

Beekeeping in Sweden



Estonian Beekeepers Winter Day
Tartu, 2011

Preben Kristiansen

Beekeeping in Sweden

10 000 -14 000 beekeepers

110 000 -150 000 colonies

2 500 tons of honey



Beekeepers

11%

28%

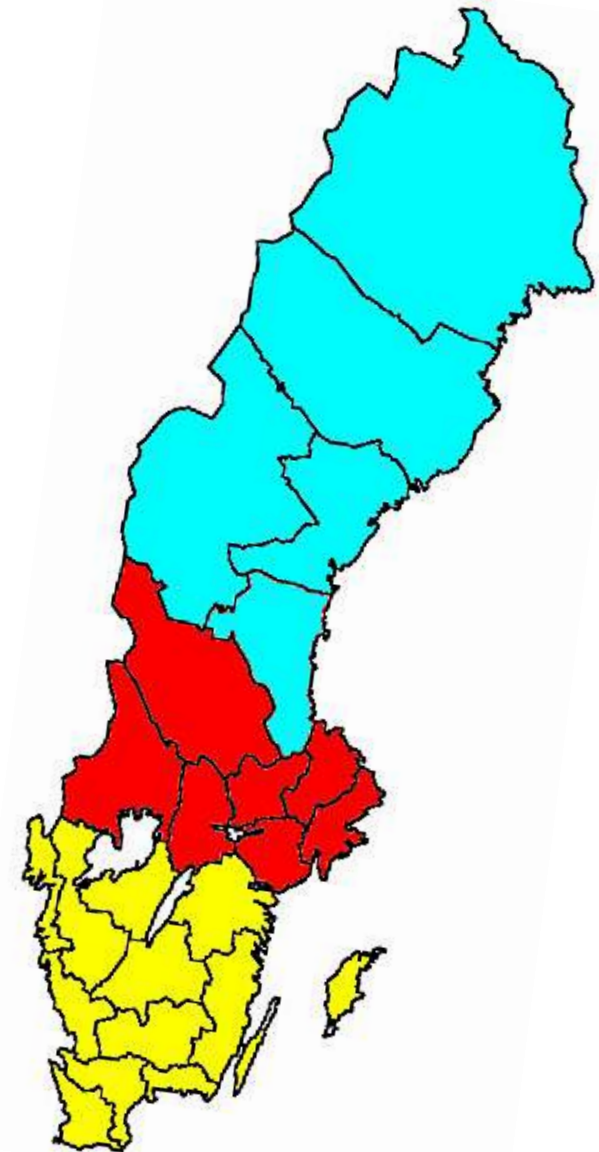
61%

Hives

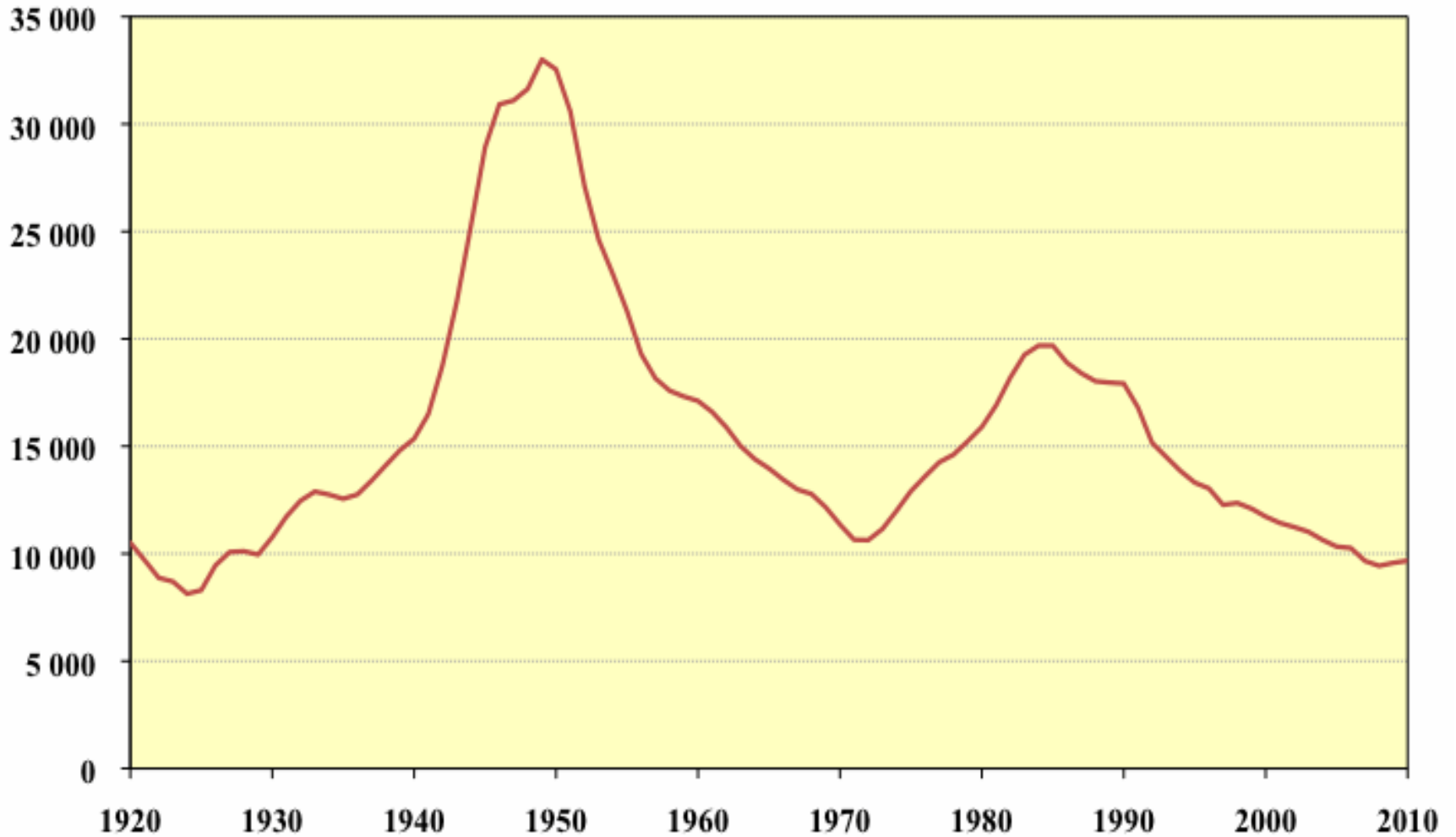
6%

33%

61%

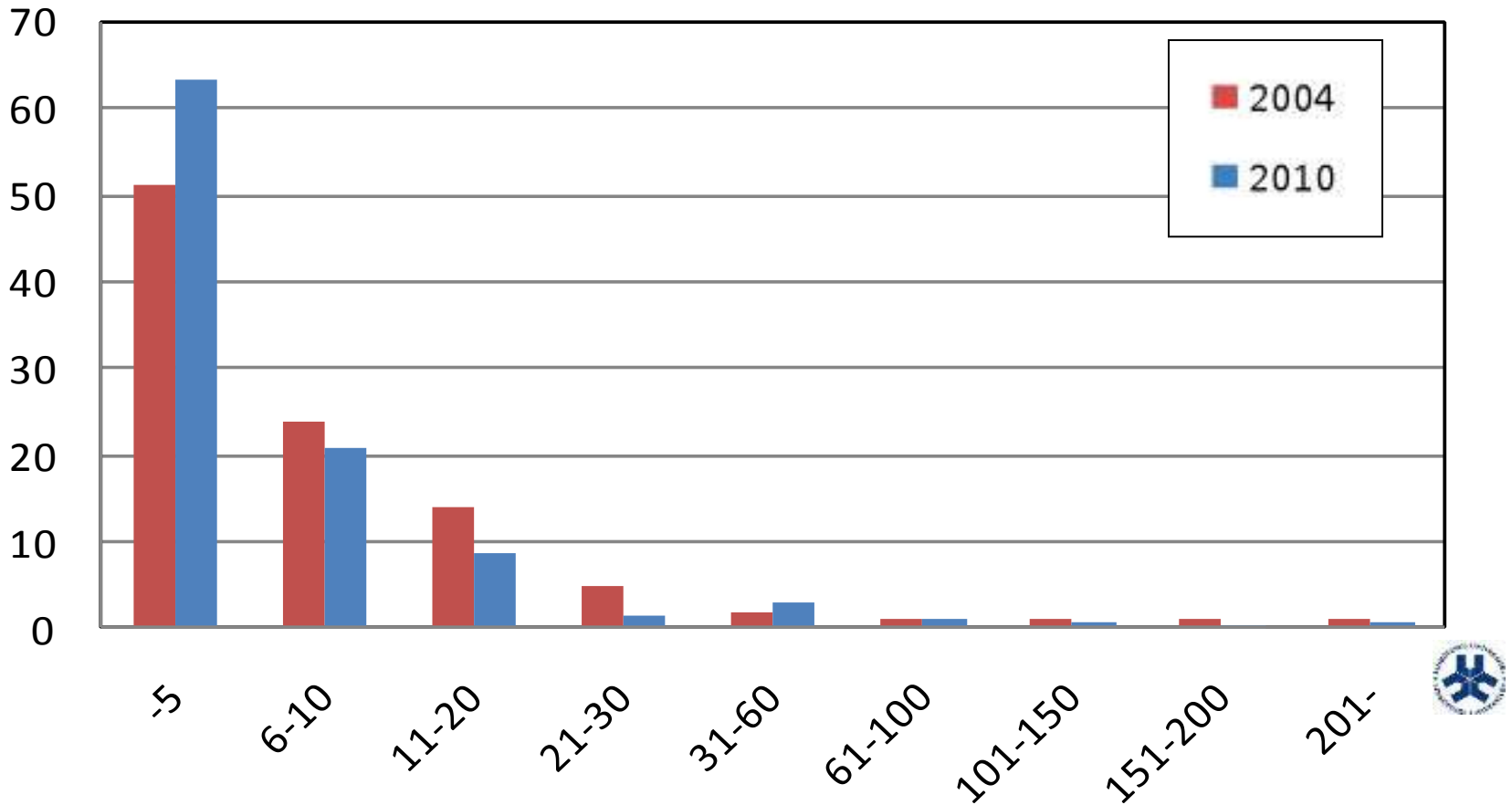


Members of the Swedish Beekeepers Association



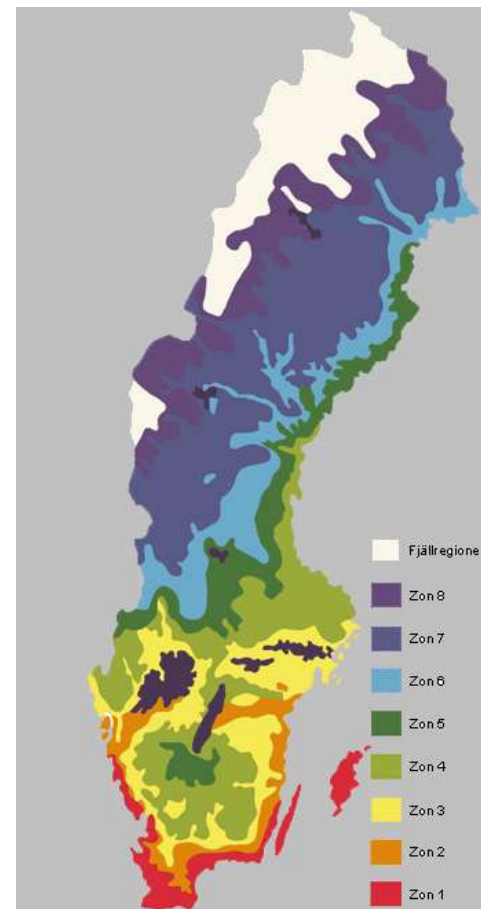
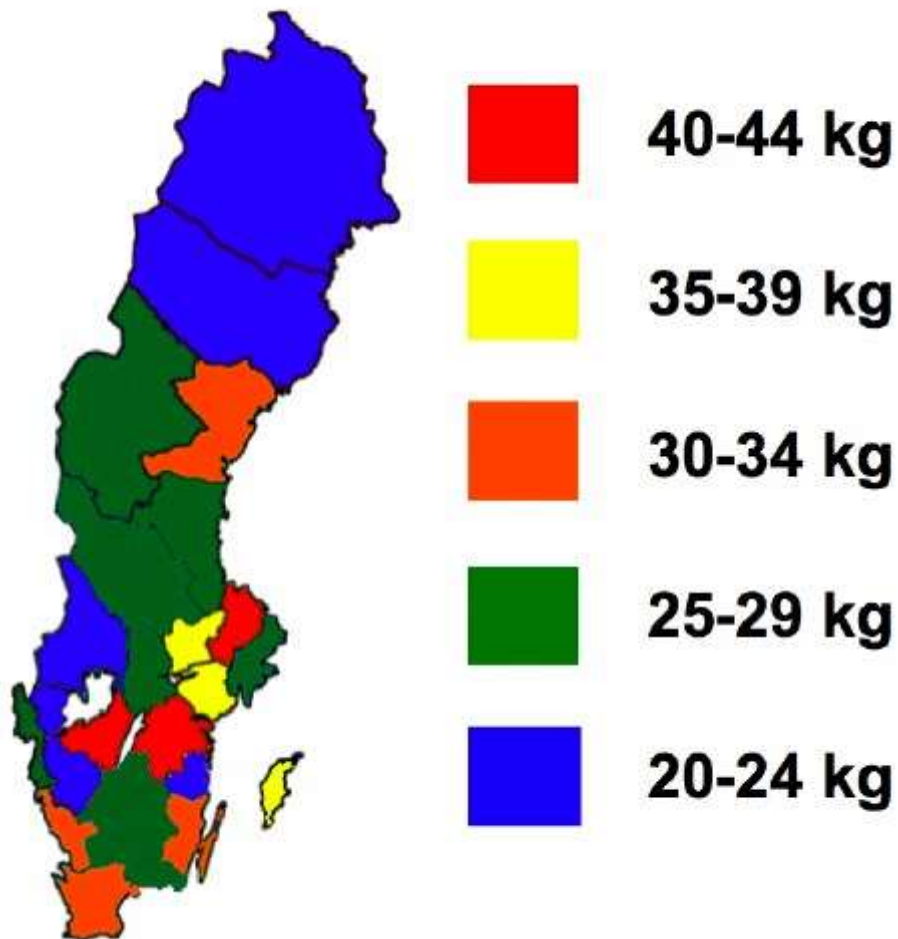
Swedish Beekeepers Association, SBR

How many colonies do the members of SBR have?



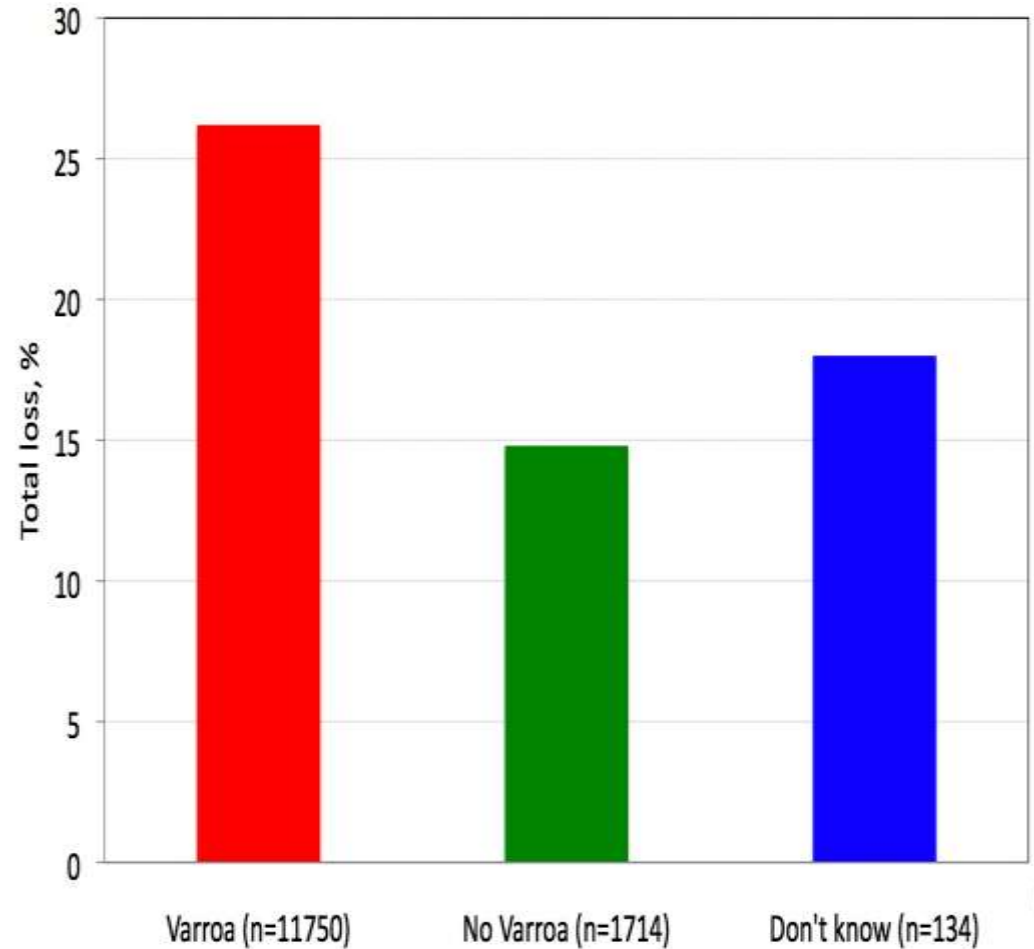
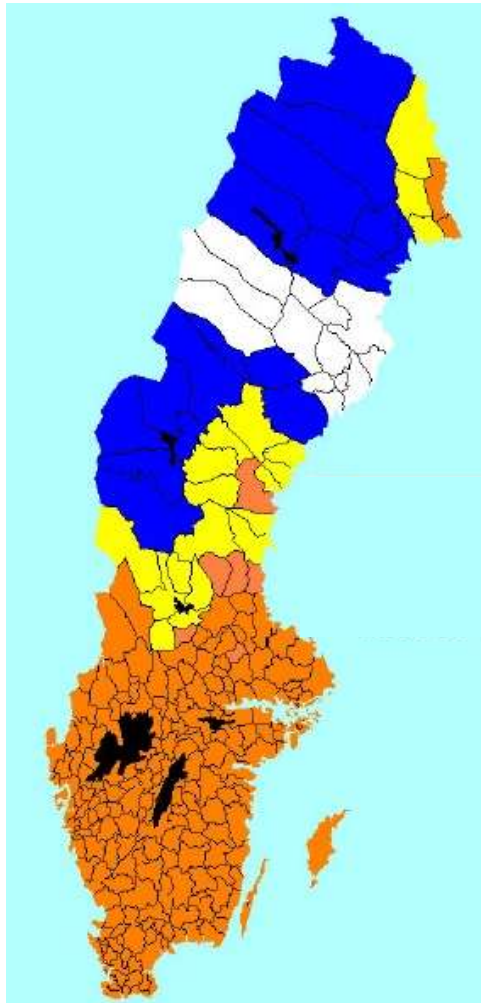
Honey yield per colony

