

Surveyor Notes: COLOSS Basic Questionnaire 2009-10

Introduction

The COLOSS Cost action program expresses the need to achieve “reliable and internationally standardized data on colony losses, which can be compared between countries and years” (Cost Action FA0803 Proposal 2008). At the Belfast meeting (September 2008) Workgroup 1 of the COLOSS network, Monitoring and Sampling, defined 3 levels of monitoring, (1) quantitative, (2) diagnostic and (3) specialist. For level 1 and 2 the development of questionnaires was given a start at the Belfast COLOSS conference. At the Zagreb conference (March 2009) a draft of the first COLOSS basic questionnaire was presented. As a result of discussions during the WG1 meeting an improved version was developed. This version was finalized in March 2009 and sent to the COLOSS network. At the Amsterdam workshop (April 2009) the results of the first surveys with the basic questionnaire were discussed. New elements were proposed for the next edition like, (1) the significance of ‘queen problems’, since these might be related to colony losses, (2) the significance of lost colonies with dead bodies in or before the hive/beeyard, (3) more distinction between pre winter losses and winter losses, (4) apiary characteristics and (5) basic information about migration.

Discussion at the second Amsterdam workshop (January 2010) learned that a seasonal approach of losses was a complex issue, if the questionnaire was to be used in different climatic zones. And even more so, when hives are (partly) migrated between climatic zones for honey production like in the USA. A seasonal approach has the advantage that in a non foraging (‘winter’) period, bee management is on a low intensity level and colony losses are easily observed. Holding on to a strict seasonal approach would result in well observed comparable ‘winter’ losses and incomparable season lengths.

As an alternative approach it was suggested to choose for a fixed timeframe of 6 months, which would include, but not be limited to the period of colony ‘winter rest’ and determine how many colonies would be present at the start and end of this period. Losses would be calculated as the difference between the two moments in time. Colony management in areas where foraging takes place within the chosen timeframe could however blur the outcome by making splits, increases or adding new colonies, with the effect that mortality would remain unobserved. Holding on to a strict timeframe approach would result in comparable timeframes, but might introduce ‘colony management’ bias. Adding questions on these bee management effects would reduce bee management bias.

Discussions in the second Amsterdam Workshop ended with the decision to use a timeframe approach, with October 1 2009 – April 1 2010 as the observational period. Surveyors will have the freedom to start a month earlier or ending one month later only if required by local conditions.

Essential and Optional questions.

During the development of the COLOSS questionnaire, objectives and questions have been suggested by COLOSS members. The provided questions were evaluated along the following lines to achieve validity. Beekeepers who respond to the questionnaire have to: (1) understand the question as intended, so they know what is being asked of them; (2) be able to retrieve the information needed to form an answer; (3) be able to fit what they have to say into the form; (4) be willing to provide what they deem to be the most literally accurate answer they can. (*Floyd Fowler, Jr. & Carol Cosenza, International Handbook of Survey Methodology 2007 De Leeuw, D., Hox, J., Dillman, Don (2007) : 158*).

The resulting question set was subdivided in essential and optional questions. The 7 essential questions (1) identify minimal information about the beekeeper, but will not identify the beekeeper him/herself, (2) measure the difference in the number of colonies at start and end of a certain timeframe and (3) provide qualitative answers on how the beekeeper views the causes of colony losses.

Next to that surveyors are encouraged to use a set of 18 optional questions or at least some of these. Optional

questions were admitted to the set if they were, to our best knowledge, expected to be used in a considerable number of national surveys.

Remain constructs and questions which can be very important but were not meeting standards or were not seen as an item of general interest for now. Please use and evaluate them in your own surveys and make them part of the discussions for the next edition which will start summer 2010.

Definitions and wording.

The COLOSS questionnaire is designed for general survey research to compare honeybee colony losses and possibly related factors between multiple regions and countries. More time and effort are needed in the near future to meet the requirements for good standardization, which is in effect a complex issue.

For now we use the same questions for all populations with the following minor differences as an exception.

1. The questionnaire is directed to colonies which may productive. The term productive colony is defined as a colony which could be used for honey production or pollination service. The word productive may be replaced by 'viable' in the relevant questions
2. In Essential Question 1 the term "Province" can be exchanged with "State", "Department", "County" or other area indications of a lower scale than Country.
3. In Optional Question 5 "Postal Code" can be exchanged with "Zip (Code)".
4. Essential and Optional Questions referring to October 1 or April 1 can be changed to September 1 or May1.
5. In Essential Question 7 "how many" can be exchanged with "what percentage".
6. In question O8 a list of bee races is represented. The surveyor is free to add items which are not in the list, and remove items which are not present in the target population.
7. In question O15 a list of possible causes for colony losses is represented. The surveyor is free to add items which are not in the list, and remove items which are not considered of interest for the target population or not list any factors at all.

Sample Size and Survey Mode.

At the COLOSS conference in Belfast it was decided that for a survey to be truly representative a sample size of 5% of the beekeepers and colonies should be a minimum. It became clear at several workshops that followed that some national surveys struggle in obtaining these minimum requirements. Representativity may be restricted by local or national opportunities and available funding.

The presented question set can easily be used for a mixed-mode approach on data collection. Coverage bias may be reduced by employing a mix of modes like beekeeper journals, meetings, email and internet.