



Mesostigmata

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- Chelicerata
 - Acarina
 - Mesostigmata
 - Dermanyssidae
 - *Dermanyssus gallinae*
 - Macronyssidae
 - *Ornithonyssus*
 - Macrochelidae
 - *Macrocheles*
 - Varroidae
 - *Varroa destructor*
- Stigmata are located between 3. and 4. coxae

Dermanyssus gallinae **(The poultry red mite)**

- Hosts
 - Main hosts are poultry, pigeon and many birds.
- If they can not found their main hosts, they feed blood mammalians (even humans) and can cause allergy
- They are found in chicken house and bird cages
- *D. gallinae* is cosmopolite species and widespread in Turkey
- Temporary ectoparasites
- They attack the animals at night and suck blood

Dermanyssus gallinae

(The poultry red mite)

- Morphology
 - The body is oval and flat and have fine hairs
 - Whitish color when unfed
 - Red or black color when fed
 - Chelicers are in the form of scissors in males, and thin and tall in females
 - Palps are long and 5 joints
 - The anus is located in the back half of the anal plate.
 - Stigmas are located between 3. and 4. coxae
 - No eyes
 - Adult and nymph have 8 legs, larva has 6 legs

Dermanyssus gallinae (The poultry red mite)

● Life cycle

- Larvae do not feed
- Protonymph
- Deutonymph
- Adult
- The life cycle can be completed within 7 days.
- Adults can survive for up to 5 months without feeding

Dermanyssus gallinae

- The mites live in nestling materials, where they spend most of their time, moving into the birds to feed on blood at night.

- It hides by day in crevices and nestling materials, moving into the birds to feed at night.

- Pathogenesis/Clinic manifestations

- Skin lesions in chickens are usually inapparent, but may occur as erythematous papules on any part of the body.
- Chronic or heavy infestations can be debilitating and result in skin irritation, loss of vigor, stunted growth, reduced egg production, anemia, and death due to exsanguination.
- Also, they can transmit some spirochete agents of birds.

Dermanyssus gallinae

- Diagnosis
 - The diagnosis is made by observing mites on animals or in coops.
- Treatment
 - Treatment is long and difficult
 - Acaricides
 - Carbaryl
- Control
 - The plastering of the coops is useful for removing mites from the nestling areas
- Public health
 - Workers in poultry operations seldom experience a biting problem while working during the daytime, even when the houses are heavily infested.

Dermanyssus gallinae

Temporary parasites of poultry

- 1- Chelicer (needle-shaped)
- 2- Palps (5 joints)
- 3- Fissure
- 4- Plate
- 5- Coxae

has biting-sucking mouth parts

Active at night

Biology:

Egg→

Larvae →

Nymphs → (protonymph and deutonymph)

Adult→

Varroa destructor (bee mite)

- They are permanent ectoparasites of honey bees.
- Host features
 - The mites feed by sucking haemolymph on larvae, pupa and adults of honey bee.
 - Varroosis is widespread in all parts of Turkey and has a major importance in health of honey bee.

Varroa destructor (bee mite)

- Morphology
- The body is flat as dorso-ventral
- The body is round and disc shaped
- Head and legs can not be seen from dorsal view
- The body is covered with hairs
- It has biting and sucking mouth organelle
- Legs short and thick
- Stigma is located between 3. and 4. coxae
- The S-shaped “peritrem channel” extends from the stigma to the edge.
- Females 1.1 x 1.5 mm, light or dark brown
- Males are very small and light color

Varroa destructor

- Biology
 - Egg+larvae+2 nymphs (protonymph and deutonymph) +adults
- Development time;
 - In males 7 days
 - In females 8-10 days
- Males die shortly after mating and they remain in the cells
- Females live up to 3-4 months in summer and 5-8 months in winter.
- Varroa lives on bees in all developmental stages and feeds with haemolymph of bee

Varroa destructor

- Once the female varroa is mated, the sperm from the male is stored in the spermatecha and uses it throughout his life.
 - Mated adult female varroa spends the life on bee in winter (In the meantime, the bees are in a cluster of winter bucket).
- In the spring, the queen bee starts to lay in the cells. Subsequently, worker bees cover cells after 5-6 days
- Varroa goes into cells just before workers close cells, thus the workers can not intervene and varroa is fed comfortably from larvae and pupa.
- Varroa prefers especially male cells
 - Because they are bigger, developments time of males take longer and it is colder than the others. These conditions is suitable for varroa.

Varroa destructor

- Pathogenesis/ Clinical manifestations
 - They cause varroasis in honey bees.
 - Unrest in adult bees
 - The resistance against diseases is reduced due to loss of haemolymph
 - Therefore, deaths can be observed
 - Malformations and death are observed in bee larvae and pupa.
 - Small abdomen and deformed wings and legs
 - The honey bees infested with varroa can not swarm
 - The infestation can destroy the colony
- Transmission
 - The disease spreads through contact

Varroa destructor

- Diagnosis
 - The mites can be seen on honey bees and in cells
 - Dead or alive mites can be seen in the beehive
- Treatment
 - Chemical, physical, biological and genetic methods of struggle can be applied.
 - Can be used acaricides in the appropriate seasons.
 - Early spring and late autumn

Varroa destructor Premanent parasite of honey bee

Morphological features: Disc shaped, Head and legs can not be seen from dorsal view, dark yellow-brown color, there are a lot of hair on mite.

♀ transverse oval

♂ round

Feeding: has a biting and sucking mouth organelle and they feed haemolymph of bees.

Biology:

Egg→

Larvae →

Nymphs → (2 nymphs)

Adults→