1999-2009



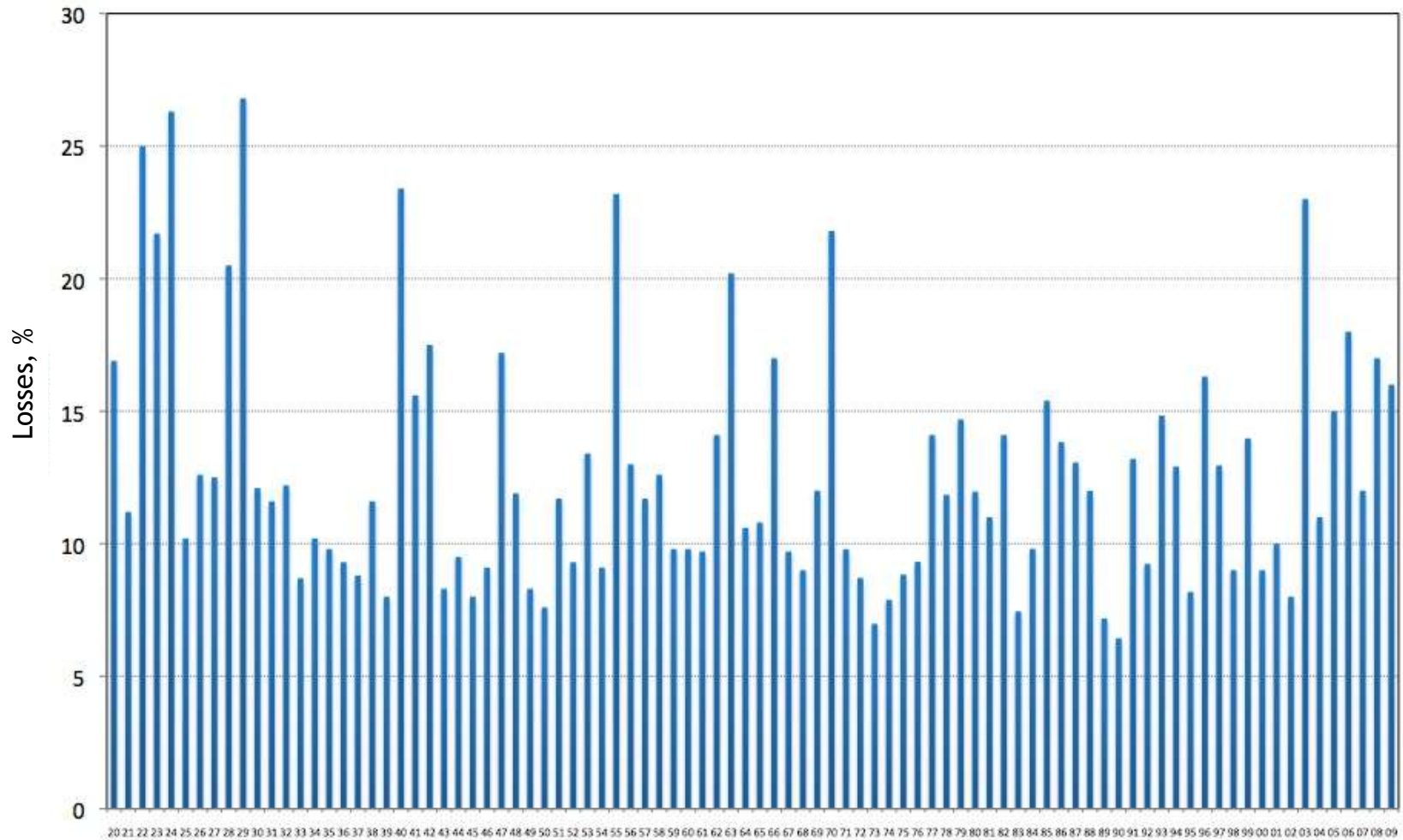
Varroa in Sweden

and colony losses 2009-2010



Colony losses in Sweden

1920-2009



P. Kristiansen, 2010 - Källa: SBR:s årsrapporter



Survey on losses in Sweden

Questionnaire on internet

Beekeepers : 12 000
Colonies: 125 000

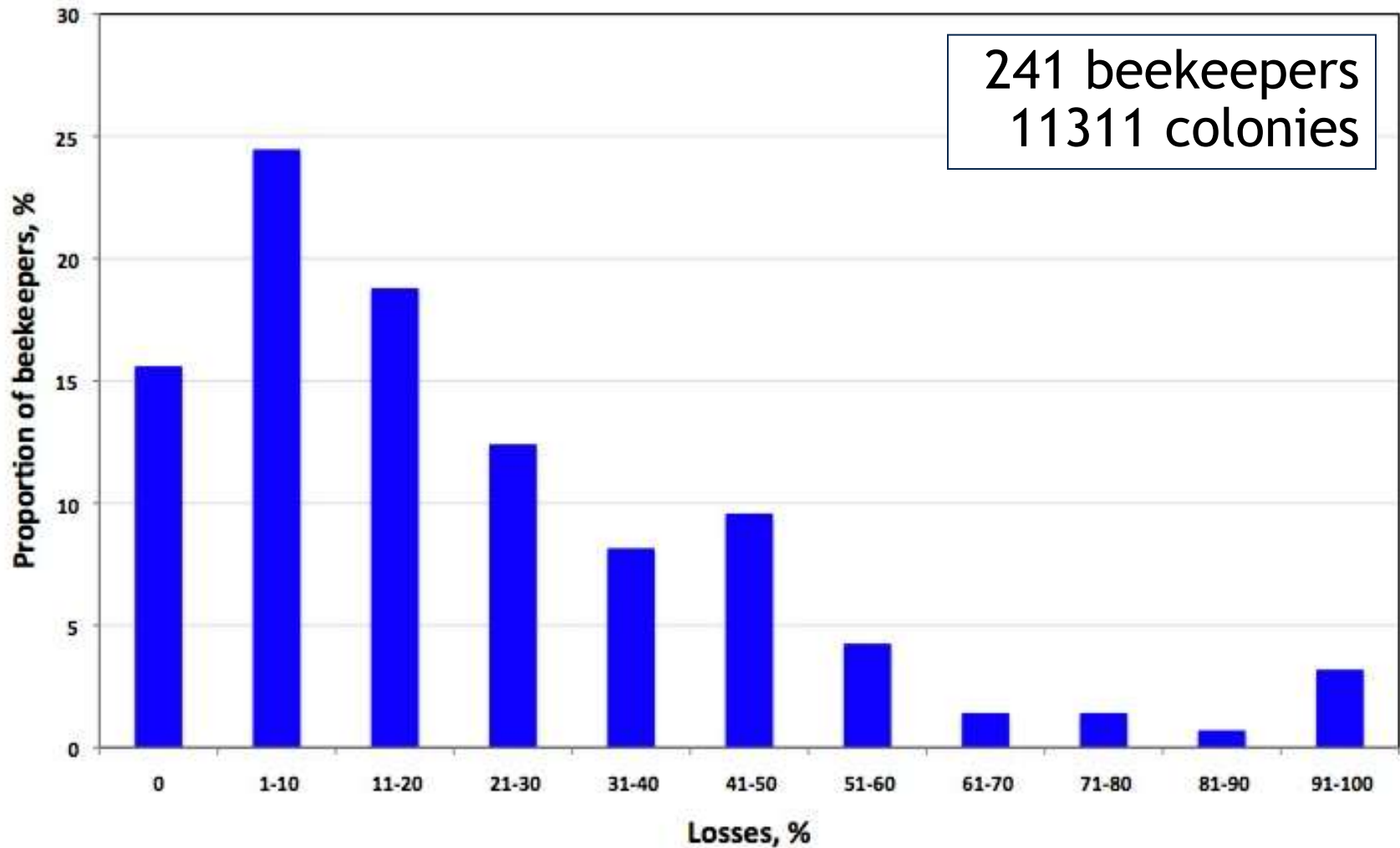
	Beekeepers	Colonies	Total loss, %
2008-2009	565	7354	17,5
2009-2010	751	13598	24,7

