



Freedom of choice, coexistence and zero-tolerance

The application of the core principles of EU GMO legislation to bee products and services

Walter Haefeker, Member of the Board of Directors,

Deutscher Berufs und Erwerbssimkerbund (DBIB)

President, European Professional Beekeepers Association (EPBA)

My Employees



Bee Products & Pollination Service



GMOs impact on the beekeeping sector.
The problem nobody wanted to see much
less hear or speak about!





COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 23 July 2003
C(2003)

COMMISSION RECOMMENDATION

of 23 July 2003

on guidelines for the development of national strategies and best practices to ensure the co-existence of genetically modified crops with conventional and organic farming

Promises of the Commission to the European Consumer

- Freedom of choice
 - Through labeling the consumer is enabled to choose GM or non-GM food.
- Coexistence
 - Production of non-GM food will be protected through appropriate coexistence measures.
- Zero-tolerance
 - Only events, which have been tested and approved for human consumption may be placed on the market.

**STANDING COMMITTEE
ON THE FOOD CHAIN AND ANIMAL HEALTH**

***SECTION ON GENETICALLY MODIFIED FOOD AND FEED
AND ENVIRONMENTAL RISK***

SUMMARY RECORD OF THE 2nd MEETING – 23 June 2004

GM labelling of honey:

The regulatory status of honey with respect to the Novel Food Regulation (EC) N° 258/97 had already been discussed at the Standing Committee on the Food Chain and Animal Health on 13 of June 2002. In this meeting, it was agreed that honey does not fall under the scope of the Novel Food Regulation (EC) N° 258/97 and that the possible presence of GM pollen in honey should be considered as an adventitious and unavoidable contamination.

At the request of a Member State the Committee confirmed this view with respect to Regulation (EC) N° 1829/2003 on GM food and feed. Honey is considered as an animal product according to Directive 2001/110/EEC relating to honey and does hence not fall under the scope of the Regulation if produced by non genetically modified bees. Pollen is considered as a constituent particular to honey. Bees forage over several kilometres visiting both wild and cultivated plants, this process is beyond the control of the bee keeper. Therefore, the possible presence of GM pollen in honey should be considered as an adventitious and unavoidable contamination that does not need to be labelled provided that the proportion of GM pollen in the honey is no higher than 0.9 per cent.

2005: Beekeeping – An overlooked sector of agriculture?

Der kritische Agrarbericht 2005



Imkerei – ein vergessener Teil der Landwirtschaft?

Neue Gefährdungen der Bienenhaltung durch die Einführung der Agro-Gentechnik

von Walter Haefeker

Die Bienen sind ein Segen für Natur und Landwirtschaft, aber ein Problem bei der Einführung der Agro-Gentechnik. Hobby- und Erwerbsimkerei sind in Deutschland ohnehin bereits stark rückläufig. Durch die Agro-Gentechnik sieht sich die Imkerei in ihrer Existenz bedroht. Auch die Regelungen des deutschen Gentechnik-Gesetzes können eine gentechnikfreie Honigproduktion auf Dauer nicht gewährleisten. Bienen halten sich nicht an Abstandsregeln und Katastereinträge. Die absehbare Verunreinigung des Honigs wird die Imkerei ihres Marktes berauben – und damit neue Probleme auch für die Landwirtschaft schaffen. Denn die meisten Kulturpflanzen sind auf die Bestäubungsleistungen der Bienen angewiesen. Ohne Bienen werden auch die Bauern weniger ernten.

In Deutschland werden noch etwa 700.000 Bienenvölker von Imkern bewirtschaftet. Davon etwa die Hälfte von rund 4.000 Berufsimkern im Haupt- und Nebenerwerb. Mit 20.000 Tönnen im Jahr wird etwa 20 Prozent des Honigbedarfs aus heimischer Produktion gedeckt. Dazu kommen noch Umsätze aus den vielfältigen

Nach Forschungsergebnissen der Universität Göttingen werden bei Fortsetzung des gegenwärtigen Trends im Jahre 2022 mehr als die Hälfte der landwirtschaftlichen Flächen nicht mehr ausreichend von Bienen befliegen (1). Die Deutschen sind Weltmeister im Honigkonsum, aber 80 Prozent des Honigs werden importiert. Bestäu-

Vienna, 4-6 April 2006

Co-existence of genetically modified,
conventional and organic crops

FREEDOM OF CHOICE



Walter HAEFEKER

**MINISTRY FOR RURAL AFFAIRS AND THE ENVIRONMENT
MALTA**

Even the “Bundesrat” agreed with the beekeepers ...

