

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*.

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