One beekeeper lost 570 of his 620 wintered colonies during the winter 2009-2010

If data from his operation is left out the total loss was 21,5 %

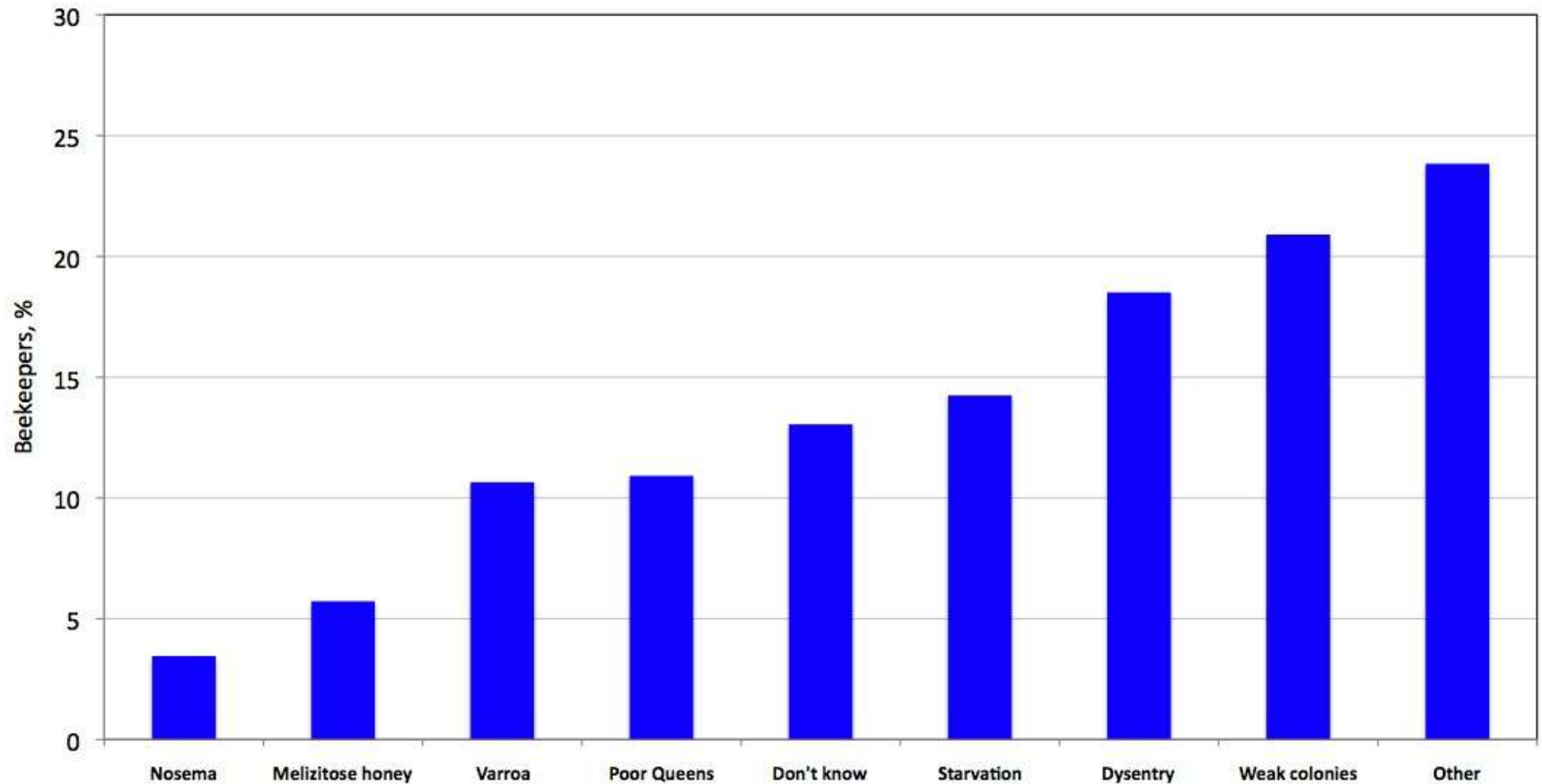
Survey on losses 2009-2010

Beekeepers with 10 or more hives



Major cause for losses

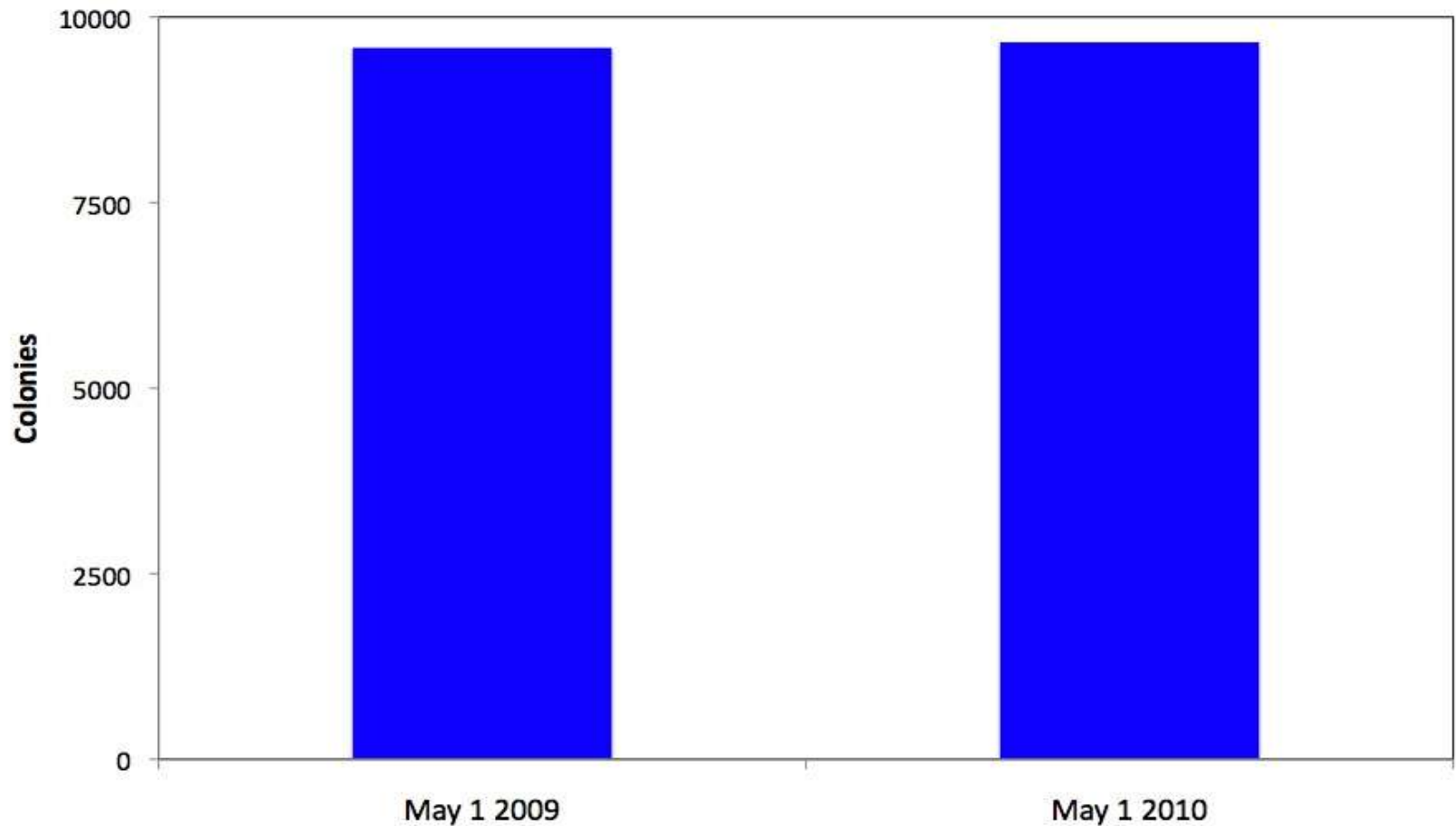
survey 2009-2010



Number of colonies

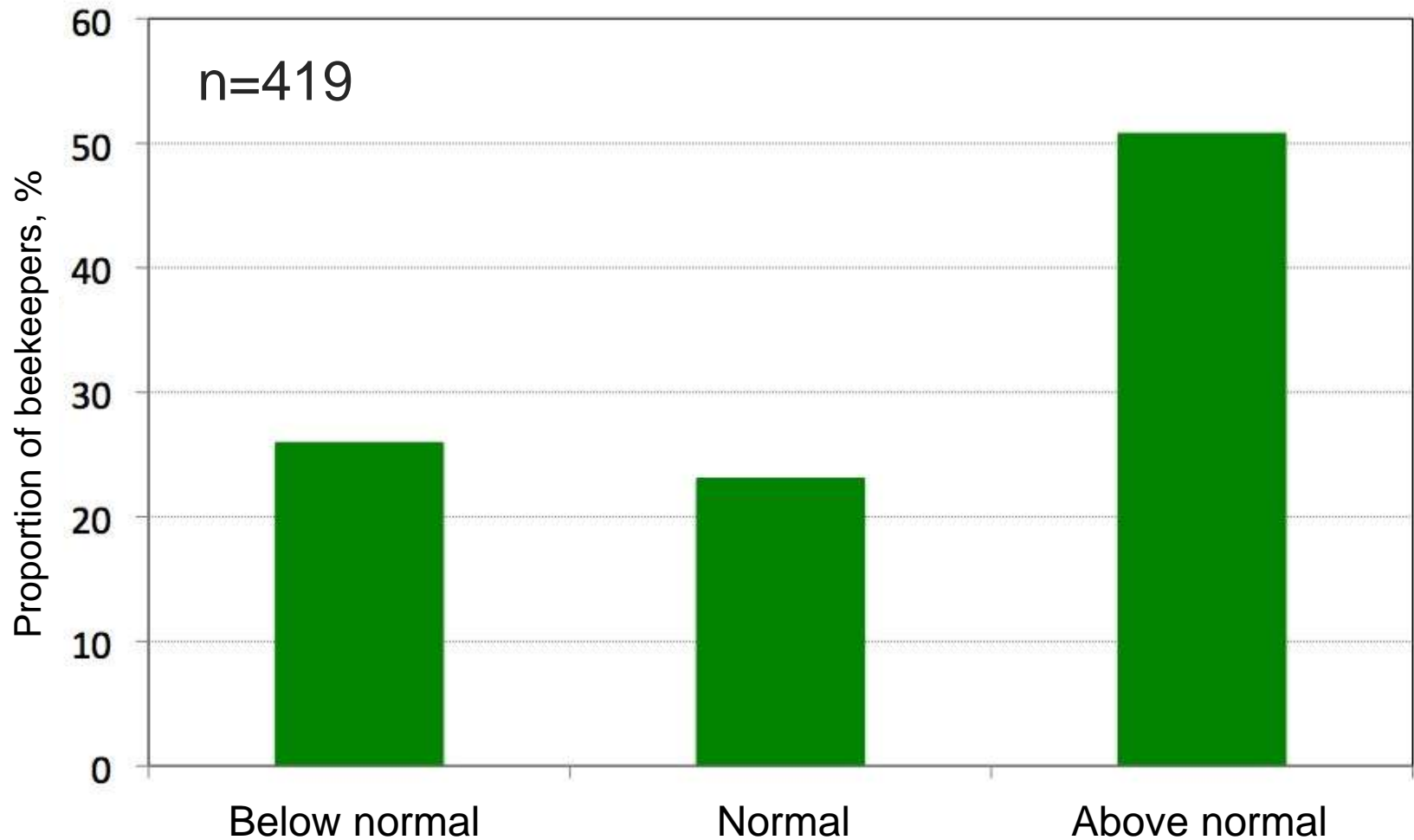
May 1st 2009 and 2010

681 beekeepers

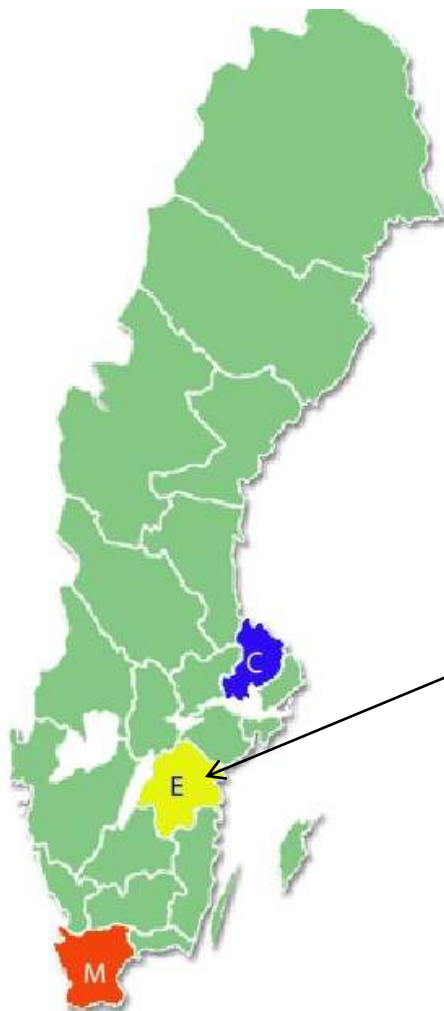


The honey yield

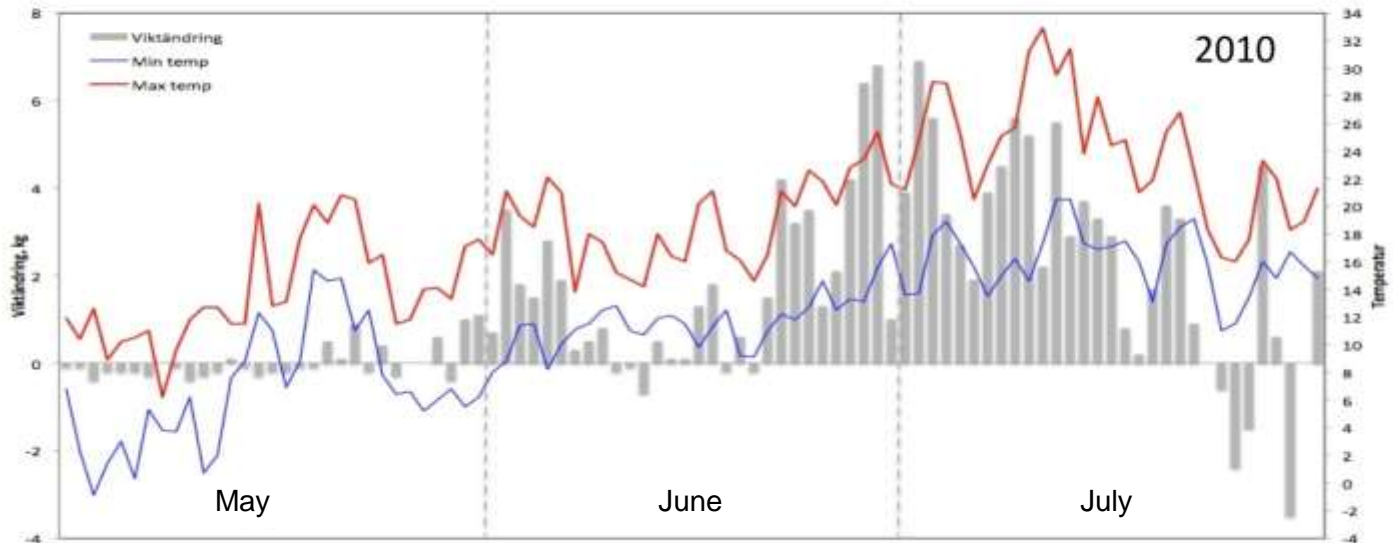
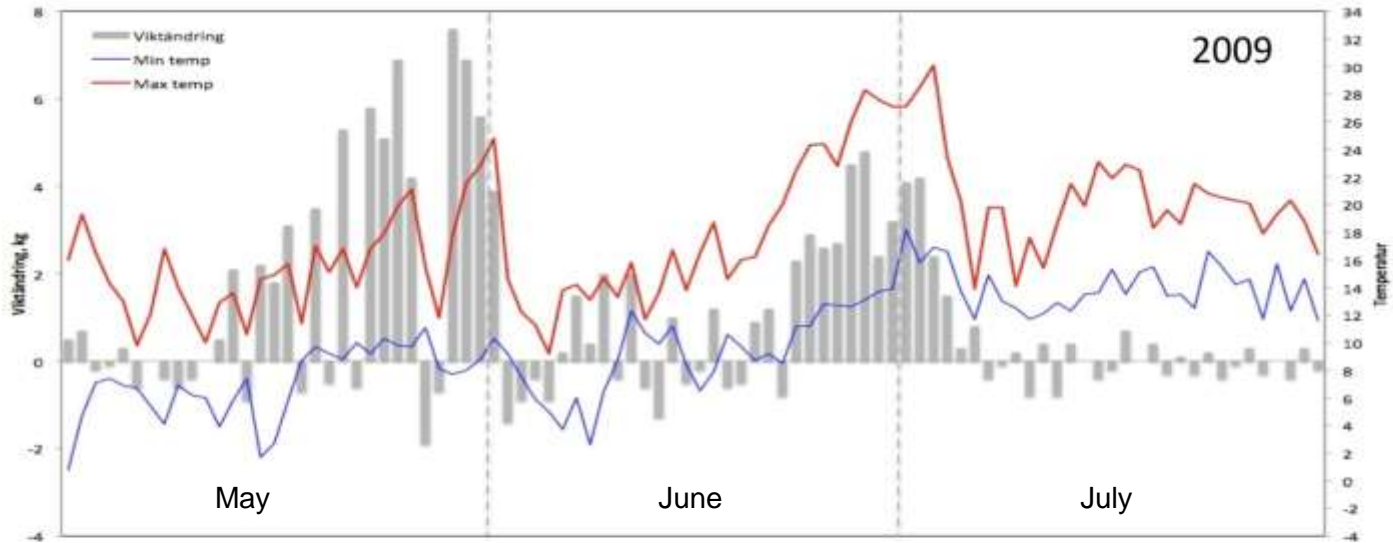
2010