Bundesrat

Drucksache **563/07** (Beschluss)

30.11.07

Beschluss
des Bundesrates

Verordnung über die gute fachliche Praxis bei der Erzeugung gentechnisch veränderter Pflanzen (Gentechnik-Pflanzenerzeugungsverordnung - GenTPflEV)

B

EntschlieÙung

1. Der Bundesrat fordert den Bund auf, mit einer Verordnung schnellstmöglich sicherzustellen, dass auch die Belange der Imkerei beim Anbau von gentechnisch veränderten Pflanzen angemessen berücksichtigt werden. Der Geltungsbereich der vorliegenden Verordnung schließt die Imkerei nicht ein. Die Koexistenz beinhaltet jedoch nicht nur das Nebeneinander des GVO-Anbaus und konventionellen Pflanzen, sondern auch des GVO-Anbaus und der Imkerei. Hierfür sind gesonderte Regelungen erforderlich.

The customer is always right!

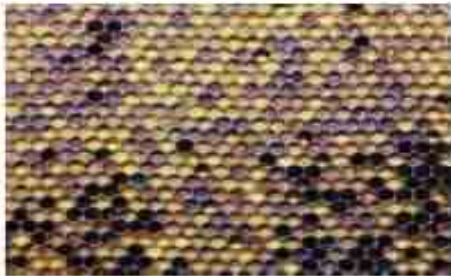
- The views of beekeepers on GMOs around the world may vary greatly.
- But it does not matter, what beekeepers think. It matters, what our customers think.
- What matters is also, what our customers have been promised by the commission about GMOs in their food:
 - Freedom of choice
 - Coexistence
 - Zero-tolerance

Freedom of Choice

- Our customers have the same rights when purchasing honey as they have when shopping for any other food.
- Only proper labeling of honey containing GMOs allows consumers to exercise this right.
- Customers demand to know what is in their regional honey, when there is GMO cultivation in the region.
- Beekeepers marketing directly to the consumer cannot hide behind labeling rules.

Freedom of Choice

- It's not just about the pollen.
 - Depending on the plant species, the pollen is an indication of the source of the nectar.
 - If there is GM-canola pollen in the honey, part of the nectar will be of GM origin.
- All bee products need to be available in non-GM quality for our customers to choose.



Stress pollen in honeycombs



Honey



Pollen



Propolis powder

Propolis



Gelée Royale

Freedom of Choice

- The beekeeping community is supporting efforts to define standards for honey analysis that better reflect the unique properties of honey.
- It is essential that such standards are not only practical but most importantly credible for consumers.
- Trying to define the problem away by watering down standards only leads to the market place defining it's own standards, resulting in confusion and fragmentation.

Zero-Tolerance

- European consumers have been promised zero-tolerance for events, that have not been found by EU authorities to be safe for human consumption.
- Beekeeping has the highest likelihood of contamination from non-food and research events.
- In order to protect the integrity of our products, the zero-tolerance principle has to be fully implemented.
- All GMOs need full food approval unless there is no possibility of contamination of bee products.
- Food approval can only be given based on credible tests.
 - No food approval „lite“ for honey.
 - No zero-tolerance “lite” for honey.

Zero-Tolerance

- MON-810 is not an exception, but is representative for products without comprehensive authorization for food.
- At least 20 companies worldwide are developing plants for the production of pharmaceutical or industrial proteins using alfalfa, barley, corn, white clover, flax, mustard, peas, potatoes, rape seed, rice, safflower, soy, sugar cane, tobacco, tomatoes, wheat and other plants.
- The regulations have to work for the products coming down the pipeline.

Are we beekeepers and our customers expected to tolerate all of this in our products?

Pharming (genetics) - Wikipedia, the free encyclopedia

W http://en.wikipedia.org/wiki/Pharming_(genetics)#Pharming_in_plants

pharma crops

News (450) Technology (373) Belleb Schreiben Tools Reise Imkerel Shopping Haefekar Family Network

List of originators (companies and universities) and research projects and products [edit]

Please note that this list is by no means exhaustive.



