Workshop : Coloss questionnaire, from question formulation to data analysis

February 21st – February 22nd, 2011

Avignon, France

organized by Coloss Work Group 1

(Julien Vallon /ITSAP, Cynthia McDonnell and Yves Le Conte /INRA)

<u>Theme :</u> Presentation and open discussion around questionnaire formulation and data analysis on the basis of previous studies using the Coloss questionnaire.

<u>Speakers :</u>

Sylvie Masselin-Silvin, Breeding Institute, France
Carlos Lopez, Breeding Institute, France
Claude Saegerman, Liege University, Belgium

PROGRAMME

Sunday February 20

Start	
Arrival and informal social gathering in the evening	
20.00	Dinner at Ginette & Marcel, 27 Place des Corps Saints

Monday February 21

Sart	End	Topic	Speaker	Abstract
08.30	09.00	Registration		
09.00	09.15	Welcome and overview	Y. Le Conte	
09.15	09.35	Explanation on the 4 tiers and their specific objectives	K. Nguyen	
09.35	10.15	Presentation of 2009-2010 results	R. van der Zee	
10.15	10.30	Coffee break		
10.30	11.30	Critical approach of realized tier 1 data analysis. Discussion with participants	S. Masselin Silvin and C. Saegerman	
11.30	12.30	Discussion		
12.30	14.00	Lunch		
14.00	15.00	Methodological aspects of the questionnaire: advantages, inconveniences and alternatives, proposal of new approaches Discussion with participants	C. Saegerman	
15.00	16.00	Coloss Member talks 1		X
16.00	16.15	Coffee break		
16.15	17.45	Finalization of level 1		
17.45	18.45	Coloss Member talks 2		X
20.00	-	Social dinner		

Tuesday February 22

Start	End	Topic	Speaker	Abstract
09.00	09.20	Formulation of Tier 2 and Possibilities of analysis	K. Nguyen	
09.20	10.00	Questionnaire Tier 2: how to treat data and the determination of risk factors	S. Masselin	
10.00	10.15	Coffee break		
10.15	11.15	Coloss Member Talks 3		X
11.15	12.30	Tier 2: questionnaire formulation and validation of the questions	S. Masselin Silvin and C. Saegerman	
12.30	14.00	Lunch		
14.00	15.00	Tier 2 questionnaire formulation and validation of the questions	S. Masselin Silvin and C. Saegerman	
15.00	16.00	Coloss Member Talks 4		X
16.00	16.20	Coffee break		
16.20	17.00	Closure of the workshop and discussion of future organizations	R. van der Zee	

Oral presentations :

Abstract O-1:

Evolution of professional beekeepers colonies losses from 2008 to 2010 in France and determination of risk factors

ALLIER Fabrice

ITSAP-Institut de l'abeille, 149, rue de Bercy 75 595 PARIS cedex 12

The technical and scientific institute for beekeeping and pollination: "ITSAP – Institut de l'abeille" runs a survey on winter colony losses from 2008. Based on local development associations of professional beekeepers, we focus on losses and specific conditions (history, beekeeping practices, environment and state of colonies for wintering, developed through about twenty factors) in each bee yard of the operation.

Our results show variations in colony losses around years: 26.8% [23%-30%]$_{CI\ 5\%}$ for 2010 ; 23.4% [21%-25%]$_{CI\ 5\%}$ for 2009 ; 29.3% [26%-32%]$_{CI\ 5\%}$ for 2008.

In a second part, the profiles that segregate better the wintering bee yards of our study are:

"good available resources, high amount of provisions before feeding, no or few feedings and strong bee population" against "low available resources, low amount of provisions before feeding, high amounts of feedings and weak bee population". Both profiles are linked respectively with low and high colony losses.

Others profiles, including anothers factors of the questionnaire, were also identified and linked with colony losses.

In a third part we identify risk factors from about twenty variables. In 2008 they were: available resources, state of colonies population, last harvest level, amount of provisions, Varroa fight strategy, and colonies suppression or gathering. In 2009, risk factors were: state of colonies population, Varroa fight strategy, bee yards moves or not, and wintering environment. Some details of these results will be presented during the workshop in Avignon.

