shells and neighbouring eggs that have not yet hatched. Then, they actively search for aphids. They do this by touch rather than sight, as the larvae are blind. When they shed their skin, they attach themselves and remain immobile for **several hours or up to one day**. Completely immobile within the hard, dry pupa, the future ladybird is transforming into a **chrysalis***.

After 6-8 days, it shakes itself and tears the shell: at first, the ladybird is completely yellow, without spots. It looks for a safe, open space to rest and allow its elytra to harden. After several hours, the spots and colour appear. **At this stage, in the wild, only 20% of young adults survive**.
Ladybirds find their way by means of their antennae, they seize their prey with their two pincers (**mandibles****). They can eat up to 50 aphids per day but eat most when they are at the larval stage : **up to 150 a day**.

From September-October, ladybirds seek their place for hibernation, which varies according to the species. The **Adalia bipunctata** like walls, window frames or crevices in tree bark, where they will "nest" with several dozen of their fellow creatures. During winter, the mortality rate is high. It depends on the harshness of the climate, how early spring comes, the availability of food and on parasites.

***Chrysalis :** Nymph. Form assumed by some insects at the end of their larval development.
****Mandible :** from the Latin mandere, to chew.
In man and vertebrates : Lower jaw bone, also called inferior maxillary bone.
In insects, crustaceans and myriapods (centipedes/millipedes) : Pair of mouth parts of insects, in particular, situated at the front of the jaws.