- **Agragen** - docosahexaenoic acid and human serum albumin in flax
- **Chlorogen, Inc.** - cholera, anthrax, and plague vaccines, albumin, **cloriene**, interferon for liver diseases including hepatitis C, elastin, 4HB, and insulin-like growth factor in tobacco chloroplasts
- **Dow AgroSciences** - poultry vaccine against **Newcastle disease virus** (first PMP to be approved for marketing by the **USDA Center for Veterinary Biologics**^[11] - however as of 2010 it appears that Dow AgroSciences has not begun marketing the product.)
- **Dow Chemical Company** - anti-cancer antibodies
- **Epicyte** - spermicidal antibodies in corn
- **Genzyme** - antithrombin III in goat milk
- **GTC Biotherapeutics** - **ATryn** (recombinant human antithrombin) in goat milk
- **Iowa State University** - unknown product in corn
- **MacIntosh & Associates, Inc.** - unknown product in peas
- **Medicago Inc.** - Pre-clinical trials of **Influenza vaccine** in alfalfa^[12]
- **Maristem Therapeutics** - **Lipase**, **lactoferrin**, plasma proteins, **collagen**, antibodies (IgA, IgM), allergens and protease inhibitors in tobacco
- **Pharming** - **C1 inhibitor**, human **collagen 1**, **fibrinogen** (with **American Red Cross**), and **lactoferrin** in cow milk
- **Planet Biotechnology** - antibodies against **Streptococcus mutans**, antibodies against **doxorubicin**, and **ICAM 1 receptor** in tobacco
- **PPL Therapeutics** - **Alpha 1-antitrypsin** for **cystic fibrosis** and **emphysema** in sheep milk
- **ProdiGene** - **aprotinin**, **trypsin** and a veterinary **TGE vaccine** in corn
- **SemBioSys** - **insulin** in safflower
- **Syngenta** - **Beta carotene** in rice (this is "golden rice 2")
- **University of Arizona** - **Hepatitis C vaccine** in potatoes
- **Ventria Bioscience** - **lactoferrin** and **lysozyme** in rice
- **Washington State University** - **lactoferrin** and **lysozyme** in barley

Projects known to be abandoned

- **Large Scale Biology** (*bankrupt*)^[13] - using **Tobacco mosaic virus** to develop patient-specific vaccines for **Non-Hodgkin's lymphoma**, **Papillomavirus vaccine**, **parvovirus vaccine**, **alpha galactosidase** for **Fabry disease**, **lysosomal acid lipase**, **aprotinin**, **interferon Alpha 2a and 2b**, **G-CSF**, and **Hepatitis B vaccine antigens** in tobacco
- **Monsanto Company** - abandoned development of pharmaceutical producing corn

Zero-Tolerance is being applied to other food.

EU tightens control of Chinese rice over GM fears

(AFP) – Nov 15, 2011  

BRUSSELS — The European Union has tightened controls on imports of Chinese rice products after a growing number of shipments were contaminated by unauthorised genetically-modified rice, the EU said Tuesday.

The EU has decided to require Chinese authorities to provide a report on all rice consignments before export, instead of the current random checks.

The move was in response "to an increasing detection of products contaminated with unauthorised genetically-modified (GM) rice," the European Commission said in a statement.

The decision was based on an audit from a mission in China carried out by the commission's Food and Veterinary Office in March and persistent reports about GM rice in the EU's Rapid Alert System for Food and Feed.

"The mission's initial findings indicate an uncertainty as to the level, type and number of GM events, which may have contaminated rice products originating in, or consigned, from China," the commission said.

"They also indicate that there is a risk of further introductions of non-authorised genetically-modified organisms in such rice products."

Chinese rice products contaminated with the unauthorised GM rice Bt63 have been notified through the EU's alert system since September 2006.

A control system was set up in April 2008 to prevent the introduction of such rice in Europe but GM rice was detected again later on.

The new measures will be reviewed in six months.

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Coexistence

- No freedom of choice for consumers, if beekeepers cannot produce GMO-free honey.
- Forcing beekeepers to flee from GMO-cultivation is obviously not acceptable to beekeepers.
 - If a farmer grows a crop that needs pollination, his rights are infringed upon, if a farmer in the neighborhood decides to grow GMOs and the beekeepers have to leave or are no longer willing to move their bees into the area.
 - Coexistence rules in the member states need to protect these farmers.

Drawing the wrong conclusions:

- The Court clearly agreed with the beekeepers, that honey cannot remain outside of the GMO regulatory framework.
- The Court could have ruled, that (EC) No 1829/2003 has to be changed.
- The Court found a way to cure this problem within current rules.
- The ruling of the European Court of Justice means that pollen has to be treated **like** an ingredient pursuant to Regulation (EC) No 1829/2003, not that it **is** an ingredient in any other regulatory context.
- Therefore, it is wrong to assume that the court decision has any effect on the regulation of honey not containing GMOs.
- Nothing in the ruling requires any regulatory body to change how GMO-free honey is labeled.