Hive scales



The honey flow



Products against varroa



Apistan

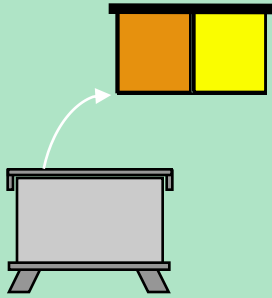


Apiguard

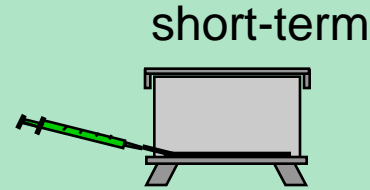
Control concept

dronebrood removal and OA + FA if needed

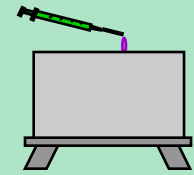
Removal of dronebrood



FA



OA



May

June

July

August

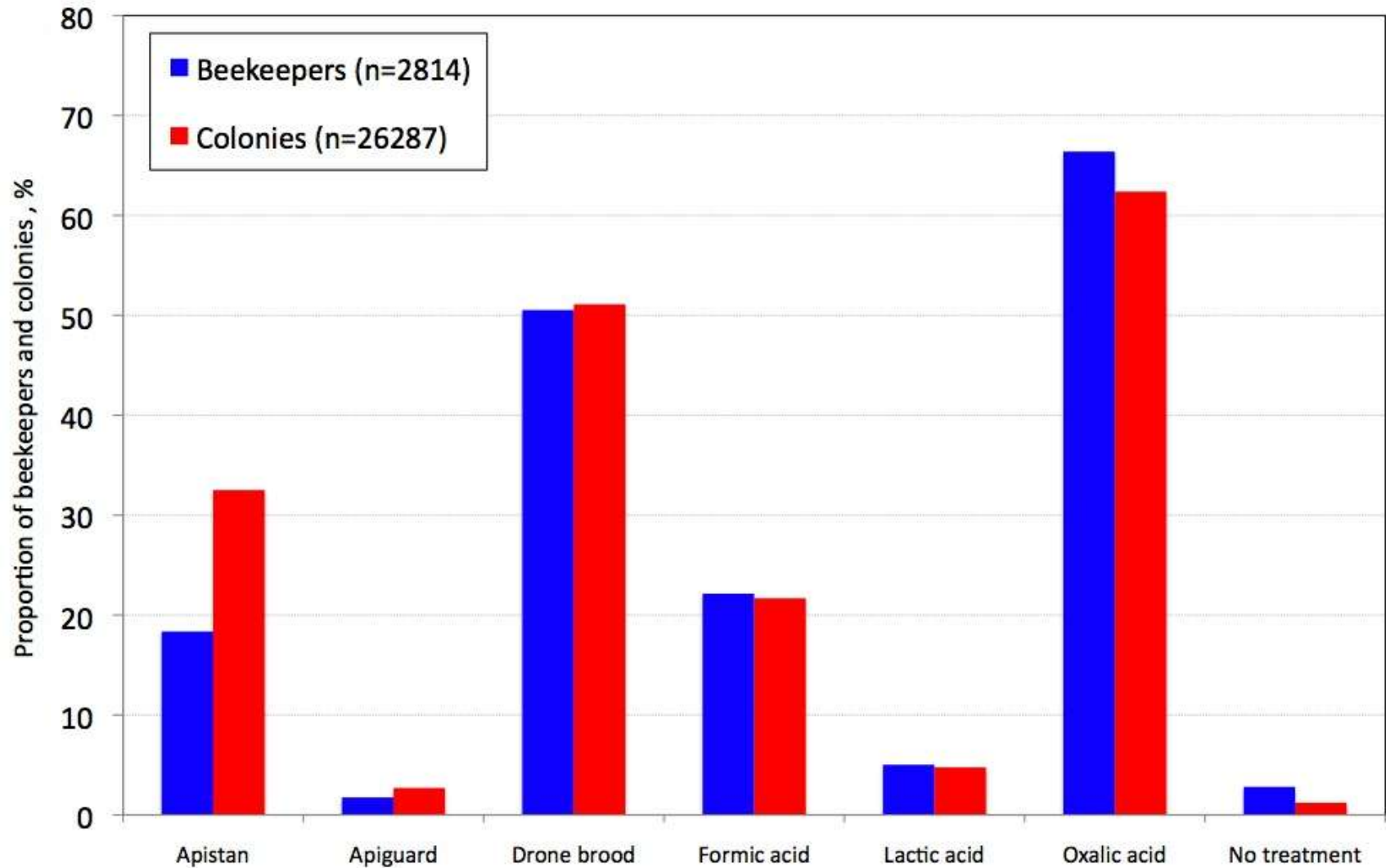
September

October

Natural mite drop

5-10 mites per day

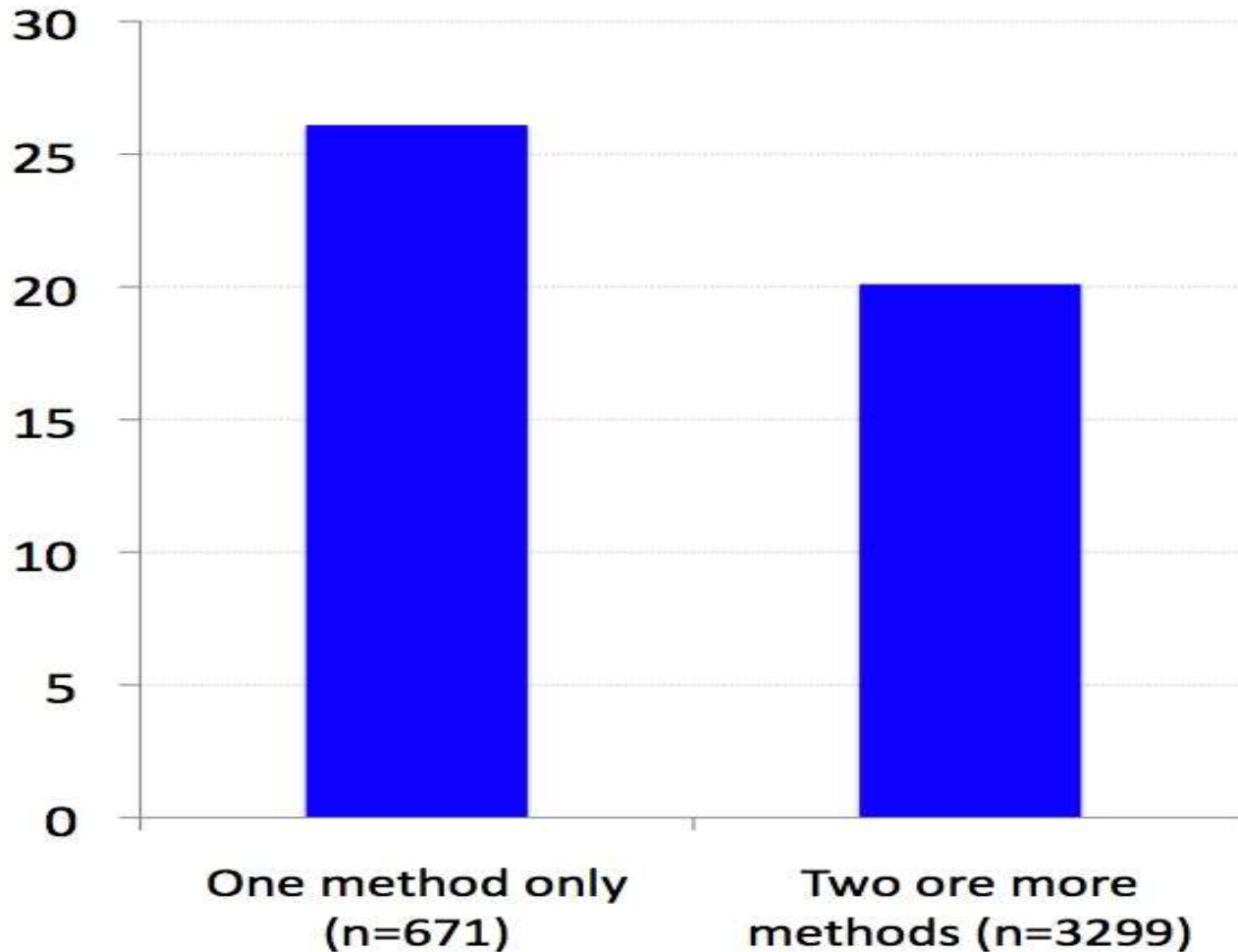
Varroa control 2010





Colony losses

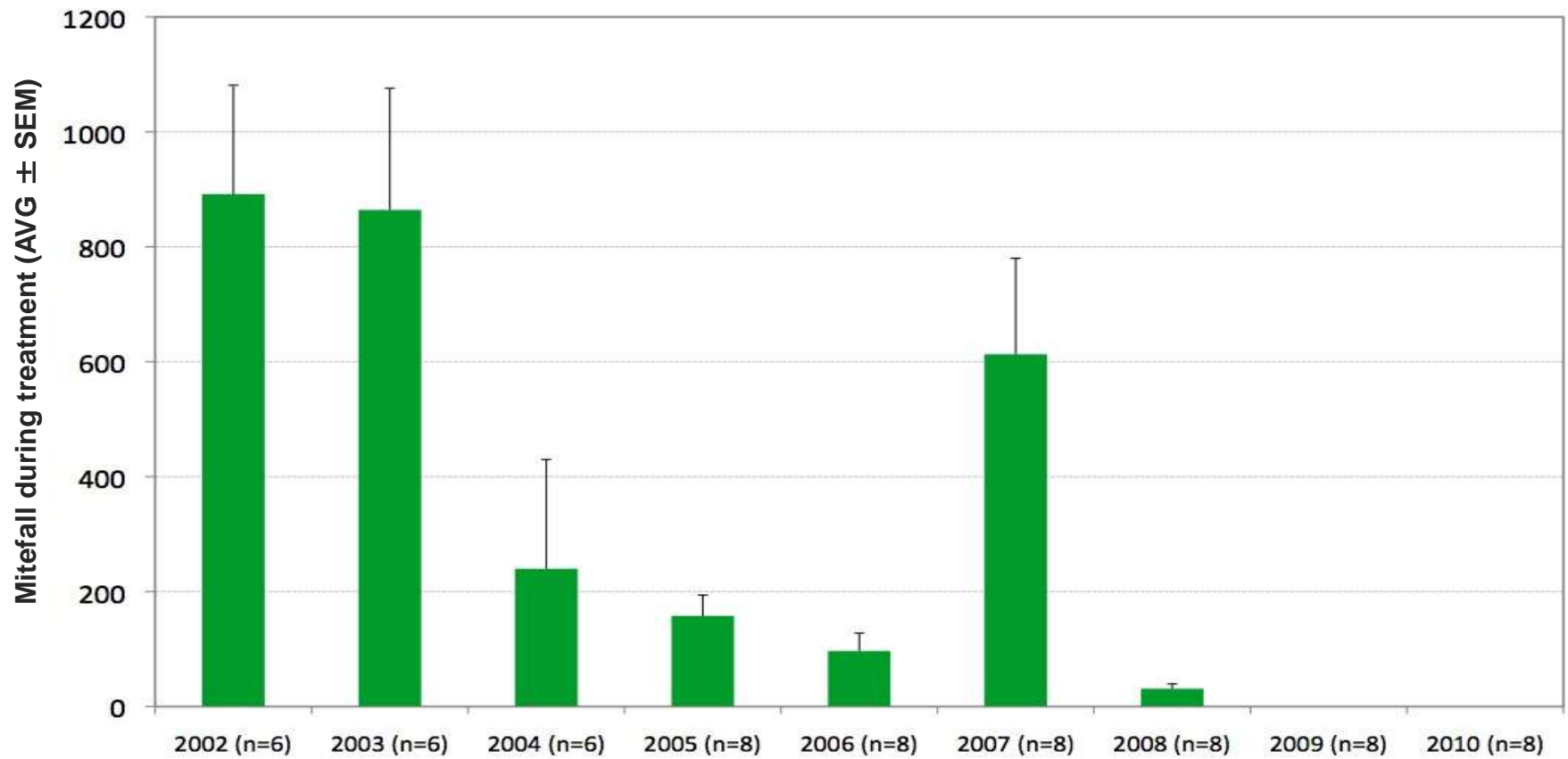
in relation to number of methods against Varroa
2008/2009



