COLOSS: Honey Bee Winter Colony Loss Survey

2021/2022

Dear Beekeeper,

Your contribution to this annual survey on colony losses would be much appreciated. The survey aims to identify the percentage colony losses being experienced by beekeepers at both a national and regional level and to identify the possible causes for these losses. To facilitate this type of an analysis, it is important that as many beekeepers as possible participate and **all** the questions in the survey are answered. At various points in the questionnaire, there are short statements marked as Information. These are highlighted in Red and aim to explain the logic of the questions that follow.

Please send completed questionnaires to:

John Breen, Bee Survey, University of Limerick, Limerick

ALL completed surveys **should be returned by 27 June 2022.**

From May 6st, the questionnaire may also be completed online using a link tinyurl.com/coloss22 which will be available on the webpages of FIBKA, NIHBS and IBA CLG. It is important that each beekeeper only completes the survey once.

Thank you

The Questionnaire

1 To describe the location of your main apiary or operation, please state
   a) the name of a city/town/village near to your apiary? _____
   b) and the postal code of the apiary (or a postal code nearby) _____

2 How many apiaries do you have? ☐

3 If you have more than one apiary, are all your apiaries within a distance of about 15 km of each other? If you have only **one** apiary, **please answer yes.**

O Yes O No O Don't know

Information: ***Please consider winter as the period between the moment that you finished the pre-winter preparations for your colonies and the start of the new foraging season. In this questionnaire we try to gather information about production colonies. A production colony is a colony which is queen right and is strong enough to produce honey.***

4 How many **production colonies** did you have **before winter 2021-2022** ☐

and

4a **How many additional colonies did you acquire during the winter period .** ☐

Information: ***In the next questions you are asked for numbers of colonies lost.***
Please consider a colony as lost if it:

- ***was still alive post winter, but had queen problems you couldn't solve*** *(drone laying queen or no queen at all)*
- ***died due to natural disaster***
- ***died out (or reduced to a few hundred bees) during winter***

Each colony LOST should be recorded to ONLY one of these three categories.

5 How many of these (4) colonies that you lost were alive but had unsolvable queen problems. If none, please answer 0.

6 How many of these (4) colonies that were lost were due to natural disaster (flooding, storm, fallen tree, cattle/sheep, vandalism, theft, rodents)?

7 How many of these (4) colonies died out during the winter period? (This should include colonies with dead bees and empty hives):

8 How many of the dead colonies (died out group) (7)

a) … had many dead bees in or in front of the hive?

b) … had no or only a few dead bees in or in front of the empty hive?

c) … had dead workers in cells and no food present in the hive (signs of starvation)?

d) … had dead workers in cells while food was present in the hive?

e) … had none of the above or unknown symptoms?

Note: Each individual dead colony should be categorized into only one of the Groups marked a) to e). The total number of dead colonies in Q7 should be equal to sum of colonies in Q8

9 How many of the wintered colonies (4) were weak but were queen right after winter 2021-2022?

Information: We would like to calculate increases and decreases in the number of colonies, so if you had colonies in spring 2021 and remember how many you had, please answer the following two questions, considering spring as the start of the foraging season:

10 How many production colonies did you have in a) spring 2021 (last year)?
b) spring 2022 (this year)?

Information: Conditions in the colonies, the environment around the apiary, and management:

11 How many of the wintered colonies had a new queen in 2021? Don't know

12 To what extent did you observe queen problems in your colonies during the foraging season of 2021 compared to other years?

O More O Normal O Less O Don't know

13 Did you migrate any of your colonies at least once for honey production or pollination in 2021?

O Yes O No O Don't know

14 Have you noticed bees with crippled/deformed wings in your colonies (during the summer season)? (These are signs of the presence of Deformed Wing Virus, which is spread by Varroa mites).