Drawing the right conclusions:

New tools for Chilean beekeepers to meet demanding European GM standards | Fresh Fruit Portal

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The voice of the Southern Hemisphere

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New tools for Chilean beekeepers to meet demanding European GM standards

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December 9th, 2011

Chile's Agriculture and Livestock Service (SAG) has released a new computer system to let beekeepers know where genetically modified organism (GMO) crops are located. The move follows a European Union (E.U.) Court of Justice decision to enforce stricter honey trading laws in September, after a German beekeeper was forced to destroy his production when a trace of GM corn pollen was found.

Europe is the leading destination for Chilean honey exports, and the South American country is taking action to make sure the situation stays the way.

SAG's "National Geographic System for Apiculture Consultation" allows beekeepers to enter coordinates of where their apiaries are located, and keep a distance from catchment areas where GM seeds may be found.

"This system allows us to have our hives far away from GMO crops. This tool, and the related analysis, allows our honey not only to continue being traded in the European Union and the world, but they can also be more appreciated for being free of GMO pollen," said Federation of Beekeeping Cooperatives president Italo Bozzi.



Drawing the right conclusions:

- GMO cultivation only with tight controls and measures to minimize the impact on the beekeeping sector.
- A carefully monitored public register of all GMO cultivation including research plots is an essential element of any proper regulatory regime.
- Failure to provide accurate information about where the risk of contamination exists results in prohibitively high analysis cost for GMO-free production.
- Each EU member state will now have to come up with coexistence measures for Beekeepers.
- Coexistence measures between farmers growing the same crop are typically calculated using the formula: empirically observed distance * safety factor for conventional crop + safety factor for organic. The observed maximum foraging distance for honey bees extends to more than 10 kilometers. Honey bees are a favorite subject to be studied by biologists. The basis of data available is very good. Therefore the safety factor used when determining the proper safety distance may be lower than the factor of 2 typically used for coexistence of crops.
- Most experts, who have looked at this issue have concluded that 10 km could be sufficient to avoid contamination.

Our best protection so far:
Farmers, environmentalists and
consumers created GMO-free regions.



Agro-**GEN**technik
FREIER
Landkreis
Bad Tölz-Wolfratshausen

GIB DEIN JA!

www.civilcourage.ro

Agro-**GEN**technik
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Miesbach

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www.civilcourage.ro

Outlook ...

Famous quote:

“America will always do the right thing, but only after having exhausted all other options.”

We are optimistic, that in the EU we now have the chance to do the right thing for beekeepers around the world and for the European customers we all serve.



Thank you for your kind attention!

Walter Haefeker, Vorstandsmitglied,
Deutscher Berufs und Erwerbssimkerbund (DBIB)
Präsident, European Professional Beekeepers Association (EPBA)

Is this a bicycle?
Or is this **like** a bicycle for the
purposes of traffic regulations?





19-21 November 2007
Seville - Spain

Walter Haefeker

European Professional Beekeepers Association

GERMANY



CO-EXISTENCE OF GM-CROPS WITH BEEKEEPING

IMPACT OF GM-CROPS ON THE BEES AND THEIR PRODUCTS



Honey bees collect Nectar, Honeydew, Pollen, Resin and Water.
Bee products can be contaminated by GM-crops including those not intended for food production like starch potatoes, poplar trees or pharma-crops.



Honey bees cover a foraging area of a maximum of 30 square kilometers.
This presents unique problems when it comes to co-existence models and the supply chain for honey and other bee products.



- Contaminated nectar, honeydew or their significant quantities of pollen from GM-crops;
- Bee and pollen for GM-crops: This can lead to contamination of bee products caused by the foraging period of a particular crop;
- Pollen used in bee products: GM-crops can be present in bee products commercially available;
- Contaminated products: Bee products containing GM-crops or other bee products from GM-crops containing GM-crops.

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Behaviour of honeybees and beekeepers and their impact on co-existence models

Walter Haefeker

(European Professional Beekeepers Association EPBA)

Honey bees are one of the most important vectors for pollen flow. The foraging area of a single colony can easily exceed 30 square kilometers. The behaviour of the foragers cannot as easily be represented in co-existence models as the spatial patterns of landscapes, wind patterns and agricultural practices. To complicate matters, honeybees of professional beekeepers are moved several times a year to take advantage of honey flow and increasingly to provide pollination service for certain crops.