Observation apiary

Hästveda in Skåne

Drone brood removal, formic acid (long term) and oxalic acid



”Bond” project



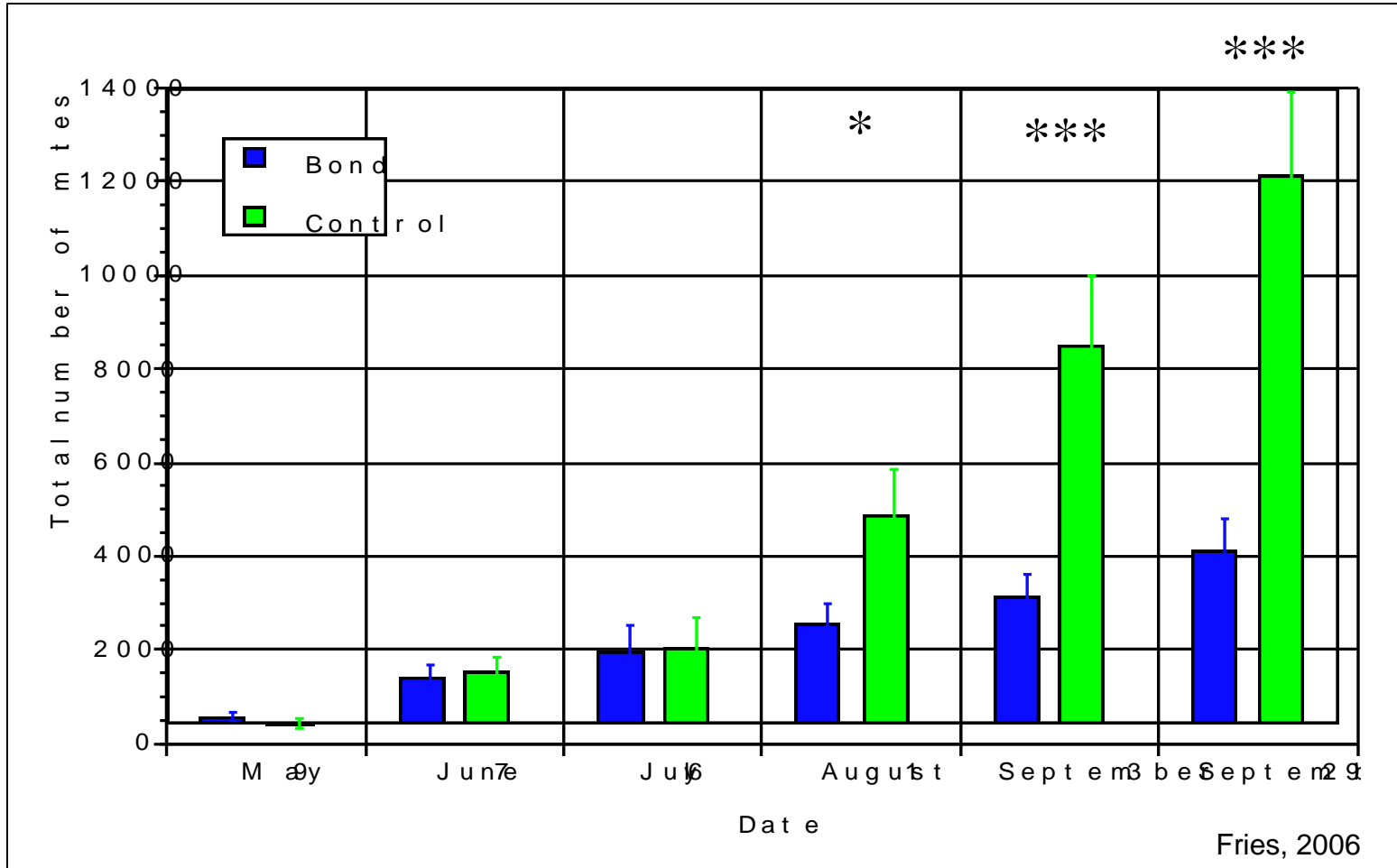
Project started 1999
150 colonies (8 apiaries)
No Varroa control
Project leader Ingemar Fries



Preben Kristiansen, Feb 2010

Results from test on Gotland

- mite population dynamics



There is good evidence for a slower mite population increase in Bond colonies compared to controls







Preben Kristiansen, Feb 2011



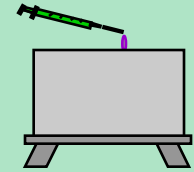
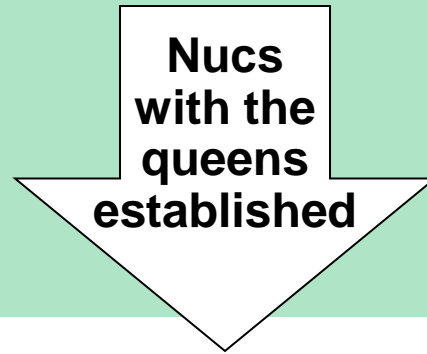
On mainland Sweden: 7 apiaries with queens from the Bond-project on Gotland

- 8 colonies with Bond-queens**
- 8 colonies with control queens**

Test of queens for Varroa tolerance Plan

2006 (1st year)

OA



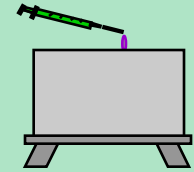
| May | June | July | August | September | October |



