

Developing questions to the Bee monitoring questionnaire.

A preliminary questionnaire was presented at the Amsterdam meeting in 2009. All participants were asked to comment and add questions to the preliminary bee monitoring questionnaire. Going over this evaluation a new preliminary questionnaire was produced by the internet interview system www.trictrac.com. The comments from the Amsterdam participants can be seen below (more than 20 answers). The answers were short presented at the Montpellier meeting 2009.

Flemming Vejsnæs

Bee monitoring (level 1) 2 and 3 vers. 4.

General questionnaire to beekeepers.

This questionnaire will give us a "general real time" picture of the beekeeping situation in a given area. This questionnaire should be used every year to reveal "what is going on". If this general questionnaire reveals problems (colony losses, beekeeper recognize general disease problems) – it is recommended to go further on with questionnaires on apiary level and colony level (questionnaire level 3 and 4).

The levels 1, 2 and 3 are very much connected to each other and therefore I have included the level 1 in this questionnaire (But it is Romées part – and changes may have happened).

Regard this questionnaire as a proposal, and an attempt to standardize relevant beekeeper questions. After our meeting in Amsterdam – I realize that we have to keep the questions short, easy and relevant. We should try to make the questions "black" and "white". Not giving the beekeepers many alternative choices to their fantasy.

At the Amsterdam evaluation of this questionnaire, everybody had focus on putting additional questions (which I have done) into the level 2 and 3 questionnaire, more than removing irrelevant questions.

We should now focus on removing irrelevant questions. Only questions that give us useful information should be used. Questions of no use on the long term should be excluded (e.g. it is nice to know the age of the beekeeper – but is it relevant for the dying of colonies?). Also questions that can be misunderstood do not give common sense.

The questions below should be regarded as a gross questionnaire. Regard this questionnaire as a "wall of many bricks". You can take some specific "bricks" that fits into your special circumstance in your country. And in that way build your own questionnaire. But we have to stress that the level 1 questions should be included in all questionnaires as a standard. Calculating bee losses in all countries.

Take also out the irrelevant "bricks". In Denmark we will remove the "brick" asking about bear disturbances!!!! It is absolutely irrelevant for a Danish questionnaire and will only make the questionnaire very bad accessible for the beekeeper. Or asking for the use of a Spanish varroacide not known or used in Denmark, is also irrelevant for Denmark. In the different countries very different varroa-treatments are applied. You should only list the relevant once for your country.

If you make additional questions – we should collect them on the Coloss homepage.

What is important is that you keep the given numbering of the questions. So that we can exchange results easy. We have to refer to question e.g. 1.2 and so on. Each question and answer does have unique numbering. Note: This is not done in this paper, because it will first have relevance when we have consensus on the questions.

Below I have listed the different comments from Amsterdam with italic types. I have given my answer afterwards in most cases.

Additional questions from the Amsterdam evaluation has been added.

Sorry to everybody if I have forgotten exactly your comment or idea – please do not give up and forward it to me again.

Please use 30 min. on this paper – give your judgement/comment/additional questions/voting.

Regards Flemming

TricTrac Web Browser

Basic beekeeper information

	1. Not relevant	2.	Relevant	4.	5. Very relevant
Last name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Comment)There is no need for personal identification??? Answer: Yes – if we have the e-mail. But zip code is very important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
First name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Address	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
City	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
State	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Zip/postal code	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Comment) The Zip code represent where the beekeeper is living. For this questionnaire we expect that the apiaries are placed nearby the beekeeper. The level 3 and 4 questionnaires are on the apiary and colony level.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Comment)Zip code only for where beekeeper are living ? The bees are somewhere else – Offer several zip codes. Answer: See comment above. This questionnaire is on beekeeper level – getting an impression on the general mode of the beekeeping.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Comment) Turkey, have lots of regions which have the same post code, but have different climate and so on. Answer: See above answer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E-mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
(Comment) e-mail is enough. Answer: See answer above. Each country should choose for themselves. Without address you are not able to make further investigation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identification no	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment: Code issued by veterinary service in Germany. Norway will use member no. Answer: Good idea. But not normal for all countries. Feel free to use this question in your country. It is of no use in regard to EU, but until the day where all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Question relevance - Basic beekeeper inf.	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Last name	38%	15%	31%	0%	15%	2,38
First name	43%	14%	29%	0%	14%	2,29
Address	43%	29%	7%	0%	21%	2,29
City	27%	7%	27%	0%	40%	3,20
State	31%	8%	15%	0%	46%	3,23
Country	13%	0%	13%	0%	73%	4,20
Zip/postal code	8%	8%	8%	0%	77%	4,31
E-mail	14%	7%	36%	0%	43%	3,50
Identification no	43%	7%	21%	14%	14%	2,50

Comments:

* About the zip code for localization, I think it should be asked for the apiary (or at least the name of the village where it/they is/are). In Spain people usual are living in Madrid or other big city and keeping colonies 200Km apart. Spain is also usual that women are the "legal" owners of the colonies but they are managed by the husbands.

