

Queen breeding, my own breeding and alternatives.

- Fully professional beekeeping.
One employee in the main season.
- Beekeeping with breeding as the centerpoint.
- 350 colonies, thereof 200 with island mated queens.
 - Runs my own island mating station.
 - Buckfast breeder.

Buckfast breeding – a 100 year old way of breeding.

- Founded by Broder Adam, as a consequence of a massive outbreak of disease.
- Recognizes that no races/subspecies are perfect as production bee.
- Exploit the forces, and eliminate the weaknesses.
- Always selection on relative big sistergroups.
- No compromises must be accepted.
- Effective, but not a simple way of breeding.
- Must be adapted to local conditions and opportunities.

Buckfast breeding in Danmark today.

- The starting point is still the same, but the world is a dynamic place to live.
- Environment, and access to breeding material, have changed.
- Hygienic behaviour, and resistance to disease, has become top priority.
- New technical options, and new knowledge in general.

Breeding parameters of today.

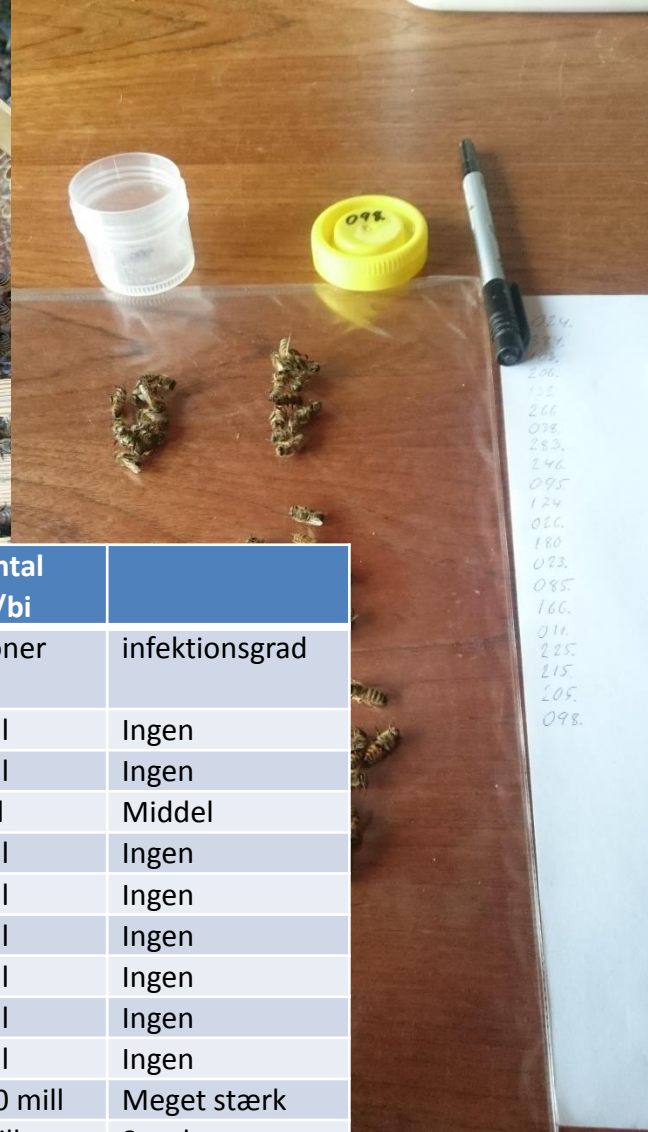
Primary:

- Swarming – zero tolerance on swarming.
- Calmness – only a minimum use of smoke is accepted.
- Behaviour on the comb – uneasy bees are a time robber.
- Honeyyield – most important economical parameter.
- Nosema test – zerotolerance on breeders.
- Test for hygienic behaviour (freezing test) – Stop test, who can cull out even elite breeders...

Secondary:

- Comb building.
- Propolis.
- Personal preferences.

Nosema test.



			Antal sporer	Gns. Antal sporer/bi	
Analyse nr.	Stade nr.	Linie	På skærm	1 millioner	infektionsgrad
1	008	177	0	0-½ mill	Ingen
2	009	139	0	0-½ mill	Ingen
3	015	016	5,0	2-5 mill	Middel
4	020	ST-214	0	0-½ mill	Ingen
5	022	058	0	0-½ mill	Ingen
6	028	172	0	0-½ mill	Ingen
7	031	160	0	0-½ mill	Ingen
8	048	172	0	0-½ mill	Ingen
9	050	016	0	0-½ mill	Ingen
10	063	NB-069	12,0	Over 10 mill	Meget stærk
11	066	SI-014	7,0	5-10 mill	Stærk

Hygienic behaviour in practical life.



Hygienic behaviour on paper.