Test of queens for Varroa tolerance Plan

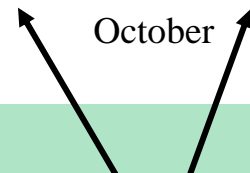
2007 and 2008

OA



| May | June | July | August | September | October |

Sample of at least 100 bees

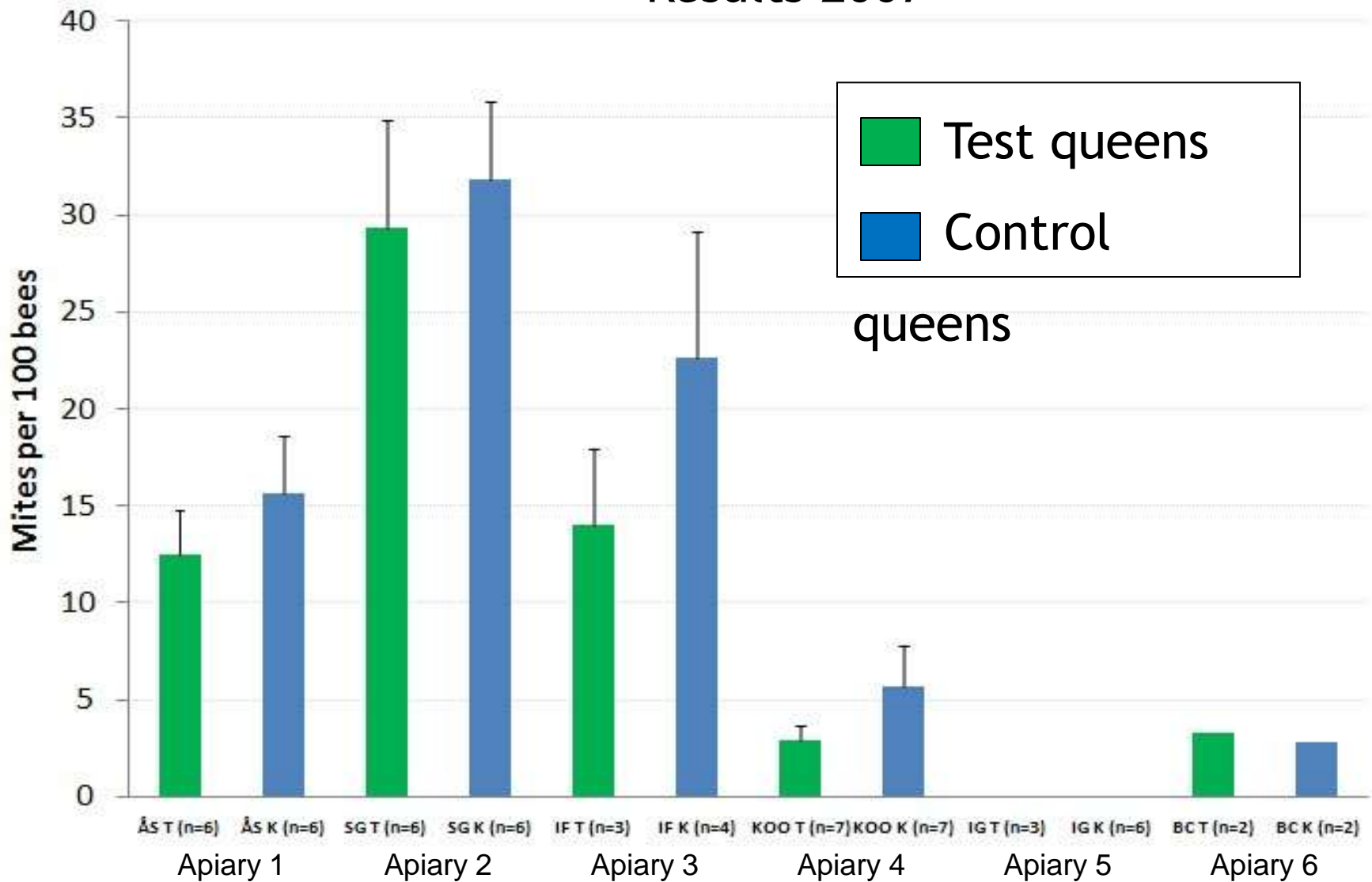




Preben Kristiansen, Feb 2011

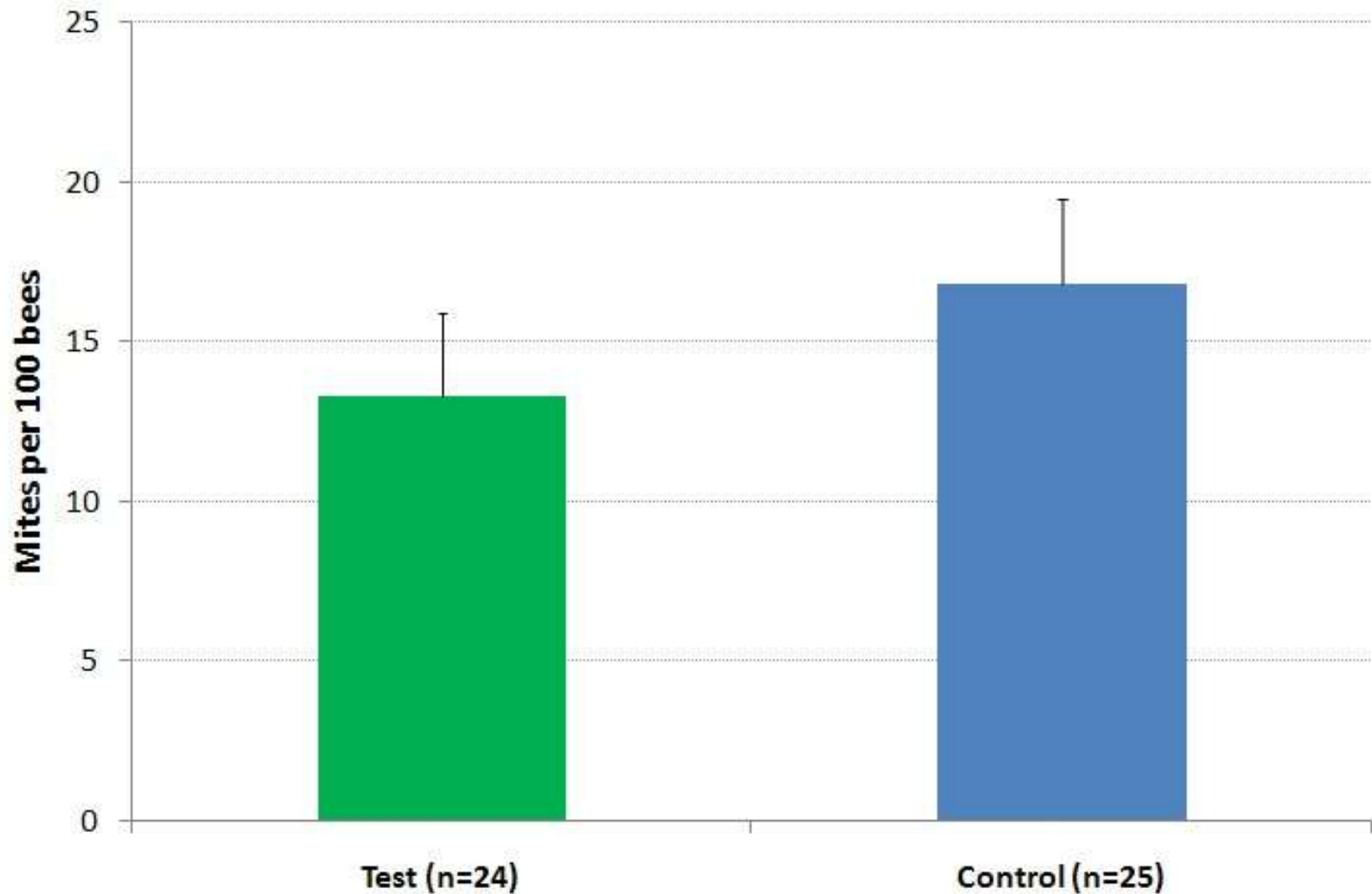
Test of queens for Varroa tolerance

Results 2007



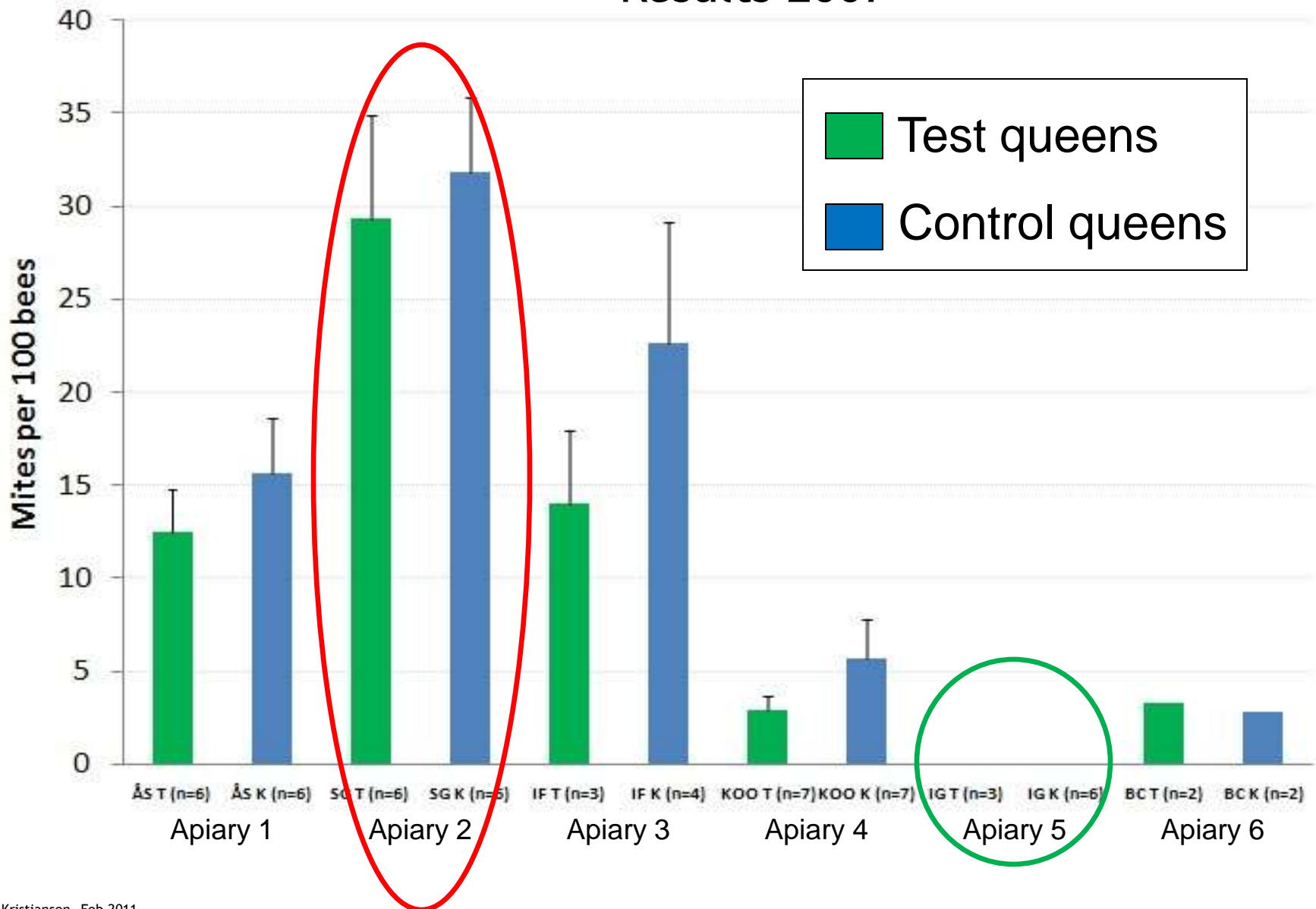
Test of queens for Varroa tolerance

Results 2007



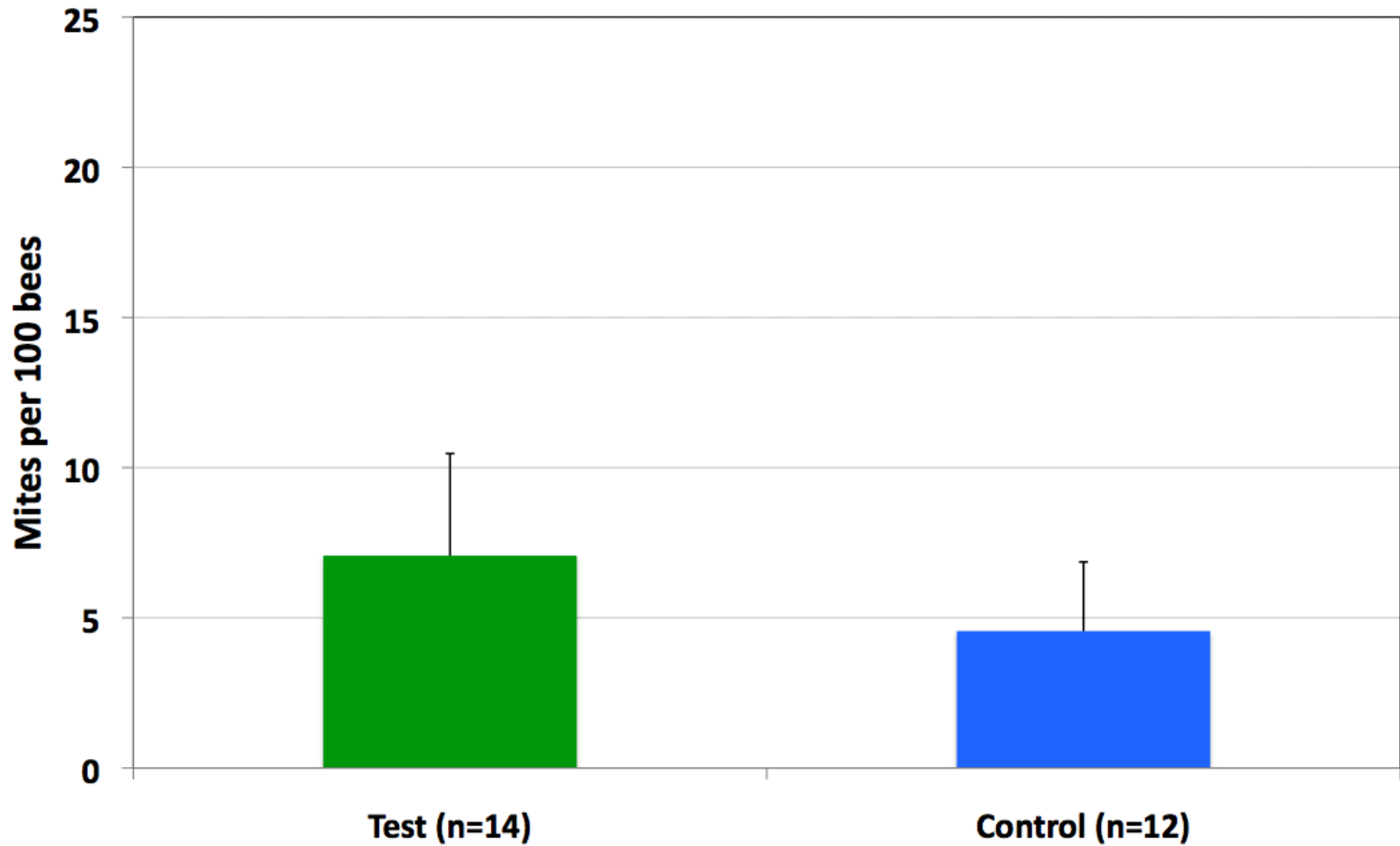
Test of queens for Varroa tolerance

Results 2007



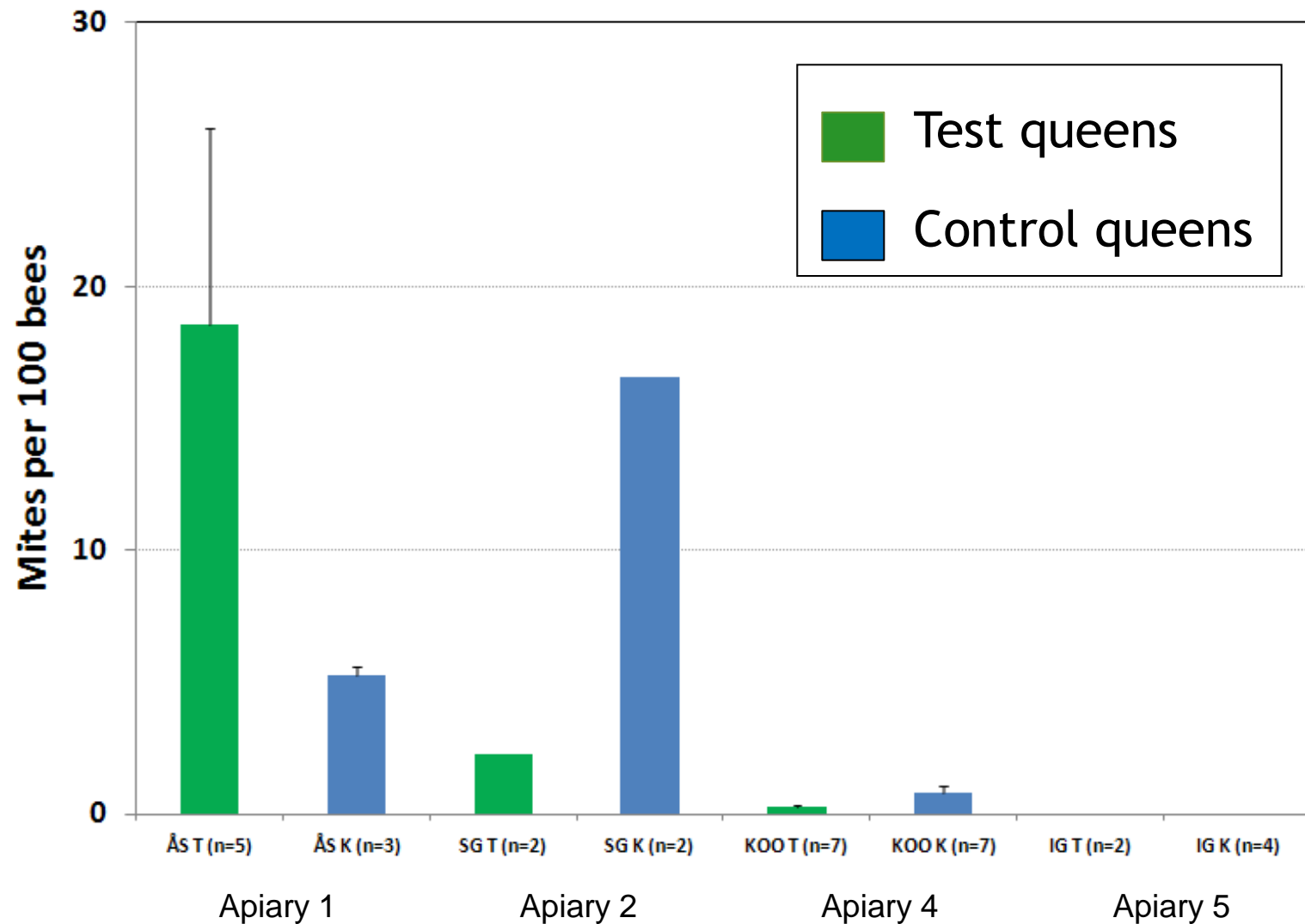
Test of queens for Varroa tolerance

Results 2008



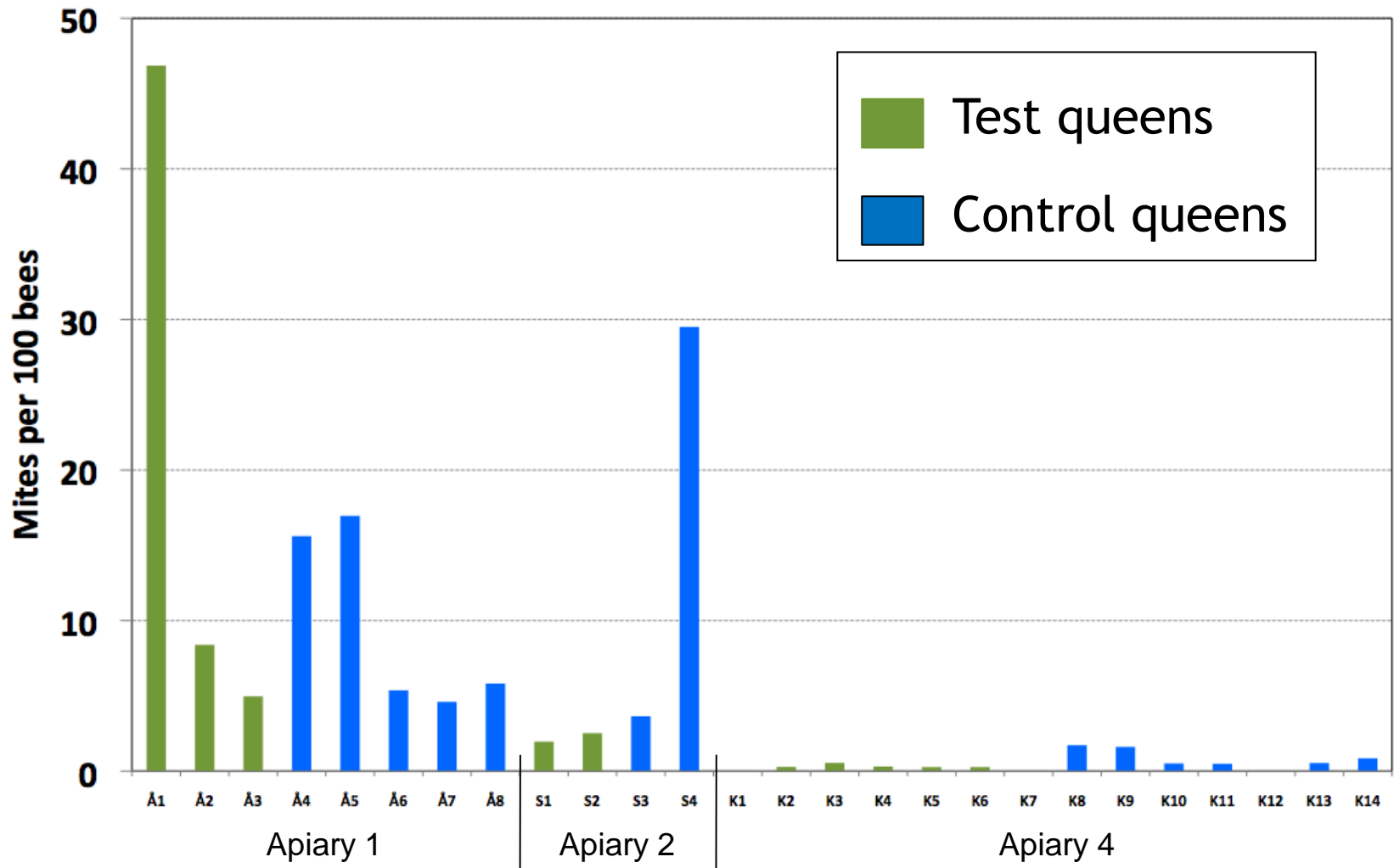
Test of queens for Varroa tolerance

Results 2008



Test of queens for Varroa tolerance