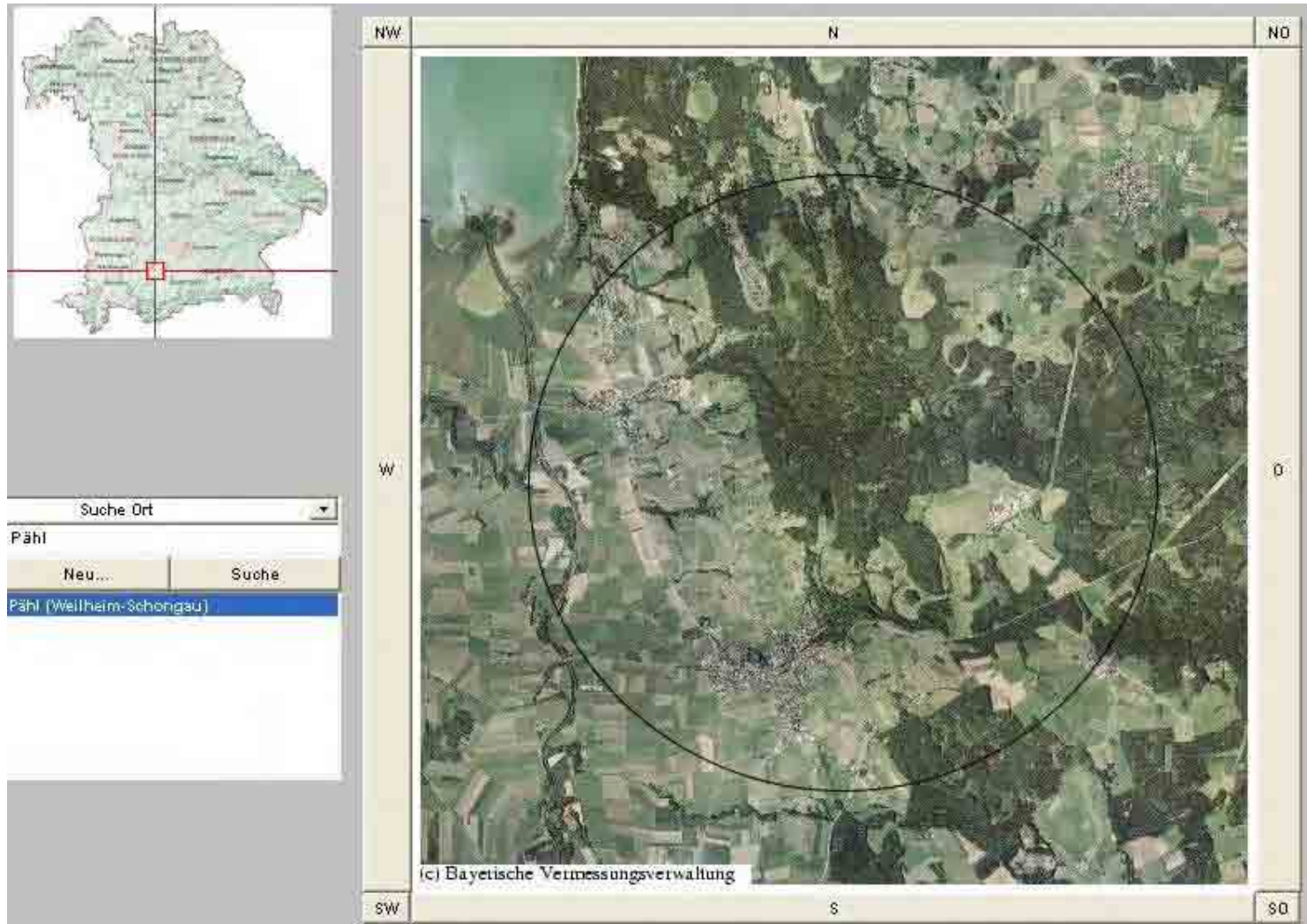
This presentation will provide an overview of the factors driving the foraging behaviour of honeybees as well as the decision making process of commercial beekeepers as to when and where to move their colonies. Examples will be given for how these factors may significantly change the results of MAPOD® and other models trying to predict the adventitious presence of GM in non-GM fields. Information on how to model the impact on bee products like honey and pollen will be provided.

How does beekeeping fit into this picture?