* Most of Polish beekeepers do not have E-mails. Not all our Polish beekeepers have identity no

* In Italy beekeepers receive an identification number from the veterinary services. A national registry of beekeepers is in progress.

* In Germany it is not possible to get personal information's. Nearly all beekeepers will give you only anonymous data.

Question relevance - Basic beekeeper inf.	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Gender (Female/male)	67%	13%	13%	0%	7%	1,67
Age	36%	18%	9%	18%	18%	2,64
I have been beekeeper for years	13%	7%	47%	27%	7%	3,07

Question relevance - losses	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
How many production colonies did you have in _____ ?	20%	0%	0%	13%	67%	4,07
How many colonies were lost late summer _____, or shortly after the wintering.	20%	0%	13%	7%	60%	3,87
What is the total number of production colonies wintered last year ?	0%	7%	7%	0%	87%	4,67
What is the total number of production colonies lost during last winter ?	0%	0%	13%	0%	87%	4,73
What is the total number of production colonies too weak in the spring this year to develop to a production colony ?	0%	7%	13%	0%	80%	4,53
Added question: How many apiaries do you have ?	13%	0%	40%	13%	33%	3,53

* Mht spørgsmålet om døde bifamilier sensommer eller kort efter indvintring: Jeg synes man skal tage udgangspunkt i antal indvintrede bifamilier, og derfor bør spørgsmål 2 måske heller hedde: Hvor mange bifamilier mistede du kort tid efter indvintring. Mht antal bigårde, så mener jeg det er irrelevant medmindre man spørger til tab i hver enkelt bigård

* How many colonies were lost late summer 2008, or shortly after the wintering?- The questions for this questionnaire should be separated.

* Last question: how many hives do you have and how many are you (father+son, 4 seasonal workers, only 1 person...) to manage them?

* Production colonies for me is a confusing concept. This season in Ireland, our colonies produced little or no honey, perhaps "Potential productive colonies may be better!! "How many apiaries" is possibly a redundant question

Question relevance - Beekeeping practice	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Do you practice comb replacement every year (replacing brood comb). Combs pr. Colony: None, 1-2 combs ? 3-4 combs 5 or more combs ? Shook swarm ? Bailey comb change.	7%	0%	57%	7%	29%	3,50
Migratory beekeeping (yes/no)	13%	0%	13%	27%	47%	3,93
If yes. For pollination (yes/no)	7%	13%	33%	20%	27%	3,47
If yes. For honey production (yes/no)	7%	14%	36%	14%	29%	3,43
If yes. How many moves in total pr. year	7%	0%	40%	33%	20%	3,60
If yes. How many approximately km in total pr. year	7%	7%	50%	21%	14%	3,29
Winterfeed (yes/no)	0%	0%	15%	15%	69%	4,54
If yes – how many kg pr. colony	8%	15%	31%	8%	38%	3,54
If yes – When do you do your main feeding: January – February – March – April – May – June – July – August – September – October – November – December	0%	0%	54%	15%	31%	3,77
If yes – what type of winterfeed ? Dry sugar - Sugar syrup - Liquid sucrose (what brand ?)..... - Corn syrup - Candy/Fondant (what brand ?)..... - Pollen/patty feed product - Feed supplement (please indicate e.g. Vita feed)..... - Honey.	0%	7%	27%	27%	40%	4,00

- * In Italy 1-2 combs per year are usually replaced. Information on the nature of the feed used is very important.
- * Another question: last residence of the lost hives in migratory beekeeping
- * Distance and number of moves are important questions should be included. Feeding question also important and perhaps the approx sugar syrup percentage concentration should be included. For example winter feed ~60%. Spring feed ~50%
- * Regarding 29: Added question: If yes ? When do you do your main feeding ? January ? February ? March ? April ? May ? June ? July ? August ? September ? October ? November ? * *
December maybe multiple answers should be allowed here. That would enlighten the question if date of first (beginning) feeding (like Ch. Otten showed in Amsterdam) or date of last feeding has an impact. Broodscheider and Crailsheim did ask for the latter and never found an effect.