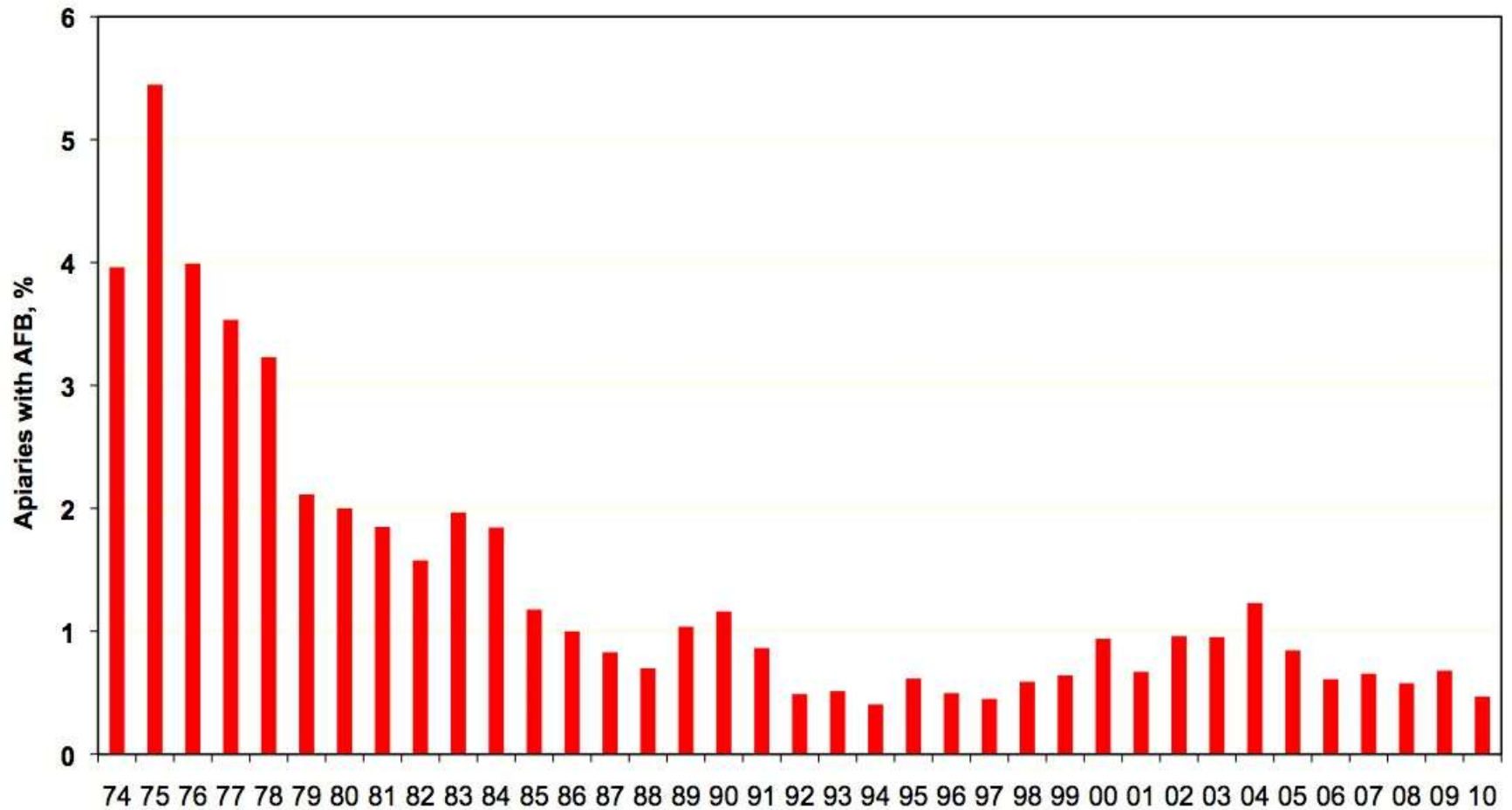
Results 2008



Some colonies are still surviving



American Foulbrood i Sweden 1974-2010



Samples from apiaries with high and low mortality

2009

Low mortality

< 12 % (0 - 12 %)

- 10 beekeepers
- 21 apiaries
- 27 samples

High mortality

>14 % (14 - 40 %)

- 5 beekeepers
- 9 apiaries
- 10 samples



Swedish Board of Agriculture and Swedish University of Swedish University of Agricultural Sciences

Samples from apiaries with high and low mortality

2009

The bees analyzed for:

Varroa

Tracheal mite

Nosema (both species)

Paenibacillus larvae (AFB)

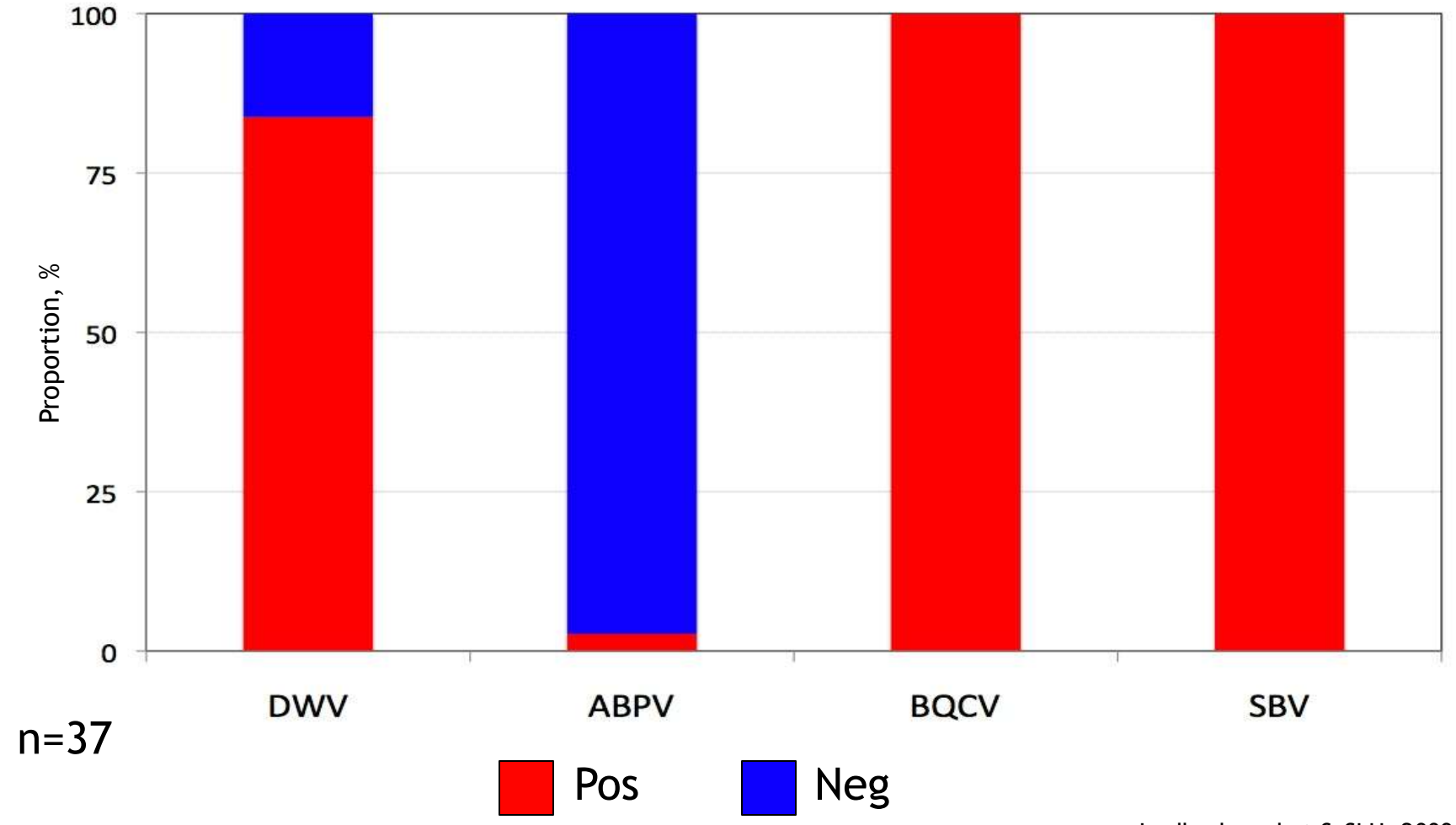
Melissococcus plutonius (EFB)

Virus: DWV, ABPV, BQCV, SBV, IAPV, KBV, SPV, CBPV, VaDv1, VdMLV





Virus in samples from apiaries with high and low mortality



Other pathogens in samples from apiaries with high and low mortality

Tracheal mite:	0
Nosema (both species):	1
<i>Paenibacillus larvae</i> (AFB):	4 (4 apiaries, 2 beekeepers)
<i>Melissococcus plutonius</i> (EFB):	0
Virus:	
IAPV, KBV, SPV, CBPV, VaDv1, VdMLV:	0



Jordbruksverket & SLU, 2009

Survey for tracheal mites

2010



The aim was to collect samples from 380 randomly chosen apiaries

262 samples were collected and they were all free from tracheal mite

The rest of the samples are going to be collected in the early spring of 2011

Approx. 100 samples are going to be analysed for a number of other pathogens





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