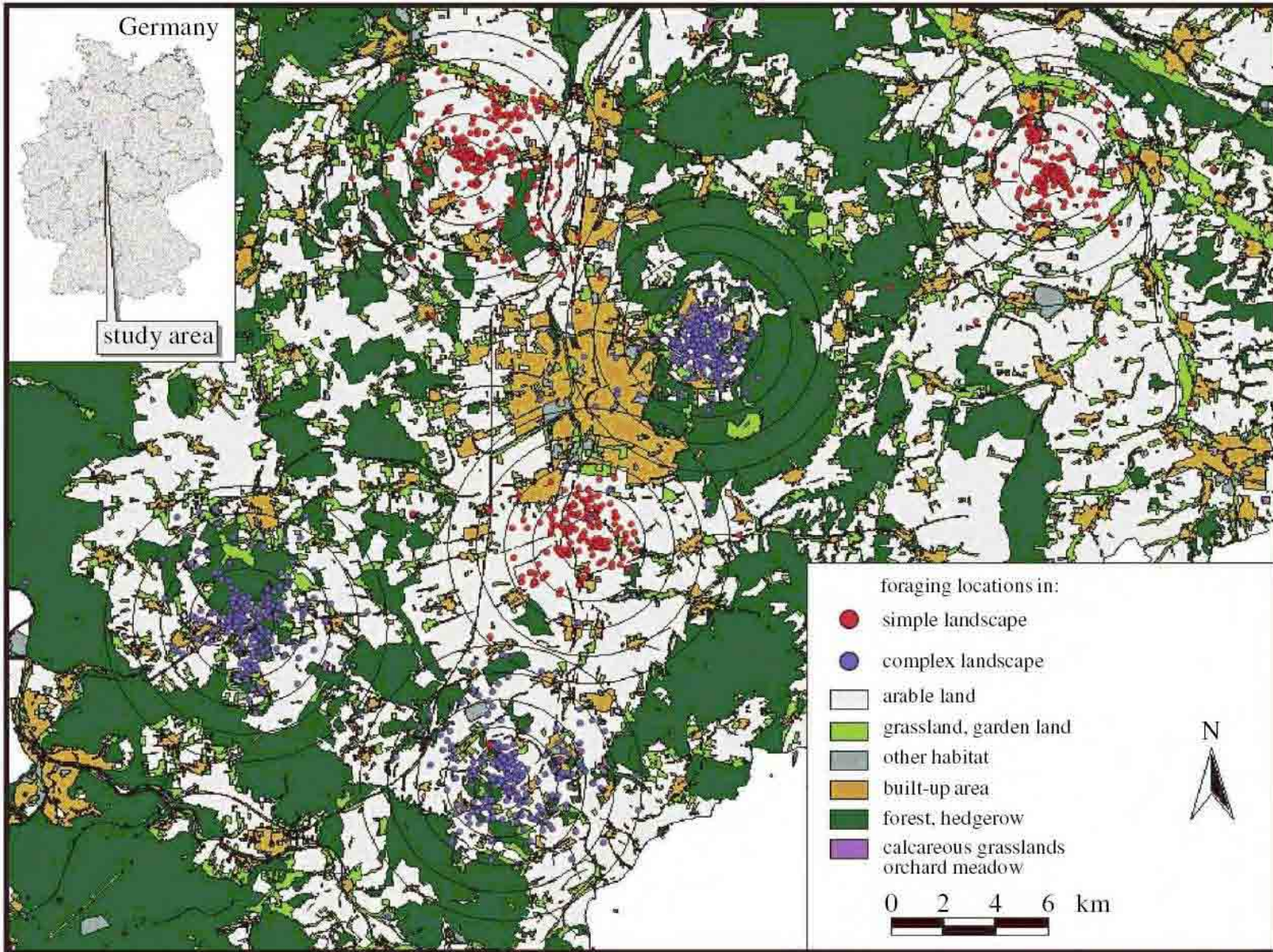
Flugkreis eines Bienenvolkes: mindestens 3km



Germany



study area



CO-EXISTENCE OF GM-CROPS WITH BEEKEEPING

IMPACT OF GM-CROPS ON THE SUPPLY CHAIN FOR HONEY AND OTHER BEE PRODUCTS.

Walter Haefeker, Vice President, European Professional Beekeepers Association



Collecting nectar from flowers



Collecting resin from a tree



Collecting pollen from flowers (Photo: J. G. S. 2008)



Collecting water for propolis from water



Collecting water

Honey bees collect Nectar, Honeydew, Pollen, Resin and Water.

Bee products can be contaminated by GM-crops including those not intended for food production like starch potatoes, poplar trees or pharma crops.

Bavarian court: If you want to protect your product, move your bees, ...



So we moved the bees ...