O Not at all O to a limited extent O to a large extent O Don't know

15 Did the majority of your bee colonies have a significant flow on one or more of the following sources in 2021?

a)	Orchards	O Yes	O No	O Don't know
b)	Oil seed rape	O Yes	O No	O Don't know
c)	Maize	O Yes	O No	O Don't know
d)	Sunflower	O Yes	O No	O Don't know
e)	Heather	O Yes	O No	O Don't know
f)	Autumn forage crops	O Yes	O No	O Don't know
g)	Honeydew	O Yes	O No	O Don't know
h)	Honeydew with melecitosis	O Yes	O No	O Don't know

16 Have you monitored your colonies for Varroa during the period April 2021 - March 2022?

O Yes O No O Don't know / not applicable

17 Have you treated your colonies against Varroa during the period April 2021 - March 2022?

O Yes O No O Don't know / not applicable

18 Could you please indicate the months when you monitored your production colonies for Varroa AND also indicate when you STARTED a *Varroa* treatment or management plan during the period April 2021 - March 2022? **Method / Product**	Month in which each measure started 2021 April	May	June	July	August	September	October	November	December	2022 January	February	March
Monitoring of Varroa infestation level (e.g. counting mite fall)												
Drone brood removal												
Hyperthermia (heat treatment of brood/bees)												
Other biotechnical method (as e.g. trapping comb, complete brood removal, queen confinement)												
Formic acid - short term												
Formic acid - long term (e.g. MAQS)												
Lactic acid												
Oxalic acid - trickling												
Oxalic acid - sublimation (evaporation)												
Oxalic acid mixtures (e.g. Hiveclean/Bienenwohl/Varromed)												
Thymol (e.g. Apiguard, ApilifeVar)												
Tau-fluvalinate (e.g. Apistan)												
Flumethrin (e.g. Bayvarol, Polyvar)												
Amitraz (in strips, e.g. Apivar, Apitraz;												
Amitraz (fumigation/aerosol)												
Coumaphos (e.g. Perizin)												
Coumaphos in strips(e.g. Checkmite+)												
Another chemical product												
Another method												

20 If you gave your colonies a supplemental sugar feed (sugar solution or inverted sugar) last year to prepare for winter, how many kg of sugar (dry matter) did you give on average per production colony?

21 Do you keep your bees in an area where many beekeepers are not treating for Varroa, yet their colonies appear to be surviving?

O Yes O No O Don't know

22 What particular measures apply for the majority of your beekeeping:

a) Screened (mesh) bottom board in Winter O Yes O No O Don't know
b) Insulated hives in Winter (incl. double walled hives) O Yes O No O Don't know
c) Hives made from synthetic materials O Yes O No O Don't know
d) Certified organic beekeeping O Yes O No O Don't know
e) Queens bred from Varroa tolerant/resistant stock O Yes O No O Don't know
f) Small brood cell size (5.1 mm or less) O Yes O No O Don't know
g) Natural comb (without foundation) O Yes O No O Don't know
h) Purchase wax from outside own operation O Yes O No O Don't know
i) Non-wax foundation in brood chamber O Yes O No O Don't know

23 Did you observe *Vespa velutina* (Asian hornet) foraging for honey bees in your apiary/apiaries? O Yes O No O Don't know

24 How much in Euros (€) do you estimate your costs to be per colony for Varroa treatment in the period April 2021 to March 2022

25 If you monitored your colonies for Varroa during 2021/2022, which method or methods did you use...(tick more than one method is necessary)

O Alcohol wash
O Sticky board (or other collection tray below the hive)
O Sugar shake / roll
O Visual inspection of adult bees
O Visual inspection of drone brood
O Sent sample to lab
O Other (enter explanation): _____

26 Please identify in which months… (choose any that apply)

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Not at all
… you add supers													
… you change queens													
… you split colonies													
… you merge colonies													
… you harvest honey													
… you often experience colony losses													
… you manage the highest number of colonies													
… you manage the lowest number of colonies													
… colonies swarm													
… colonies abscond													
… colonies rely on food stores only													

On behalf of the research team on the National Apiculture Programme, our sincere thanks for completing this annual survey on winter colony losses, the information provided, and the time taken to complete it. Please note that all data collected will be stored on an encrypted computer in University College Dublin and any personal details will be subject to the strict rules of GDPR in UCD.

April 2022