

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*, which is widely distributed. *Paenibacillus 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 should be notifiable in the whole country or *zone* and all clinical signs suggestive of American foulbrood should be subjected to field and *laboratory* investigations;
- 3) an ongoing awareness programme should be 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 should have 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 the provisions of 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 conformity 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 4.14.5.; 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 conformity with one of the following procedures:
 - a) by irradiation with 10 kGy (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 Authority* 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 kGy or any procedure of equivalent efficacy recognised by the *Veterinary Authority* 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 kGy or any procedure of equivalent efficacy recognised by the *Veterinary Authority* 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*.

