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Veterinarians and Bee Health involvement taking France as an example

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DIE Beekeeping – Honey Bee Pathology

GTV Beekeeping commission

www.apivet.eu

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Summary

History

Honey bee pathology education and teaching in French Vet Schools

The honey bee health organization and the place of veterinarians in France

Vets, honey bee and VMPs



History

- Beginning of the XXth: honey bee health
- After WW2: herd breeding and health management
- In the fifties: sports and leisure medicine and surgery, while urban life increase

... and veterinarians didn't take (or very rarely) into account honey bee health as a part of their job





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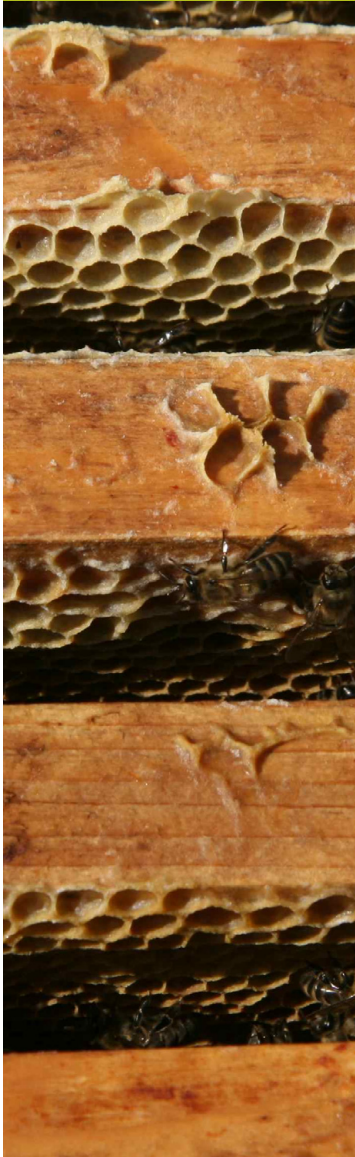


Sanitary crisis of the beekeeping chain:

Vets: will to be active and efficient in this animal production.

**Awareness of environmental problems:
Honey bee sentinel**

Pioneers: Pr. Monique L'Hostis (Vet School Nantes), Jean-Marie Barbançon, DVM and Beekeeper, and Marc Edouard Colin, DVM and searcher





Why vets?

1. Vets are domestic animals' **pathologists**:

- Honey bees are domestic animals,
- Face to the colony disorders and collapses, beekeeping lacks pathologists,
- Health disorders need:
 - Diagnostical approach following a
 - Clinical evaluation,
 - Advices in prophylaxis programs
 - and VMPs prescription if necessary.

2. Vets are in charge of the **veterinarian public heath**

The training to graduate vets in bee pathology exists in France.





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Honey Bee pathology education and training in France

- Before 2000: A few hours dispensed to veterinary students
- Now: no more taught (low impact on the veterinary economy?)
- **2005: « Diploma Beekeeping, honey bee pathology of Veterinary schools of Nantes and Alfort »**
- 2010: the GTV is about to begin training for practitioners



Diploma « Beekeeping, bee pathology »

- Created by Pr. Monique L'Hostis and Pr René Chermette with the support of beekeeping chain, unions and the financial support of FEAGA.
- A lot of specialists (searchers, beekeepers, veterinarians,...) and members of the beekeeping chain are in charge of the courses. (Theoretical courses : 120 hours (3 weeks) and Practical courses : one week (40 h))



A diploma, what for?

Practitioner

- Management of regulated diseases
- Management of other diseases
- Valuations, **on the field**
- Therapeutics trials
- ...

Administration

- Management of regulated diseases
- ...

Research and diagnosis Laboratory...

- Set up: **diagnosis tools**, validation, realisation
- Valuations, **Therapeutics trials**
- Scientific studies...