According to these results we decided to simplify the questionnaire, in order to increase, also, beekeepers answerback.

Abstract O-2:

Winter colony losses in Ireland during 2009/2010

Mary F Coffey[1,], John Breen[2]*

[1]University of Limerick, Dept of Life Sciences, Ireland
[2]University of Limerick, Dept of Life Sciences, Ireland

In 2007, CCD (Colony Collapse Disorder) became a well-publicized phenomenon, which not alone increased public awareness of the importance of bees, but also highlighted the consequences of a declining bee population. In the past few years in Ireland, there has been a renewed interest in beekeeping and presently there are approximately 2100 beekeepers managing 22000 colonies. As no data on colony losses were available in Ireland, in winter 2009/2010 we initiated the first monitoring programme using the COLOSS Basic Questionnaire. To stimulate interest in the questionnaire, and ensure active beekeeper participation, we established close collaborations with the Federation of Irish Beekeepers' Associations (FIBKA). Oral presentations and publications in the FIBKA journal (An Beachaire) were also utilized to achieve this goal. The questionnaire was primarily disseminated at beekeeping meetings, although email, the FIBKA webpage and the FIBKA journal were also used. 450 beekeepers (22.5%) responded to the questionnaire and the survey was based on 4820 (24.4%) colonies. The survey clearly indicated that beekeeping in Ireland is strictly practiced as a hobby: 50% of the respondents manage <5 colonies, 25% manage 5-10 colonies, 20% manage 10-40 colonies and 5 % manage >40 colonies. The estimated winter losses during 2009/2010 were about 22% and a considerable number of the mortalities showed symptoms of CCD (29%). The possible cause of losses, as perceived by the beekeepers, are listed, in decreasing order of importance, as poor queens, nosemosis, do not know, weak colonies, starvation, varroa and tracheal mite. The poor mating of queens during the summer and early Autumn was primarily attributed to the poor weather experienced during most of the 2009 foraging season. However, we believe that possible pyrethroid resistance and consequently the insufficient control of the varroa during 2009/2010 may also a contributing factor.

Abstract O-3:

Wintering report from Hungarian apiaries 2009/2010

*Csáki Tamás[2], *Szalainé Mátray Enikő[1], Békési László[1]*

[1]Institute for Small Animal Research & Co-ordination Centre For Gene Conservation, Institute for Bee-breeding, , 2101 Gödöllő, Isaszegi u.
[2]Szent István University, Institute for Wildlife Conservation, 2101 Gödöllő, Páter K. u. 1

Hungary owns two thirds of Europe's acacia forests and has the greatest annual acacia – monofloral - honey production with 10-13 thousand tons. Argentina, the organizer of the Apimondia 2011 congress, is thirty times bigger than Hungary, yet produces only three times more honey. Hungary covers only 0.9 % of the territory of Europe but accounts for 10% of the continent's total annual honey production. In Europe the bee density is seven times higher than in other parts of the world and our country has the highest bee colony density in Europe.
According to Hungarian Beekeepers Federation (OMME) at the end of 2009 the number of registered honeybee colonies was almost 960,000. In the spring of 2010 the estimated winter loss reached 190,000 colonies, which was cca 20 % of the total number. Further more we estimated another 190,000 colonies that weakened during wintering enabling them to use canola nectar flow. The total value of lost rape honey was 7,980,000 Euros (10 kg honey loss /colony/2,1 Euro/kg).
Because of the lost 190,000 colony the loss in acacia honey could reach 10,640,000 Euros (20 kg honey/colony/2,8 Euros/kg). Bee colonies that weakened during winter generally become recovered till end of May and did produce acacia honey.
Hungarian beekeepers also take efforts to revert colony losses with splits and use end summer nectar flows in success, first of all sunflowers blooming. This crop generally can compensate lost rape honey. No estimation is available in Hungary on losses in agricultural crops caused by lack of bees as the major pollinator.
The main causes of winter losses are thought to be unsatisfactory efficacy of *Varroa* medications, unauthorized product used in mite control and unrecognized-untreated *Nosema ceranae* infestations might also play significant role in colony decline.
In this paper we try to compare the estimated numbers of colony losses given by the Federation with the exact features gained from commercial migrating apiaries and our experimental apiary of our bee research institute (KATKI, Gödöllő) in the years of 2009-2010.

