



The Assessment of Honey Bee Losses and Applied Control Strategies in Turkey

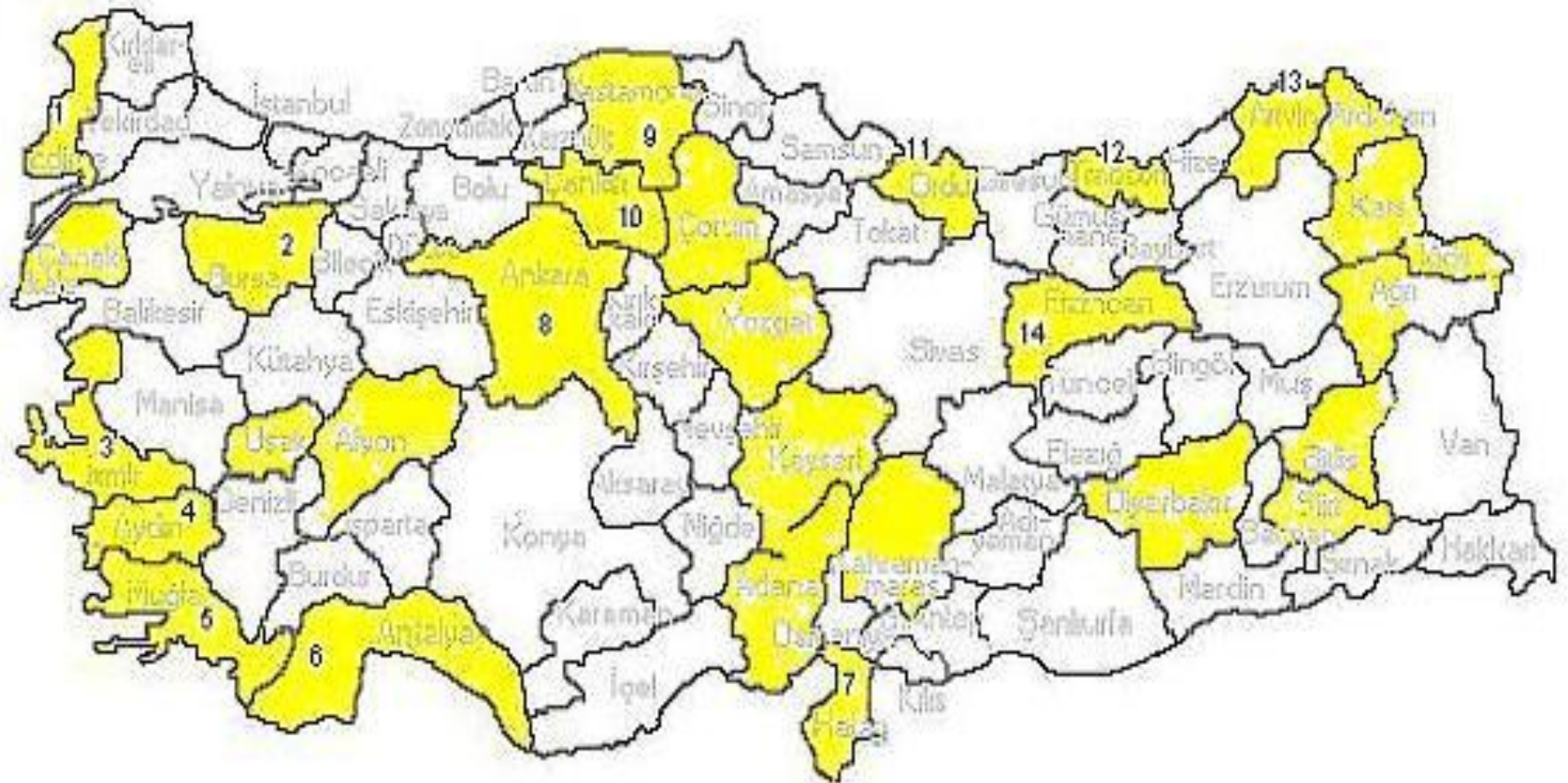
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For ten years...