Question relevance - Apiarie	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Apiary basic information * Address * City * State * Zip/postal code * GPS coordinates	29%	7%	29%	14%	21%	2,93
Surrounding/landscape: * Lowland * Wally * Slope * Mountain area (altitude...) * Farmland* Forest *Urban area*	27%	20%	27%	7%	20%	2,73
Microclimate * Sun * Light shadow * Shade *	40%	7%	33%	13%	7%	2,40
Average honey harvest pr. colony the year before. ? (kg/colony)	13%	13%	53%	7%	13%	2,93
Average honey harvest compared to the last seasons * Poor harvest * Lesser harvest * Average harvest * Better harvest* Very good harvest	7%	27%	40%	13%	13%	3,00
Food supplies. Nectar flow during the season in general. * Estimate nectar flow supply from _ (poor) to _ (plenty) during the season.	0%	13%	67%	0%	20%	3,27
Food supplies. Pollen supply during spring: * Estimate pollen flow supply from _ (poor) to _ (plenty) in the springtime.	20%	7%	53%	7%	13%	2,87
Food supplies. Pollen supply during fall: * Estimate pollen flow supply from _ (poor) to _ (plenty) in the fall.	13%	13%	40%	20%	13%	3,07
Pollen quality (mixed pollen is better then monopollen)Estimation of the quality of pollen from _ (monopollen) to _ (mixed pollen).	15%	31%	38%	0%	15%	2,69

Question relevance - Colonie	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Queen information: Please indicate how often you replace queens on average in your colonies. * Never* Every year* Every second year* Every third year * Every Year	0%	7%	33%	0%	60%	4,13
Please indicate the origin of your queens below. * Acquired from a national queen breeder (commercial)* Own reared (non commercial) * Reared by the colony (natural replacement in the colony).* Acquired from a queen breeder (commercial)....	7%	20%	40%	27%	7%	3,07
Type of bee Apis mellifera: * Apis mellifera carnica * Apis mellifera ligustica * Apis mellifera mellifera * Apis mellifera ibeniensis * * * Buckfast bees* Unknown	27%	13%	40%	0%	20%	2,73

Question relevance - Colonie development	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Strength of the colonies : Average strength of the colonies (compared to the last years) * Very weak * Weaker * Average* Stronger * Very strong	0%	0%	53%	20%	27%	3,73
Population development (spring) (compared to the last _ years) * Very slow or no development * Weaker development * Average * Good development * Very good development	0%	7%	67%	7%	20%	3,40
Population development (early summer) (compared to the last _ years) * Very slow or no development * Weaker development * Average * Good development * Very good development	7%	13%	53%	7%	20%	3,20
Swarming Average swarming tendency (compared to the last _ years) * Very low or no swarm tendency * Low swarm tendency * Average swarm tendency * Higher swarm tendency * _ . Very high swarm tendency	0%	0%	67%	13%	20%	3,53

Relevant questions, but I do agree that they should be left out as they are complex.

Beekeepers with more than one apiary will have to fill in one questionnaire for each apiary. In Norway beekeepers often have several small apiaries even though the number of hives is small. I think it will be difficult to get them to fill out several lengthy questionnaires for each apiary. I think those questions on apiary level should be left out and included in level 3-4. I agree that it should be sufficient to ask for pollen supply during the season. Do the beekeepers remember the pollen supply one year after it took place, when they are to answer the questionnaire? I think it is important that the questions should be presented to the beekeepers as soon as possible so they might make their notes during the season and make their answers as correct as possible. We have asked the question about what kind of bees they have in Norway. It showed that many beekeepers have several different races, so if this question is included the number of colonies belonging to each race should be given.

The questions of these sections are relevant and interesting, but it is very difficult to get a "correct" answer by beekeepers. Only few of them are able to provide real data, in most cases data are just an estimate.

One questionnaire per one apiary (not per one beekeeper)
food supplies - important but difficult to assess by beekeeper in a reliable way
population development - very important but when combined with meteorological data (rains and temperatures)

Questions of address/site/landscape of apiary I would exclude as it makes the questionnaire cumbersome and the data collected would not be comparable
pollen questions are relevant, but not sure if many beekeepers examine colonies in relation to the types of pollen being foraged
may not need two questions in relation to colony development Spring/early Summer, in Ireland this period is almost the period
Regarding 43: although it will be difficult to get this, it is of big interest to know which bees are used in apiculture in different regions. different races perform differently regarding colony losses, compare Giray et al., PRELIMINARY SURVEY RESULTS ON 2006–2007 COLONY LOSSES IN TURKEY, 2007
Add the possibility to choose " ...I do not know/no experience"

Difficult for the beekeeper to give their name, number of colonies and production, so we should tell them that those data will not go to the administration for taxes!!