Abstract O-4:

Survey aim to obtain relevant data for differentiation cases of honeybee colony mortalities

Aleš Gregorc

Agricultural Institute of Slovenia, Hacquetova 17, 1001 Ljubljana , SLOVENIA

According to beekeepers' observations, recent winter losses of managed honey bee colonies in the country totaled approximately 30 percent. Beekeepers identified improper varroa control, prolonged drought summer periods and subsequently starvation, poor weather, and weak colonies going into winter as the main reasons for mortality in their operations. In the continental and Alpine climatic conditions during winter period bees are unable to fly for several months and only strong, healthy colonies normally survive. Census conducted twice a year by the Sector for Registration and Identification of animals (SIR) has not shown any significant variations in the managed honeybee colonies population in recent years. Beekeepers together with Beekeeping Advising and Veterinary Service accompanied by research institutions aim at maintaining about 170.000 managed honeybee colonies. They also aim at reducing the decline of colonies during yearly periods as a result of winter losses by regularly re-establishing them. Our survey comprising information of autumn and early spring colony status and their general management practice (varroa control, feeding) will allow us to differentiate between verifiable cases of colony mortalities.

Abstract O-5:

Causes of colony losses in South Africa

Dr Hannelie Human, Dr Christian Pirk

University of Pretoria

In South Africa two subspecies of the honeybees occur, *A. m. capensis* in the rather wetter coastal Cape region *A. m. scutellata* in the rather dry and hot conditions inland. Since 2009 we have conducted a nationwide annual questionnaire among the South African beekeepers. We included questions of Level 1 & 2 as discussed in the WG 1. Some questions, especially the ones referring to specific sections, had to be adjusted to take into account being located in the southern hemisphere. In addition, our climatic conditions allows for year round beekeeping therefore questions related to "winter" had to be rephrased to firstly obtain answers at all and secondly to receive answers, which are comparable with the questionnaires of the other members of the WG 1.

Although, all the major pest and pathogens are present in South Africa, including AFB and Varroa, it seems that for the wetter and costal regions area the environmental conditions (bad weather, pollen & nectar shortage) are an important cause of colony loss. However, in the *A. m. scutellata* area the social parasite, the capensis clone, is playing a major role in colony losses. A general factor, which affects the number of colonies lost, is whether the beekeeper is migrating with his bees or not.

South African beekeepers are very reluctant to share information resulting in a very low response on our questionnaires. In addition they appear to be mostly relying on their staff to inspect and observe their bees and these people may not be as educated as is needed.

Abstract O-6:

Health of honey bees in Turkey: 2009-2010 COLOSS Survey

Kence, A[1]*., Aslan, O. C*[1]*., Kayım, M*[1]*., Doke, M.A*[1]*.,Tozkar, Ö*[1]*.,Kukrer, M*[1]*., Yucel, B*[2]*., Dogaroglu, M*[3]*., Muz, M*[4]*., Giray, T*[5]*., Kence, M*[1]

1 Dept of Biology, Middle East Technical University, 06531 Ankara, Turkey
2 Zootechni Dept Faculty of Agriculture, Ege University, Izmir, Turkey
3 Emeritus professor, Trakya University, Faculty of Agriculture, Tekirdag, Turkey
4 Parasitology, Veterinary Faculty, Mustafa Kemal University, Antakya, Turkey
5 Dept of Biology, Puerto Rico University, San Juan, PR 00936-8377