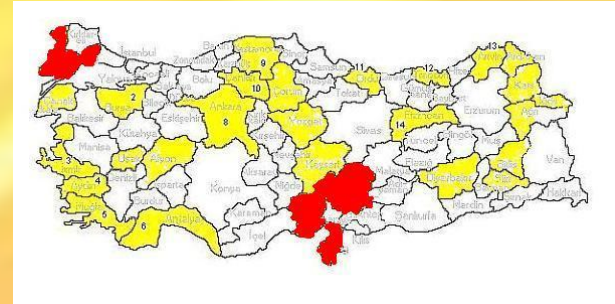




2006

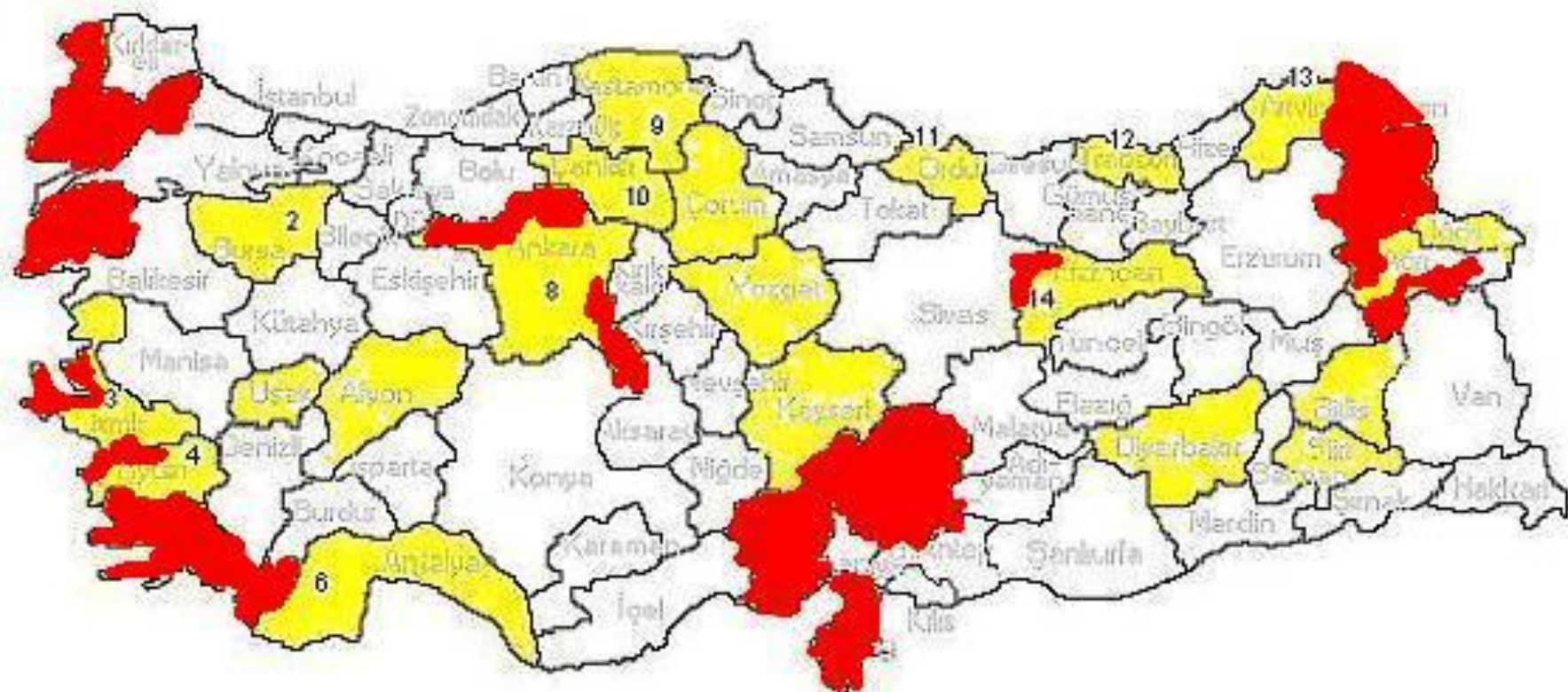
This area colder than the south of Turkey (Hatay, Kahramanmaraş and Adana), so climatic options are very different.

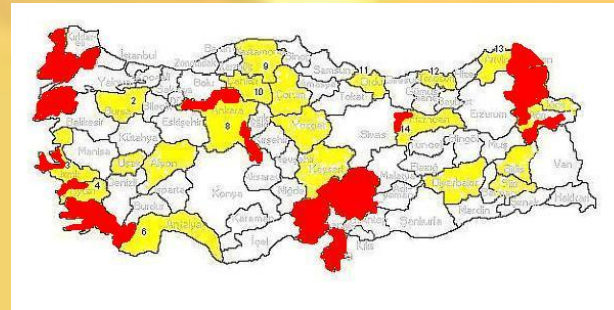
In addition, honey bee races are different from each other.



