

Annex 4: Seriousness criteria for beekeeping

Given the wide diversity of beekeepers in terms of bee stock and production, thresholds have been established to characterise the seriousness criteria for adverse reactions at the apiary level.

The adverse reactions presented in this annex may therefore be regarded as serious if observations reach the following thresholds in terms of symptomatic colonies/treated colonies within the same apiary:

Total number of colonies treated in the apiary	Number of colonies expressing the symptom(s) in the apiary
1-5	≥ 1 (100-25%)
6-10	≥ 2 (33-20%)
11-20	≥ 3 (27-15%)
21-40	≥ 4 (19-10%)
> 40	≥ 10%

List of serious events in the beekeeping sector

Mortality

	Criteria	Reference
Bees	Massive acute mortality of adult bees	> 3000 bees (1 litre of bees) suddenly found dead in the form of a carpet in front of or inside the hive
Colony	Colony mortality during the season	Colony regarded as dead if residual population < 500 bees
	Winter mortality	Colony found empty or with residual population < 500 bees at the end of winter

Impaired reproduction

	Criteria	Reference
Queen	Mortality or disappearance	Queen found dead, or not found and with absence of sustainable egg-laying (> 15d) during the season
	Prolonged pause in egg-laying	No eggs in the hive, observed on at least two visits at 15-day intervals
	Requeening or supersedure	The bees have changed the queen by themselves (without the population leaving): strong population but no queen and queen cells in development
	Drone colony	Exclusively male brood and workers replaced by drones
Brood	Mosaic (spotty) brood	Appearance of empty cells or cells containing dead larvae/pupae over more than 10% of the total surface area of the brood
	Abnormal evacuation of larvae and/or pupae	Dead larvae and/or pupae found inside or in front of the hive, in a quantity corresponding to more than 10% of the total surface area of the brood

Growth disorders

	Criteria	Reference
Population	Weakening/Die-off	Gradual decrease in population density, hive activity and honey production
	Depopulation/Collapse	Disappearance of a large proportion of adult bees with only a very limited population of bees remaining in the hive, despite there being brood, honey reserves and pollen supplies
Bees	Malformations of adult bees	Observation of malformed bees in the hive (deformed wings, shortened abdomen, etc.) in a proportion exceeding six malformed bees for a population of 10,000 individuals

Level of parasitic infestation

	Criteria	Reference
<p><i>Varroa</i> population at the start/end of winter</p>	<p>Detection of > 1 <i>Varroa</i>/300 worker bees</p>	<p>Monitoring of the infestation rate by counting <i>Varroa</i> on a sample of 300 worker bees after flushing with alcohol, detergent or icing sugar, or after gassing with CO₂</p>
	<p>Falls of > 0.5 <i>Varroa</i>/day</p>	<p>Monitoring of the infestation rate by counting natural falls of <i>Varroa</i> onto greased or glued sheets placed under a wire-mesh floor</p>
<p>Population of <i>Varroa</i> during the season</p>	<p>Detection of > 15 <i>Varroa</i>/300 worker bees</p>	<p>Monitoring of the infestation rate by counting <i>Varroa</i> on a sample of 300 worker bees after flushing with alcohol, detergent or icing sugar, or after gassing with CO₂</p>
	<p>Falls of > 8 <i>Varroa</i>/day</p>	<p>Monitoring of the infestation rate by counting natural falls of <i>Varroa</i> onto greased or glued sheets placed under a wire-mesh floor</p>
	<p>> 5% brood infestation of males in early spring</p>	<p><i>Varroa</i> count in cells or on larvae/pupae after uncapping 200 male brood cells</p>