Turkey has the second largest population of commercial bee hives in the world. Between 2009-2010, there were no unusual colony losses. In 2009-10, we have conducted a survey study on a subsample of beekeepers from around Turkey (314 questionnaries) representing ca. 45.000 colonies**)**. The analysis indicated an overall colony loss of only about 5% **(5)**. In contrast, in 2006-2007 30% overall and in 2007-2008 winter regional high losses were observed. According to the Beekeeper Registration System of the Ministry of Agriculture and Turkish Beekeepers Association, by the beginning of 2009 there were 33.770 beekeepers and 3.300.000 colonies were registered. We evaluate 2009-2010 losses as "normal winter loss". There were five geographic areas with about 15 % losses, and these were the extremes of the geography: Artvin (NorthEast), Hatay (SouthEast); Thrace (NorthWest), Mugla (West). Interestingly the main queen breeding area, Ankara also had about 15% loss. All other areas reported increase in colony numbers through April 2010 in comparison to October 2009. We also examined average honey yield for colonies in these operations, and found that areas with reduced yield (below 15 kg/colony) coincided with reduction in colony numbers. Both in low yield and high yield areas the Anatolica and hybrids obtained higher yield than other races. As for factors influencing bee health, *Varroa* was the most common problem, although operations that identified this problem did not have different honey yield or mortality than others. Many isolated problems were reported: *Nosema*, pesticides, starvation, old queens, weak colonies, etc. Lastly, CDS was reported by about 5 % of the operations that also reported 50% or higher colony losses.

Abstract O-7:

Environmental support to honey bees: Does this make difference on foraging behaviour, survival, and colony success

Meral Kence

Department of Biology, Middle East Technical University, 06531 Ankara, Türkiye

Reasons for the recent losses of honey bees in Europe and US are being investigated. One of the reasons was put forward as a lack of rich and diverse pollen and nectar resources especially in and around agricultural lands which leads to monoculture. Monoculture does not provide variety and long-duration of flowering times for honey bees to forage. One of the approaches was to form and maintain “bee pastures” or “honey forests” consisting cultivation of various native or non-native plant species rich in pollen and nectar to support honey bee populations.
These practices may have adverse effects on biodiversity as a whole despite benefits to honey bees.
Here I would like to propose inclusion of questions to record whether or not the colonies are supported as such, to the COLOSS Questionnaire. This should provide important information to find out the well being of colonies, if that is the case, due to environmental support in the form of the cultivation of “bee pastures”. Further the differences between supported and non-supported beekeeping could be detected and evaluated.

Abstract O-8:

Survey on losses in Sweden

Preben Kristiansen

Swedish Beekeepers Association, Trumpetarev 5, SE-59019 Mantorp, Sweden.

Each year since 1920 beekeepers have sent in reports about their beekeeping to the Swedish Beekeepers Association. The reports include information about e.g. the number of hives, the honey yield and the losses. The losses vary from year to year between 6 and 22 %, and the average for the whole period is 12,5 %.

In 2009 and 2010 we carried out web based surveys on winter losses. The questionnaire we used 2010 was based on the one made by WG1. The losses 2008/2009 were 17,5 % of the 7354 colonies that were wintered 2008. The losses 2009/2010 were 24,7 % of the 13598 colonies that were wintered 2009. All data has been submitted to the chair of WG1 for a joint publication about losses.

The losses are higher in the areas of Sweden where Varroa is present compared to areas without Varroa. Inadequate Varroa control appears to be one of the main reasons for colony losses in Sweden. But even other factors play a role.

Even the survey in 2011 will be based on the common COLOSS questionnaire and conducted via internet. To evaluate the reliability of the data obtained from that survey we are even going to conduct a survey via letter to a number of randomly chosen beekeepers.

Abstract O-9:

Honey bee situation in Belgium

Bach Kim Nguyen, Claude Saegerman, Eric Haubruge*

Functional and Evolutionary Entomology – Gembloux Agro Bio-Tech – Liège University

The problematic of honey bee mortality in Belgium is multifactorial. The mean honey bee mortality causes have been identified (*Varroa destructor*, viruses, quality and quantity of food before and during the winter) and Belgian scientists are waiting for the end of the winter to measure the honey bee colony mortality rate. In the same time they could evaluate the solution proposed by the Belgian government and estimate the impact of the advices formulate the previous year to the beekeepers. To measure the honey bee colony mortality, the standardized questionnaire level 1 which is used by the participating countries in the COLOSS project was completed. For the season 2010-2011, the monitoring level 1 and level 2 will be conducted.