The background features a honeycomb pattern of hexagons in shades of yellow and orange. On the left side, there is a 3D cube rendered in a light brown color, appearing to be part of the honeycomb structure. On the right side, there is a larger, flat 2D hexagon in a light orange color. The year '2007' is centered in the middle of the image in a large, bold, black font.

2007





We organised a lot of field trials and collected samples from approx. 1500 apiaries in different regions of Turkey



METHOD



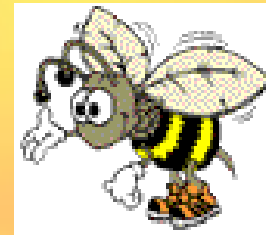
QUESTIONNAIRE

We applied question forms to 1200 beekeepers and they answered them. We asked the style of the colony losses and the other things...

LABORATORY DIAGNOSIS TECHNIQUES

After collected samples, we used laboratory diagnostic techniques for honey bee diseases. We determined AFB, EFB, Chalkbrood, Stonebrood, Nosemosis, Varroasis, Acarapiasis.

In respect of our laboratory diagnostic analyses and evaluation of questionnaires, the reasons of death or loss of honey bees can be categorized



Honeybee diseases (**Virus (new)**, Akar, Bakteri)

cell phones and
electromagnetic signals

Feeding problem
and starvation

Queen bee problem

Seasonal changing

Pesticides (imidaclopride)

GDO plants

CCD
(Colony Collapse Disorder)



RESULTS



QUESTIONNAIRE

honeybee loss rates

40% South
5% North
50% West
20% East
30% North-West
2% North-East
40% South West
18% South-East
of **TURKEY**

LABORATORY DIAGNOSTIC TECHNIQUES

honeybee loss rates

15% AFB+EFB, 5% nose mose	South
2% AFB+EFB, 10% nose mose, 4% chalkbrood	North
9.5% AFB+EFB, 7% nose mose	West
8% AFB+EFB, 7% nose mose	East
9.4% AFB+EFB, 13% nose mosis	North-West
1% nose mosis	North-East
5.1% AFB+EFB, 2% nose mosis	South West
1% AFB+EFB, 1% nose mosis	South-East

of **TURKEY**

And 92.8% of Turkey, infested by *V. destructor*

RESULTS



QUESTIONNAIRE

honeybee loss rates

TURKEY AVERAGE RATE

25.6%

LABORATORY DIAGNOSTIC
TECHNIQUES

honeybee loss rates

TURKEY AVERAGE RATE

12.2%

13.4%

Except the honey bee diseases;