DIE « beekeeping, beekeeping pathology »



Module I, one week: honeybee, colony, management of apiary

Module II, one week: beekeeping pathology

Module III, one week: Practical course with a professional beekeeper: audit of animal husbandry

Module IV, one week : Regulation, health management

- Writing of the audit report
 - Presentation of the report, individual and group reports
- SYNTHESIS OF THE COURSE**

**THE AUDIT OF ANIMAL HUSBANDRY IS THE
BASIS OF HEALTH MANAGEMENT**



Objectives of the diploma

Acquire theoretical bases and practice on honey bee:
morphology, biology, live of the colony...,

Acquire practical bases to manipulate colonies of honey bee for aims of diagnosis, samples and experimentations,

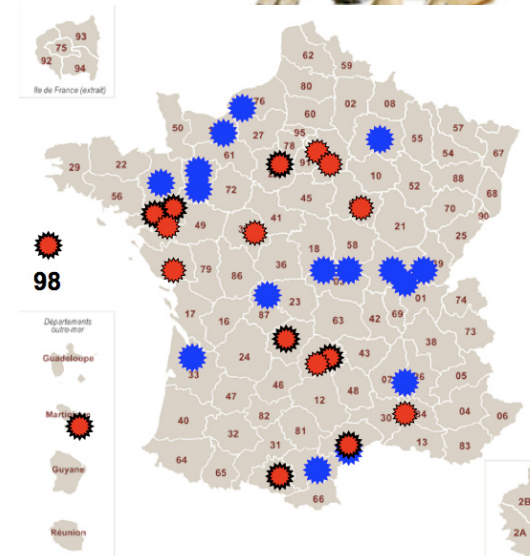
Acquire knowledge in beekeeping pathology and management of various affections





The vets graduated

	05-07	07-08	09-10	Total
Veterinarian advice GDS	1	1		2
Practitioners	1	7	11	19
Diagnosis	2			2
Administration (ISPV)		1	2	3
Teatcher, research, Pharmaceutic industry	3	1	2	6
Various			5	5
Total	7	10	20	37



37 vets which are graduated, or on the way to be – 32 pre registered for the next session, without taking in account vets who trained by their own.

What is (or will be) the place of practionners in the bee heath organization?



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The beekeeping health organization in France

Ministry of agriculture

DGAL (direction générale de l'alimentation)

DGPV (direction générale de protection des végétaux)

Agency and laboratories

AFSSA: research, assessment, diagnostic, analysis laboratory

Private and public laboratories

... and the OIE

Regional and « departemental » state sections

- Veterinary section: DRSV, DDSV
- Regional section of plant's protection

→ **ASA (beekeeping sanitary assistant): officialy in charge of the sanitary policy of honey bee health: often beekeepers.**



The beekeeping health organization in France

- Sanitary organizations: **FNOSAD**
- Beekeeping commission of the GTV created 2009
- **GDSA**: Beekeeping Sanitary Protection Group:
 - In charge of beekeeping sanitary management
 - in VMPs delivery within the framework of a Breeding Sanitary Program (PSE)
 - Practitioner as vet advice take place here:
 - prescription the VMPs of the PSE,
 - Definition and implementation of sanitary policy

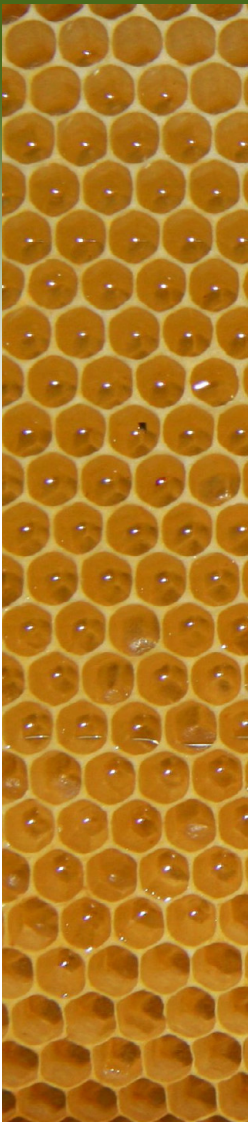


Place of the veterinarian

Honey bee pathology: becoming a « **specialist affair** » and the ASA guild show now its limits.