Abstract O-10:

Evaluation of colony losses in Israel 2008-2010

Victoria Soroker[1], Nor Chejanovsky[1], Joseph Kamer[1], Ilya Zeidman[1], Aksana Kelogin[1], Saadia Rene[1], Hadassah Rivkin[1], Shlomit Levski[1], Amotz Hezron[2], Boris Yakobson[3], ; Hillary Voet[4] Yossi Slabezki and Haim Efrat[5]

[1]Institute of Plant Protection, [2]Institute of Agricultural Engineering, Agricultural Research Organization; The Volcani Center; Bet Dagan [3]Veterinary Institute, [4]Faculty of Agricultural, Food and Environmental Quality Sciences, Rehovot; [5]Department of beekeeping, the Extension service, The Israeli Ministry of Agriculture.

Since 2008 we implement two approaches to evaluate the local levels of the colony losses in order to characterize the potential causal factors that include:

1- a survey, among beekeepers and,
2- regular monitoring of specific hives during the year.

Detailed questionnaires were distributed among the beekeepers in 2008; in 2009 and in 2010. In 2010 two questionnaires were handed, one dedicated to evaluation of winter losses by using a level 1 questionnaire developed by COLOSS working group 1, and a detailed questionnaire to evaluate annual losses. The questionnaire for evaluation annual losses in 2010 was based on level 1 and 2 questions suggested during the COLOSS meeting in Ankara. In addition, hive monitoring was conducted in 2009 and 2010 and included about 110 hives each. In 2010, emphasize was on the impact of varroa infestation on outbreak of diseases and colony collapse.

Our survey data in 2010, represented 36% of the colonies but only 10% of the beekeepers and indicated that overall colony losses were below 20%. The exact numbers are not possible to assess. It is already clear that some questions need to be improved and others added. However, the trends are pretty evident. The survey data analysis is still in process. So far, it appears that the high levels of losses (above 40%) occur among small beekeepers (with operation size below 100 hives) and are not associated with migration or pollination services.

Hive-monitoring for the presence of varroa and pathogens in 2010 indicated that increase in varroa levels was accompanied by higher virus incidence, in particular Deformed wing virus and *Varroa destructor* virus, followed by brood and adult disease and subsequently by collapse of the hives. These findings support the important role of varroa in disease outbreak. Another important factor observed was infection with Nosema that developed towards autumn. Research on colony losses, dynamics and causes is ongoing.

Abstract O-11:

A survey of honey bee colony losses during the winter of 2010-2010 in Poland: outcomes and problems

Grazyna Topolska, Anna Gajda*

WULS, Faculty of Weterynary Medicine, Department of Pathology and Veterinary Diagnostics, Ciszewskiego8, 02-786 Warsaw, Poland

All in all, 420 beekeepers took part in the survey, however 5 questionnaires were rejected because the number of lost colonies exceeded the number of owned colonies. Of the remaining questionnaires 311 concerned small apiaries with 1 to 50 colonies and 104 - larger apiaries. The total loss of colonies was 17.7% and was higher than during the three previous years. However, amount is probably overestimated as it looks as if 30 beekeepers did not understand the questions concerning splits and bought colonies. In those provinces where the representativeness of beekeepers was at least 0.5% and colonies at least 1% the highest total loss was about 20% (3 of 8 provinces). Both the total and the average losses were higher in small apiaries than in bigger ones. 92% of beekeepers considered acceptable losses to be 10% but 44% of beekeepers experienced higher losses.Varroosis, poor queens and weak condition in the fall were the leading self-identified causes in smaller apiaries. Owners of bigger apiaries more often blame nosemosis than poor queens. 8% of dead colonies were lost without dead bees in the hive nor in the beeyard.

The survey covered 0.9% of beekeepers and 1.5% of colonies in Poland. However, the official number of bee colonies in Poland used for the calculation is probably higher than the real number. During the conferences the unwillingness of beekeepers to fill in the not anonymous questionnaire was very evident. In northern and south-eastern Poland two other, different surveys were carried out and this probably had a very negative influence on the response of beekeepers to our survey in these regions.

On the basis of the experience gained from last year's survey we prepared the suggestions for the Basic Questionnaire 2011.