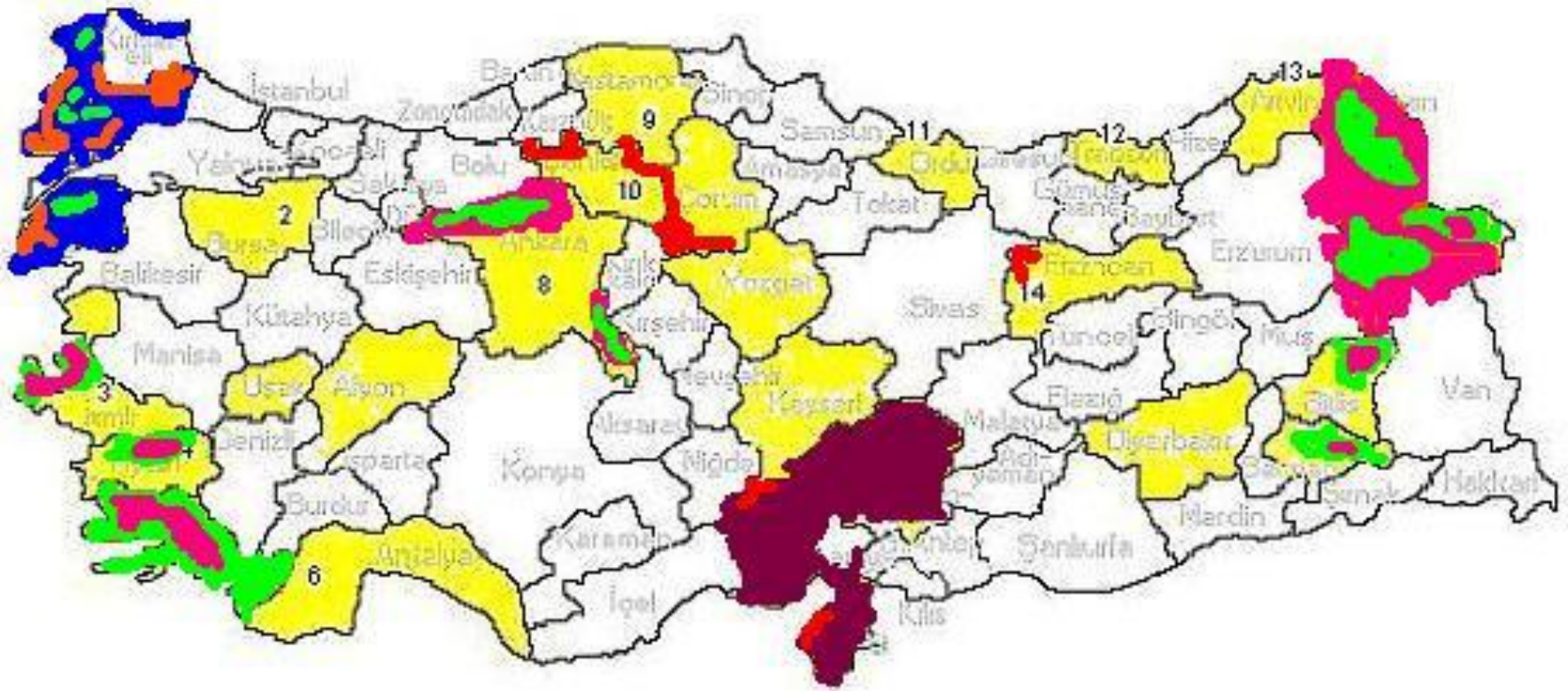
- *Incorrect answers to questionnaire (beekeepers can not diagnose by laboratory techniques, so only questionnaire is not enough)*
- *Pesticides (esp. Imidaclopride in Trakya region)*
- *Incorrect feeding*
- *Queen bee problem etc.(different races, different climatic options)*