In this animal production chain: lack that doesn't exist in the other animals productions health organization: **veterinarians with sanitary mandate.**

Specialized sanitary vets can and will be an opportunity for beekeepers





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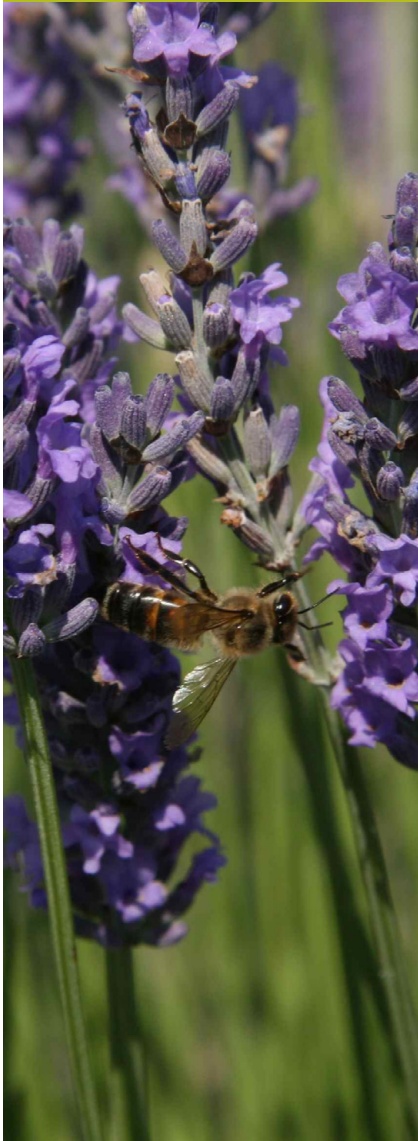


A specialized beekeeping sanitary mandate (warrant) for vets

**Creation of a vet beekeeping specialized sanitary
mandate :** Equal repartition of specialists in France.

Practitioners, as **pathologists**, will have:

- a place in the beekeeping health organisation,
- a part in clinical (certified) report, and official valuation.
- a contribution in an expected organized epidemical monitoring network.
- and of course a major part in VMPs prescription and advices and use,





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Veterinarians, VMPs and Honey Bees

Availability of VMPs seems to be a real problem in the fight against *Varroa destructor* as well as in diseases due to pathogen organisms (*Nosema sp.* and bacterial diseases)



VMPs and *Varroa destructor*

- Aim of the treatment: have the less residual mites as possible.
- Beekeepers observations and some studies: lower percentage mite reduction than expected : (Works of Faucon in 1995, Martin in 2004, Vallon in 2006 and 2007)
- **Consequences:**
 - 1. a lack of efficiency of VMPs?
 - 2. appearance of *Varroa*?
 - 3. lack of VMPs against *Varroa*?





VMPs in France

VMPs available:

- Apivar: Amitraze (a prescription is to be delivered for Apivar)
- Apistan: Tau-fluvalinate
- Thymovar: Thymol
- Apilifevar: Thymol, Eucalyptol, Menthol and Camphre

How can we approach the lacks noticed?



Lacks of VMPs against Vd?

Define the problem:

Some beekeepers:

- high level of residual Varroa, despite the application of a treatment, whatever it is.
- These are not always the same beekeepers, the same places, and the same weather conditions.

Consequences: weak colonies, opportunist diseases, troubles for pollination and honey production.

These facts lead to formulate points and questions



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Questions and points about VMPs and Vd

- At the level of the beekeeper:

What is the beekeeping practice for his hives?

Good practice rules?

Does the beekeeper follow the prescription and the way of use of VMPs?

When does he start the treatment?

Does the beekeeper adapt the treatment to local conditions and to hives production?