Question relevance Pest - varroa	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
Do you have varroamites in your colonies ? (yes/no)	29%	7%	0%	7%	57%	3,57
Do you treat for varroa ? (Yes/no).	7%	7%	0%	7%	80%	4,47
If yes, how many treatments do you do pr. year. * 1 *2 * 3 * 4 * 5 * 6 * 7 * 8 * more	7%	7%	0%	13%	73%	4,40
If yes, please mark the type of treatment. * Apistan If yes – when do you treat? January – February – March – April – May – June – July – August – September – October – November – December	0%	7%	7%	14%	71%	4,50
* While applying the above products did you follow the manufactures instructions (advised methods and doses ?) (yes/no)	13%	7%	33%	7%	40%	3,53
List other treatment types (e.g. handmade chemicals).....	20%	7%	20%	20%	33%	3,40
Added question: Do you make biotechnical varroa-treatment (management)? * Total brood removal * Drone brood removal * Artificial swarm * Nucleus production (brood combs)* List other methods.....	0%	7%	7%	20%	67%	4,47
Do you monitor the levels of varroa in your colonies ? (yes/no) If yes, please mark monitoring method. * Count mite drop on floor insert (natural mite downfall) If yes – with or without sticky materiel. * Uncapping fork (drone brood) *****	0%	7%	33%	20%	40%	3,93

Do you have varroamites in your colonies ? Comment: How can we interpretate the answer "no" - can we believe in this? If yes, how many treatments do you do pr. year. Comment: We can omit the previous question and we can change this question to "How many antivarroa treatments do you do per year?" and, to the possible answers to this question we can add: While applying the above products did you follow the manufactures instructions (advised methods and doses?). Comment: It would be good to know the real situation, however most of beekeepers believe that they follow even if the.....

All the authorized veterinary drugs are listed as well as those "tolerated" such as organic acids.

About treatments against varroa - describe period, doses, way of application...

The question: "Do you have varroa mites in your colonies?" May be not relevant, as the mite infested about every apiaries in Europe! I am not sure that the beekeepers will be willing to declare that they are using not registrated methods to control varroa mite! The beekeepers count their mites, we should ask them data??

Question relevance - CCD.	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
How many of the colonies that were lost during winter, disappeared with none or only a few living bees remaining, while enough food supply was present ?? Number..... In how many hives of the disappeared colonies did you observe patches of cap. Number.....	7%	0%	7%	14%	71%	4,43
Have you seen these symptoms? * Empty hive * The bees are dead on the floor of the hive. * Plenty of food. * Dysentery in the hive. * Presence of brood * Damaged brood (yes/no)	7%	0%	14%	14%	64%	4,29
If yes * Same observations at neighbouring beekeepers? Yes / No / Unknown	14%	7%	14%	21%	43%	3,71
Are there any other apiaries nearby (3 km) (Reinvasion) Yes / No / Unknown	14%	7%	21%	21%	36%	3,57

Again very difficult for beekeepers to know the answers of some of the questions.

Important data are obtainable from 2 neighboring apiaries managed in different way and from different apiaries managed by the same beekeeper in one way. thus it would be important to stress this point.

Add question: In this apiary did you never see the CCD before?

I would exclude the last two additional questions. Each beekeeper should be encouraged to answer their own questionnaire

Question relevance - Pest/diseases method one	1. Not relevant (1)	2. (2)	Relevant (3)	4. (4)	5. Very relevant (5)	Mean
In your opinion, on the general – is the level of these diseases in your apiaries on a higher or lower level compared to the last _ years. Acarine * do not know * not seen * low level* average * higher than normal on a.....	21%	7%	14%	21%	36%	3,43
Visible examination (signs) for different pest/diseases (Question method two) * Are there many dead bees in front of the hive ? (yes/no) * Are there bees with outstretched tongues and disjointed wings ? (yes/no)* Does the.....	7%	7%	20%	7%	60%	4,07
Confirmed pest/diseases (Question method three) Have you positively got confirmed by yourself or other skilled beekeepers any of the below pest/diseases. Pest * Wax moth If yes – do you regard this as a major problem for the survival of your colonies..	36%	7%	7%	7%	43%	3,14
Outside disturbance * Mice* Bears * Ants* Woodpecker* Badgers * Bee eaters * Asian Hornet * Vandalism * *	40%	20%	27%	7%	7%	2,20

I would prefer this question rather than the question method 1, since here we could also ask where the disease was identified (veterinary, official services...)

We can leave out the question on confirmed diseases as long as we include the previous one with symptoms

I agree on list the visible signs without dividing it into specific diseases.

Prefer method 2

Difficult to answer for most of our beekeepers in Germany.