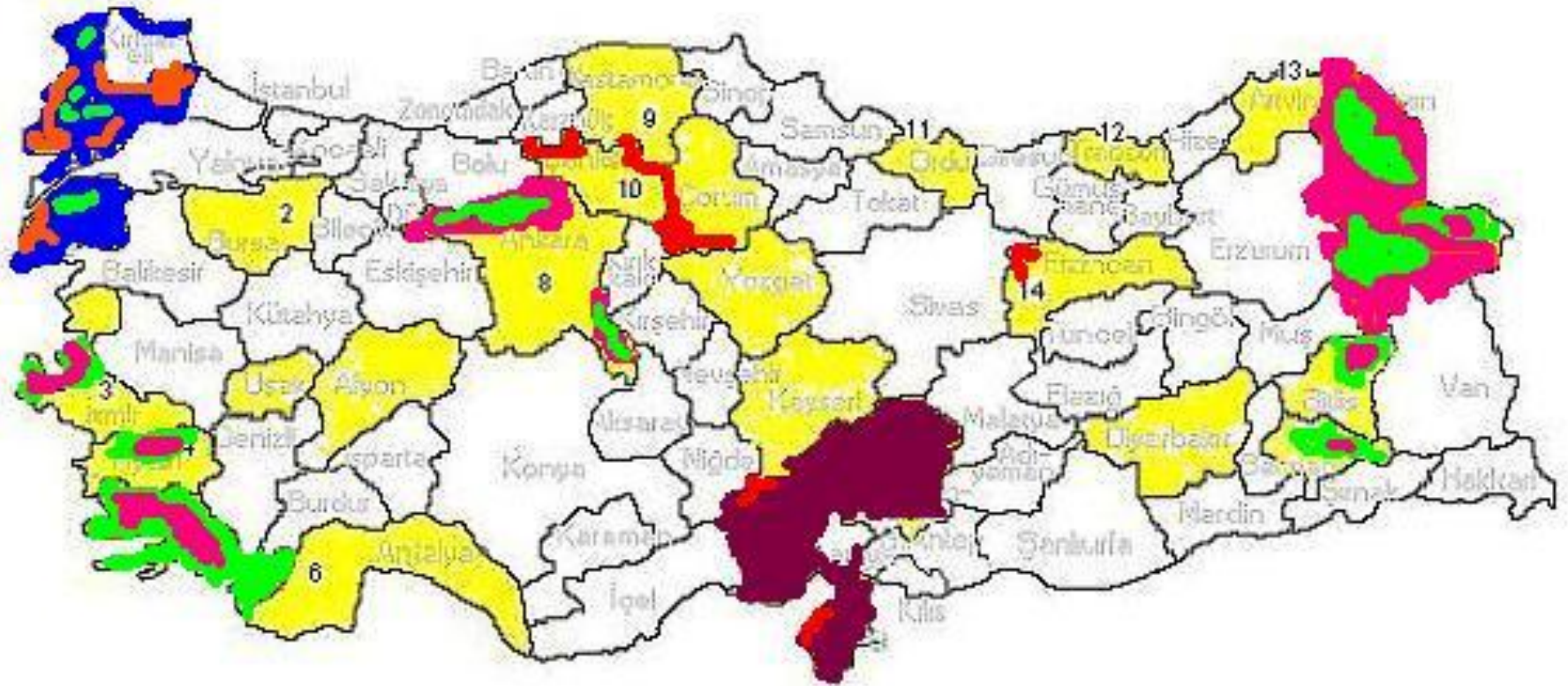
most of them depend on

SEASONAL CHANGING & V.destructor+ VIRUSES!!

Causeless loss rate:3-4%

So, new map is not only red after the investigation;



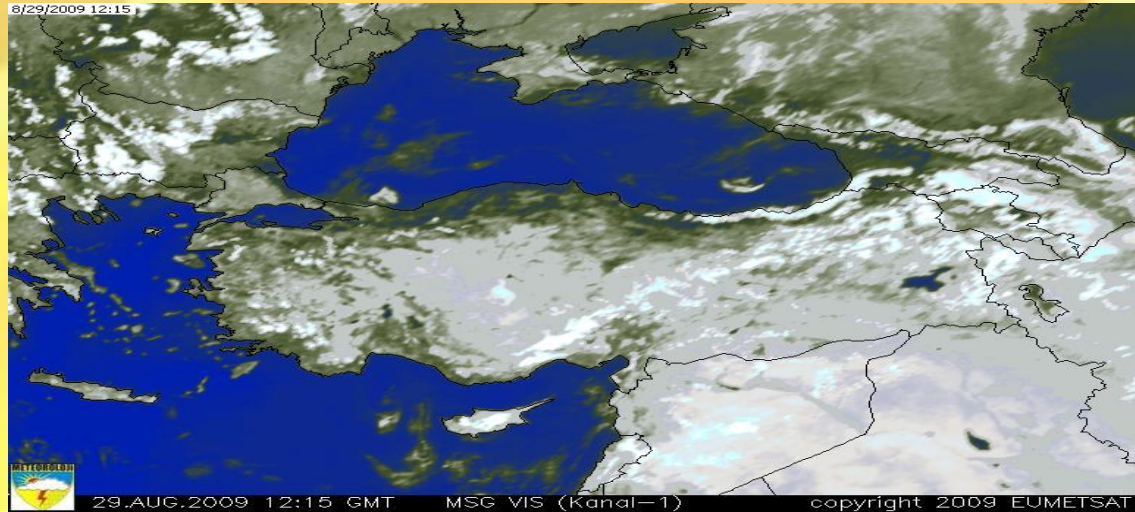



- Sampling area
- Beekeeper's incorrect techniques
- Huge level of seasonal change
- Pesticides
- Virus infection
- Causeless loss

Except honey bee diseases®

Turkey is at different position from all Europe for Beekeeping:

1. Turkey is in subtropic climatic zone
2. Turkey has 4 different climatic and floral seasons.
3. Turkey has 5 different honeybee races, so high level genetic diversity
(genetic diversity=genetic resistance to pathogens= resistance to different conditions
4. Turkish Bee Population is very high and Turkish Beekeepers are professional..