Abstract O-12:

Analysis of Varroa treatment data derived from the Dutch questionnaires 2009 and 2010

Romée van der Zee

Nederlands Centrum Bijenonderzoek, Durk Dijkstrastraat 10, 9014 CC Tersoal, The Netherlands

Coloss questionnaire response data from The Netherlands was analysed to determine a relationship between *Varroa* treatment in 2008 and 2009 and winter mortality 2009-2010.
The available data was strongly reduced by the correction for the use of toxic invert sugar syrup in fall 2009. From the initial 2010 response (1568 beekeepers with 14757 colonies in October 2009) the data of 295 beekeepers were suitable to employ a treatment time model based on differences in treatment month in both 2008 and 2009.

As in earlier analysis a large variation in *Varroa* treatment time was found. The results of the time model indicate an association between consistent *Varroa* treatments in August , not later than September and low winter mortality. Consistent treatments started in September and continued in October or during August, September and October were associated with high winter mortality.

Abstract O-13:

Inspection card may help bee keepers to analyze the dead bee colony and may help to produce better data for colony loss research

Ruottinen, Lauri, Kauko, Lassi

Finnish Beekeepers´ Association, MTT / P-talo, FIN-31600 Jokioinen

There are numerous of techniques and a long tradition to make notes from living bee hives to help to plan the management and breeding of honey bees. For breeding purposes different kind of evaluation criteria and database concepts has been developed even on international level. When the bee hive dies, the management of the unit is over. There seems no need to collect systematically any information from the dead individual beehive for management or breeding purposes. Also losing a bee hive is a stress for bee keeper and the normal reaction is to get over it as comfortable as possible whit out any extra notes.

Anyway one of the key factors to analyze reasons for losses is to produce comparable, reliable and unanalyzed data as soon as possible from dead bee hives. Attaching this data to the bee sample for possible varraoa, nosema, virus and AFB analysis could permit more reliable and uniform information for analyzing the reasons for the colony death.

The aim for using the loss record card is to minimize the subjective error while bee keepers are analyzing the dead bee colonies. The card is needed to get all moderate available information immediately after the loss has been detected. Finally the loss records will be combined to the bee sample analysis results. Afterwards this data forms the basic information to test the hypothesis of bee losses. The content of versions of the loss record card will be presented and kindly asked to be commented.

PARTICIPANTS

BRODSCHNEIDER Robert Mag. Karl-Franzens-University Graz, Department of Zoology, Universitätsplatz 2, A-8010 Graz, Austria Robert.brodschneider@uni-graz.at Tel: 0043316380-5602 Fax: 0043316/380-9875	CHARRIERE Jean-Daniel MSc Swiss Bee Research Centre, Agroscope ALP, Schwarzenburgstrasse 161, 3003 Bern, Switzerland Jean-daniel.charriere@alp.admin.ch Tel: +41 31 323 82 02 Fax: +41 31 323 82 27
COFFEY Mary Frances Doctor University of Limerick, Plassey, imerick, Ireland Mary.Frances.Coffey@ul.ie Tel: 00353864033676	CSAKI Tamás MSc, PhD student Szent István University, Institute for Wildlife Conservation, Páter Károly utca 1, 2103; Gödöllő, Hungary csaki.tamas@gmail.com Tel: 00 36 30 497 8029 Fax: 00 36 28 420 189
DAINAT Benjamin Swiss Bee Research Center – ALP, Schwarzenburgstr. 161, 3003 Bern, Switzerland Benjamin.dainat@alp.admin.ch Tel: +41 31 323 82 01 Fax: +41 31 323 26 02	GREGORC Aleš Doctor Agricultural Institute of Slovenia, Hacquetova 17, 1000 LJUBLJANA, SLOVENIA ales.gregorc@kis.si Tel : +386 1 / 280-51-50 Fax: +386 1 / 280-52-55
HOLZMANN Céline ITSAP – Institut de l'abeille, 149 rue de Bercy, 75012 paris, France celine.holzmann@itsap.asso.fr Tel : 0603895155	HUMAN Hannelie Doctor University of Pretoria, Department of Zoology and Entomology, Private bag X20 Hatfield0028, Hatfield, Pretoria, Republic of South Africa hhuman@zoology.up.ac.za Tel: +27 12 420 2548 Fax: +27 12 362 5242