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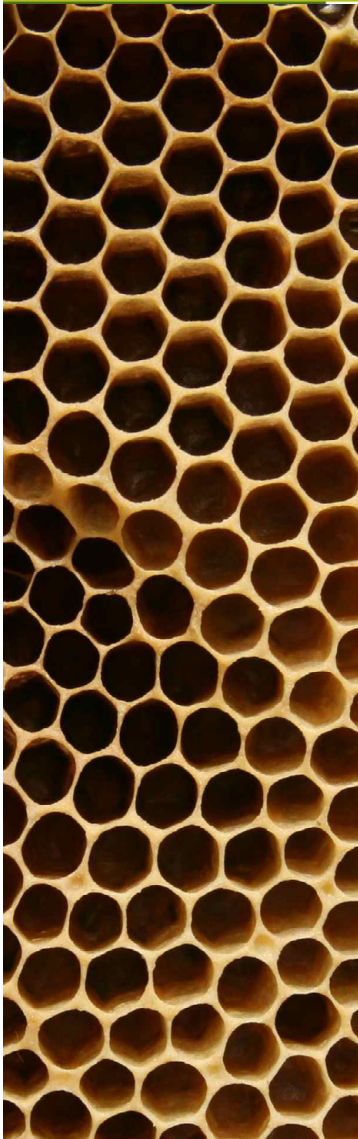
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Questions and points about VMPs and Vd

-At the level of the VMPs, national agencies and industry

1. Is there a real lack of efficiency of VMPs?
Scientific studies must be done.
2. Does *Varroa* develop resistance against
these treatments?
3. Are the essential substances of the VMPs
well distributed in the hive with sufficient
concentration?





Questions and points about VMPs and Vd

- At the level of the VMPs availability

- In Europe, each country has its own VMPs, for example Apivar is allowed in France, Spain and Italy but not in some other countries...
- The availability of some VMPs is difficult for beekeepers,
- So there is a temptation for beekeepers to use:
 - VMPs without MA for Honey Bee Use (Amitraze in Taktik, Coumaphos)
 - some products which are not allowed as VMPs (Oxalic acid and Formic acid as cleaning products bought in DIY shops)



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**Going with good rules of beekeeping technics,
the access to miticides with MA for honey
bee in one country should be facilitated in
the other european countries to allow
optimal treatment management.**



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VMPs and other diseases

Concern diseases due to pathogen
organisms sensitive to different
essential substances:
bacteria microsporidia

*In France, there are no VMPs with MA for honey bees
against these diseases*





About the diseases

- Which diseases can need VMPs?
 - (American Foulbrood, European Foulbrood, Disorders due to *Nosema* sp.)
 - Does these diseases really need VMPs?
 - Treatment: scientifically necessary?
- So, 1. necessity: reliable, sensitive diagnostic methods
 2. necessity: give vets scientific informations:
- a. in vet publications,
 - b. scientific meetings as the JSA (Beekeeping Scientific Day).
- (www.apivet.eu)



About VMPs and bacterial and microsporidial diseases

- Define the essential substances usable: (Antibiotics: tetracyclin, - Anticoccidians: fumagillin, toltrazuril)
- Define the MRL
- Define the way of use of VMPs, and **of course** the conditions of use **in association of beekeeping technics**
- **Allow the prescription of VMPs in the framework of MUMs regulation and allow accessibility to the prescription of authorized VMPs everywhere in UE**





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MA of VMPs: regulate conditions of prescription, distribution: **reasoned use**

If nothing is done: Risk of anarchic use: **antibioresistance**, and **sanitary risks for consumers.**

For sanitary and biologic reasons, the use of antibiotics or anticoccidians is not the rule but MUST STAY THE EXCEPTION

(In France has just been created a National Veterinary Committee for a Reasoned Antibiotics Use.)

To conclude...



In France, veterinarians are today more involved in honey bee health, even if bee is a « minor species », both as a practitioner and as a gearwheel of the veterinarian public health,

As prescribers, vets have the responsibility to define the need and the necessity of use of VMPs in honey bee diseases





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Thank you for your
attention