2008

- Season was good (There were normal climatic values)
- Nectar feeding was good
- Causeless losses or except honey bee diseases losses rates were decreasing 😊 this year
- Colony death rate was normal level, not a huge number!
- Honey production was well 😊

- **Colony losses in 2006: 28%**
 in 2007: 29.2%
 in 2008: 1.8%



2009

%1.8

*2008-2009-2010: The major problem is honeybee poisoning in Turkey!!
***Pesticides or insecticides can cause thousands of honeybee colonies death*



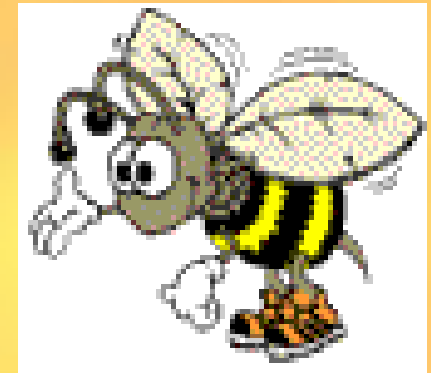
To sum up, only geographical and climatic factors can limit the all pathogens' activities...



B, EFB,

ment of

(viral





Bilime olan inançlarını yaptıkları işbirliğiyle her zaman gösteren Türkiye Arıcular Birliği ve Türk Arıcularına teşekkür ederim.

**TODA RABA...
TEŐEKKÜR EDERİM...
THANK YOU...**

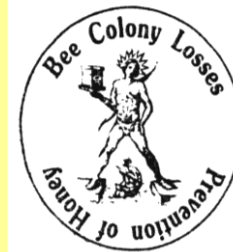


THE COLOSS NETWORK

Prevention of Honeybee Colony Losses

www.coloss.org





The COLOSS network

“Prevention of Honeybee

COST Action FA0803: 157 members from 39 countries including Turkey and Israel

Action Chair: P Neumann (Switzerland)

Executive committee: T Blacquièrè (Netherlands), K Crailsheim (Austria), JD Ellis (USA), F Hatjina (Greece), A Özkirim (Turkey)

1. Monitoring & Diagnosis

Aykut Kence

Victoria Soroker

Aslı Özkırım

2. Pests & Pathogens

Nor Chejanovsky

3. Environment & Beekeeping

4. Diversity & Vitality

Meral Kence



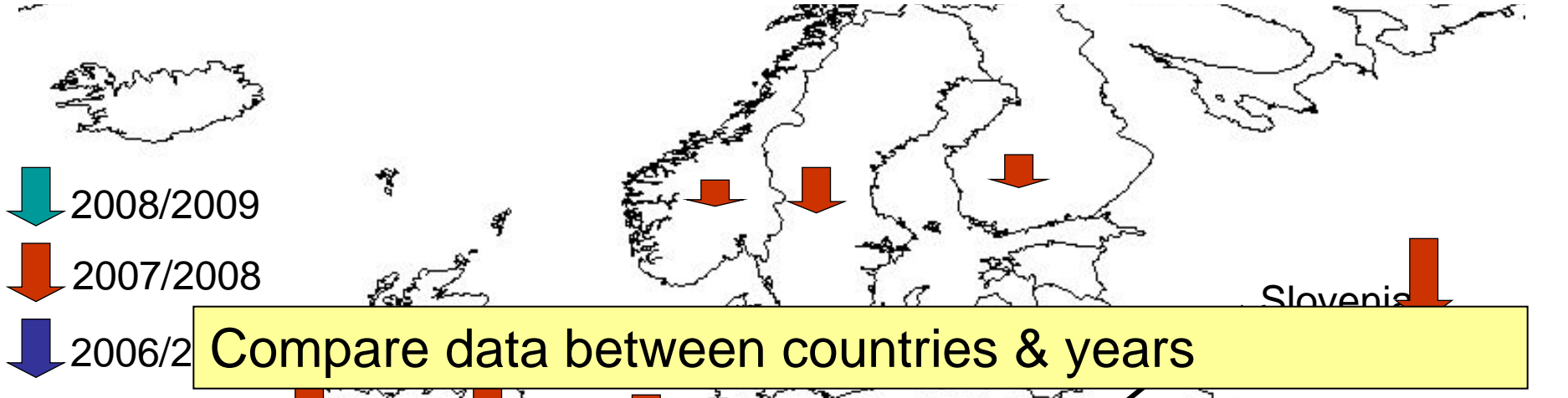
Turkish Scientists in Coloss Group

- Dr. A. Özkırım (Hacettepe University)-EC
- Dr. A. Kence (METU)-MC
- Dr. M. Dođarođlu (Trakya University)
- Dr. L. Aydın(Uludađ University)
- Dr. M. Kence(METU)
- Dr. B. Yücel (Ege University)
- Dr. İ. Kandemir(Ankara University)
- Dr. T. Giray(Puerto Rico University)
- Dr. R. İ. Tunca (Van University)
- Dr. M. N. Muz (Mustafa Kemal University)
- Aygün Yalçınkaya (PhD student)(Hacettepe University)

