

## CHAPTER 9.2.

# INFECTION OF HONEY BEES WITH *PAENIBACILLUS LARVAE* (AMERICAN FOULBROOD)

### Article 9.2.1.

#### General provisions

For the purposes of the *Terrestrial Code*, American foulbrood is a disease of the larval and pupal stages of honey bees (species of the genus *Apis*) caused by *Paenibacillus larvae* (*P. larvae*), which is widely distributed. *P. larvae* is a bacterium that can produce over one billion spores in each infected larva. The spores are very long-living and extremely resistant to heat and chemical agents, and only the spores are capable of inducing the disease.

Combs with American foulbrood infected pre-imago of honey bees show distinctive clinical signs which can allow the disease to be diagnosed in the field. However, subclinical *infections* are common and require *laboratory* diagnosis.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 9.2.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the American foulbrood status of the honey bee population of the *exporting country or zone*.

Standards for diagnostic tests are described in the *Terrestrial Manual*.

### Article 9.2.2.

#### Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any American foulbrood-related conditions, regardless of the American foulbrood status of the honey bee population of the *exporting country or zone*:

- 1) honey bee semen;
- 2) honey bee venom;
- 3) honey bee eggs.

### Article 9.2.3.

#### Determination of the American foulbrood status of a country or zone

The American foulbrood status of a country or *zone* can only be determined after considering the following criteria:

- 1) a *risk assessment* has been conducted, identifying all potential factors for American foulbrood occurrence and their historic perspective;
- 2) American foulbrood is notifiable in the whole country or *zone*, and all clinical signs suggestive of American foulbrood are subjected to field and *laboratory* investigations;
- 3) an ongoing awareness programme is in place to encourage reporting of all cases suggestive of American foulbrood;
- 4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.2.4.

**Country or zone free from American foulbrood**

1) Historically free status

A country or *zone* may be considered free from the disease after conducting a *risk assessment* as referred to in Article 9.2.3. but without formally applying a specific *surveillance* programme if the country or *zone* complies with Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above may be considered free from American foulbrood after conducting a *risk assessment* as referred to in Article 9.2.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of diseases of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone*;
- b) American foulbrood is notifiable in the whole country or *zone*, and any clinical cases suggestive of American foulbrood are subjected to field and *laboratory* investigations;
- c) for the five years following the last reported isolation of the American foulbrood agent, annual surveys supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, have been carried out on a representative sample of *apiaries* in the country or *zone* to provide a confidence level of at least 95% of detecting American foulbrood if at least 1% of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5% of the hives; such surveys may be targeted towards areas with the last reported isolation of the American foulbrood agent;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority* or other *Competent Authority*, with no positive results, is carried out on a representative sample of hives in the country or *zone* to indicate that there has been no new isolations; such surveys may be targeted towards areas with a higher likelihood of isolation;
- e) either there is no *wild* or self-sustaining *feral* population of species of the genus *Apis* in the country or *zone*, or there is an ongoing *surveillance* programme of the *wild* or self-sustaining *feral* population of species of the genus *Apis* which demonstrates no evidence of the presence of the disease in the country or *zone*;
- f) all equipment associated with previously infected *apiaries* has been sterilised or destroyed;
- g) the importation of the *commodities* listed in this chapter into the country or *zone* is carried out in accordance with the recommendations of this chapter.

Article 9.2.5.

**Recommendations for the importation of live queen, worker and drone honey bees with or without associated brood combs**

*Veterinary Authorities* of *importing countries* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the honey bees come from *apiaries* situated in a country or *zone* free from American foulbrood; or
- 2) the shipment comprises only honey bees without associated brood combs and:
  - a) the honey bees come from *apiaries* meeting the conditions prescribed in Article 4.15.5.; and
  - b) the *apiaries* where the honey bees come from are situated in the centre of an area with a radius of 3 kilometres where there has been no *outbreak* of American foulbrood during the past 30 days.

Article 9.2.6.

**Recommendations for the importation of larvae and pupae of honey bees**

*Veterinary Authorities* of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

- 1) come from *apiaries* situated in a country or *zone* free from American foulbrood; or
- 2) have been isolated from queens in a *quarantine station*, and all workers which accompanied the queen or a representative sample of larvae were examined for the presence of *P. larvae* by bacterial culture or PCR in accordance with the *Terrestrial Manual*.

Article 9.2.7.

**Recommendations for the importation of used apicultural equipment**

*Veterinary Authorities of importing countries* should require the presentation of an *international veterinary certificate* attesting that the equipment:

- 1) comes from *apiaries* situated in a country or *zone* free from American foulbrood; or
- 2) was sterilised under the supervision of the *Veterinary Authority* in accordance with one of the following procedures:
  - a) by irradiation with 10 kilogray (suitable for all the used equipment); or
  - b) by either immersion in 1% sodium hypochlorite for at least 30 minutes (suitable only for non-porous materials such as plastic and metal); or
  - c) by immersion for at least 10 minutes in molten paraffin wax heated to 160°C (suitable only for wooden equipment); or
  - d) by any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*.

Article 9.2.8.

**Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly for use in apiculture**

*Veterinary Authorities of importing countries* should require the presentation of an *international veterinary certificate* attesting that the *commodities*:

- 1) come from *apiaries* situated in a country or *zone* free from American foulbrood; or
- 2) have been processed to ensure the destruction of both bacillary and spore forms of *P. larvae* by irradiation with ten kilogray or any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*; or
- 3) have been found free from spore forms of *P. larvae* by a test method described in the relevant chapter of the *Terrestrial Manual*.

Article 9.2.9.

**Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly for human consumption**

*Veterinary Authorities of importing countries* free from American foulbrood should require the presentation of an *international veterinary certificate* attesting that the products:

- 1) come from *apiaries* situated in a country or *zone* free from American foulbrood; or
- 2) have been processed to ensure the destruction of both bacillary and spore forms of *P. larvae* by irradiation with ten kilogray or any procedure of equivalent efficacy recognised by the *Veterinary Authorities* of the *importing* and *exporting countries*; or
- 3) have been found free from spore forms of *P. larvae* by a test method described in the relevant chapter of the *Terrestrial Manual*.

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NB: FIRST ADOPTED IN 1982; MOST RECENT UPDATE ADOPTED IN 2013.