KENCE Aykut Professor. Doctor Dept. of Biology, Middle East Technical Univ, İnönü Bulvarı, 06800 Ankara, Turkey aykut@metu.edu.tr Tel: 03122105176 Fax: 03122106478	KENCE Meral Doctor Middle East Technical University, Eskisehir Road, 06531 Ankara, Turkey mkence@metu.edu.tr Tel: +90 312 2105169 Fax: +90 312 2107976
KRETZSCHMAR André Doctor INRA-BioSP, Domaine St Paul, 84914 AVIGNON, France andre.kretzschmar@avignon.inra.fr Tel : 0033(0)432722175 Fax : 0033(0)432722182	KRISTIANSEN Preben Swedish Beekeepers Association, Trumpetarev. 5, 59019, Mantorp, Sweden preben.kristiansen.sbr@biodlarna.org Tel: +46 735 233 122
LE CONTE Yves Doctor INRA, Avignon, France leconte@avignon.inra.fr	LOPEZ Carlos Institut de l'Elevage**,** Service Biométrie**,** MNE, 149, rue de Bercy**,** 75595 Paris Cedex 12, France carlos.lopez@inst-elevage.asso.fr **Tel :** +33 1.40.04.52.69
MASSELIN SILVIN Sylvie Institut de l'élevage, MNE, 149 rue de Bercy, 75595 PARIS cedex 12, France sylvie.masselin-silvin@acta-informatique.fr Tel : +33 1 40 04 50 33	McDONELL Cynthia Post doctoral researcher INRA Avignon, UMR 406 Abeilles et Environnement, 84914 Avignon, France cynthia.mcdonnell@avignon.inra.fr Tel : (33) (0)4 32 72 26 19 Fax : (33) (0)4 32 72 26 02

MUTINELLI Franco Doctor Istituto Zooprofilattico Sperimentale delle Venezie, Viale dell'Università, 10, 35020 Legnaro (PD), Italy fmutinelli@izsvenezie.it Tel : + 39 049 8084287/261 Fax : + 39 049 8084258	NGUYEN Bach Kim Ir. Functional and evolutionary Entomology – Ulg, 2 Passage des déportés, 5030 Gembloux, Belgium bk.nguyen@ulg.ac.be Tel: +32(0)81622280 Fax: +32(0)81622312
PISA Lennard MSc Netherlands Centre for Bee Research (NCB), Burgemeester van Tuyllkade 50, 3553 AJ Utrecht, Netherlands lwpisa@hotmail.com Tel: 0031647330775	RUOTTINEN Lauri researcher, training manager Finnish Beekeepers´ Association, Agrifod Research Finland, MTT / P-talo, 31600 Jokioinen, Finland lauri.ruottinen@hunaja.net Tel: +358 40 547 3652
SAEGERMAN Claude 20, Boulevard de Colonster, Bât. B42 , Faculty of Veterinary Medicine , University of Liège, B-4000 Liège (Sart-Tilman), Belgium claude.saegerman@ulg.ac.be Tel : +32 4 366 45 79	SOROKER Victoria Doctor Agricultural Research Organisation, The Volcani Center, Hamakabim 68, 50250, Brt Dagan, Israel sorokerv@agri.gov.il Tel: 972-3-9683832 Fax: 972-3-9683906
TOPOLSKA Grazyna Doctor Warsaw University of Life Sciences, Ciszewskiego 8, 02-786 Warsaw, Poland grazyna_topolska@sggw.pl Tel: 48225936140 Fax: 48225936116	VALLON Julien Ingenior ITSAP – Institut de l'abeille, UMR 406 Abeilles et Environnement, 84914 Avignon, France julien.vallon@itsap.asso.fr Tel: 04 32 72 26 03 Fax: 04 32 72 26 02

VAN DER ZEE Romée Netherlands Centre for Bee Research, Durk Dijkstrastr. 10, 9014 cc Netherlands, Netherlands romee.van.der.zee@beemonitoring.org Tel: +(31)515521107	VEJSNAES Flemming Adviser Danish Beekeepers Association, fulbyvej 15, 41800, DENMARK fv@biavl.dk Tel: 0045 56 86 54 70