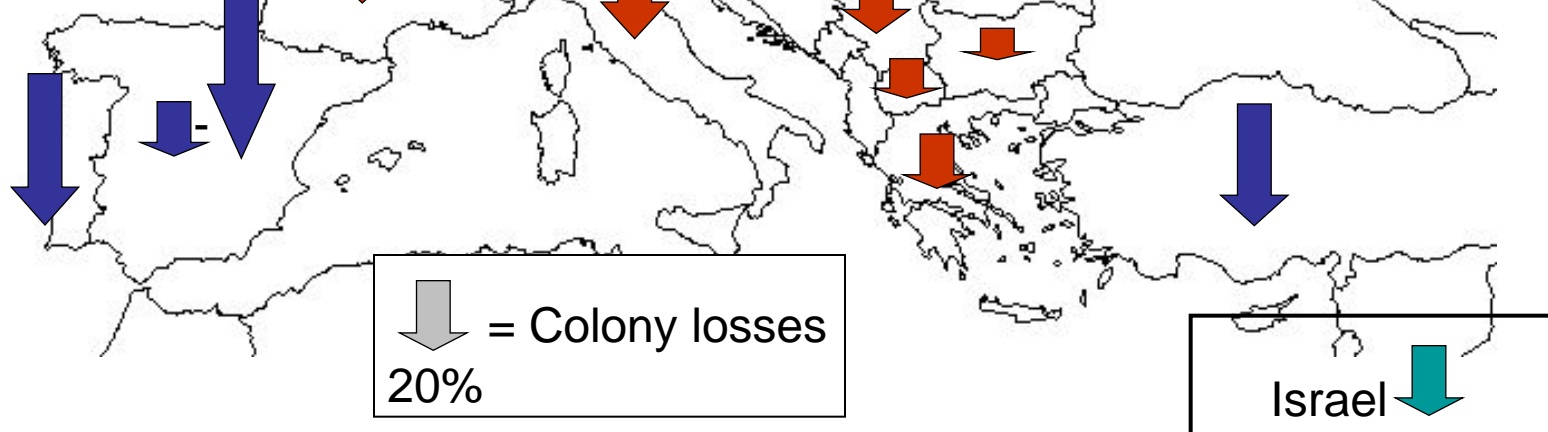
Israeli Scientists in Coloss Group

- Dr. Victoria Soroker MC (Volcani Agricultural Research Organisation)
- Prof. Nor Chejanovsky MC (Volcani Agricultural Research Organisation)
- Dr. Gal Yarden (Beeologics)
- Prof. Ilan Sela (Hebrew University)
- Dr. Boris Yakobson (Kimron Veterinary Institute)
- Dr. Amots Hezroni (Volcani Agricultural Research Organisation)
- Mr. Yossi Slavetski (Extension Service Ministry of Agriculture)
- Mr. Haim Efrat (Extension Service of Ministry of Agriculture)

Colony Losses in Europe: COLOSS Data (04.09)



Need for standards in:
monitoring (COLOSS)
diagnostics
vitality evaluation



To do list for Coloss network:

1. Joining forces at an international scale (COLOSS)

2. Standardization of monitoring and research tools

**3. Identification of critical factors involved in Colony Losses
(formula = Varroa + x + y + z +... = losses)**

4. Development of emergency measures and sustainable management

Monitoring and BeeBook Workshop

(January 2010, Amsterdam)





COLOSS Basic Questionnaire 2009-10

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Please read the surveyor notes carefully before using the question sets!

ESSENTIAL QUESTION SET	
Beekeeper Information	
E1	Province <input type="text"/>
E2	Country <input type="text"/>
Questionnaire	
E3	How many production colonies did you have at October 1 2009 ? <input type="text"/>