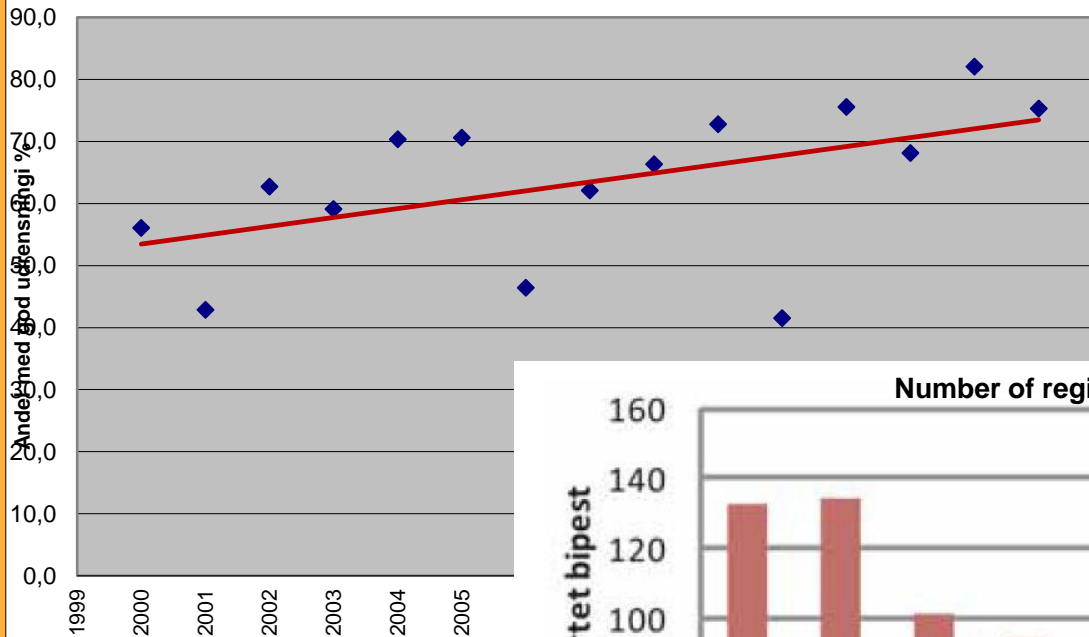
HYG-test (combined 24/48 hours)

Dato: 24-05-2016

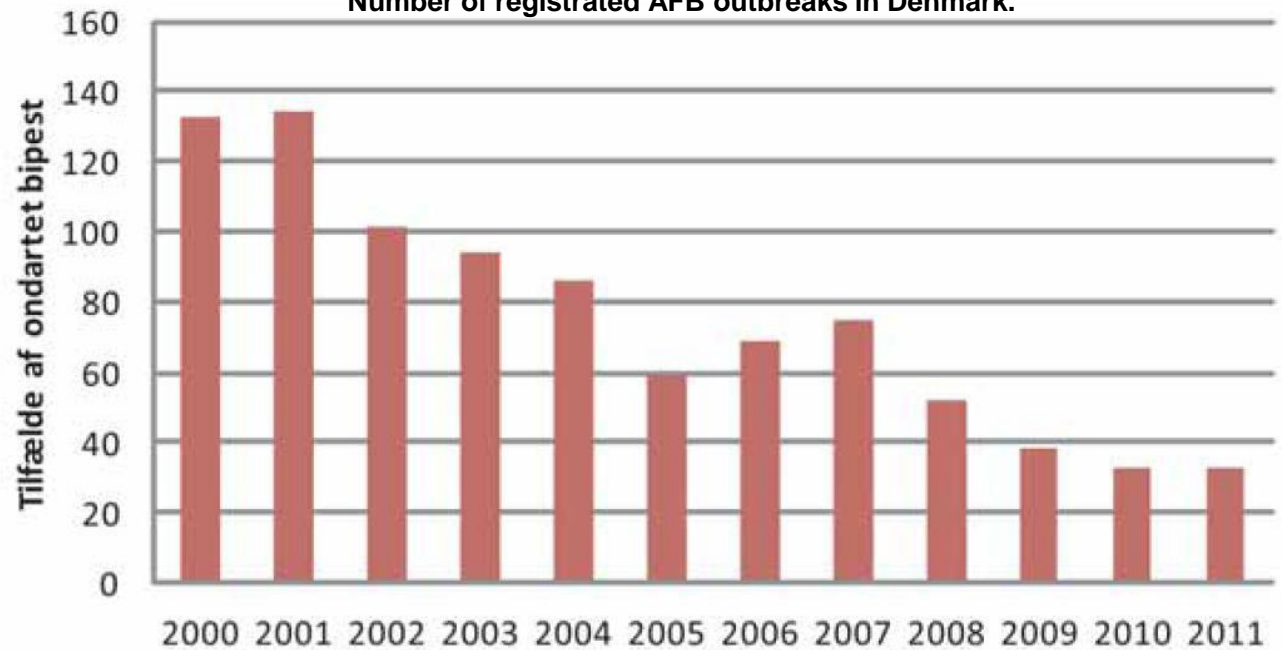
A	B	C	D	E	F	H	I			
Queen no.	Linie	Apiary	Total number of cells	Empty cells	Test cells	Fully cleaned	Started cleaning	Strikt 24 hours	Liberal (48 h.)	
			200		;=B-C			;=E/D	;=G/D	
1	134	027	Alstrup	200		200	180	14	90%	97%
2	359	050		200		200	200		100%	100%
3	266	261		200		200	150	36	75%	93%
4	203	217	Drivhuset	200		200	160	16	80%	88%
5	247	217		200		200	166	20	83%	93%
6	200	197		200		200	174	26	87%	100%
7	115	197		200		200	198	2	99%	100%
8	014	197		200		200	200		100%	100%
9	151	197		200		200	182	14	91%	98%
10	033	009	Ersted	200		200	200		100%	100%
11	389	009		200		200	200		100%	100%
12	346	009		200		200	200		100%	100%
13	246	148	Hjedsbæk	200		200	50	40	25%	45%
14	225	229		200		200	50	40	25%	45%
15	260	009		200		200	200		100%	100%

Hygienic behaviour and AFB.

Percentages of colonies with +80 hygienic behaviour.



Number of registered AFB outbreaks in Denmark.



Hygienic behaviour and varroa.

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ORIGINAL RESEARCH ARTICLE

Towards integrated control of varroa: effect of variation in hygienic behaviour colonies on mite population in wing virus incidence

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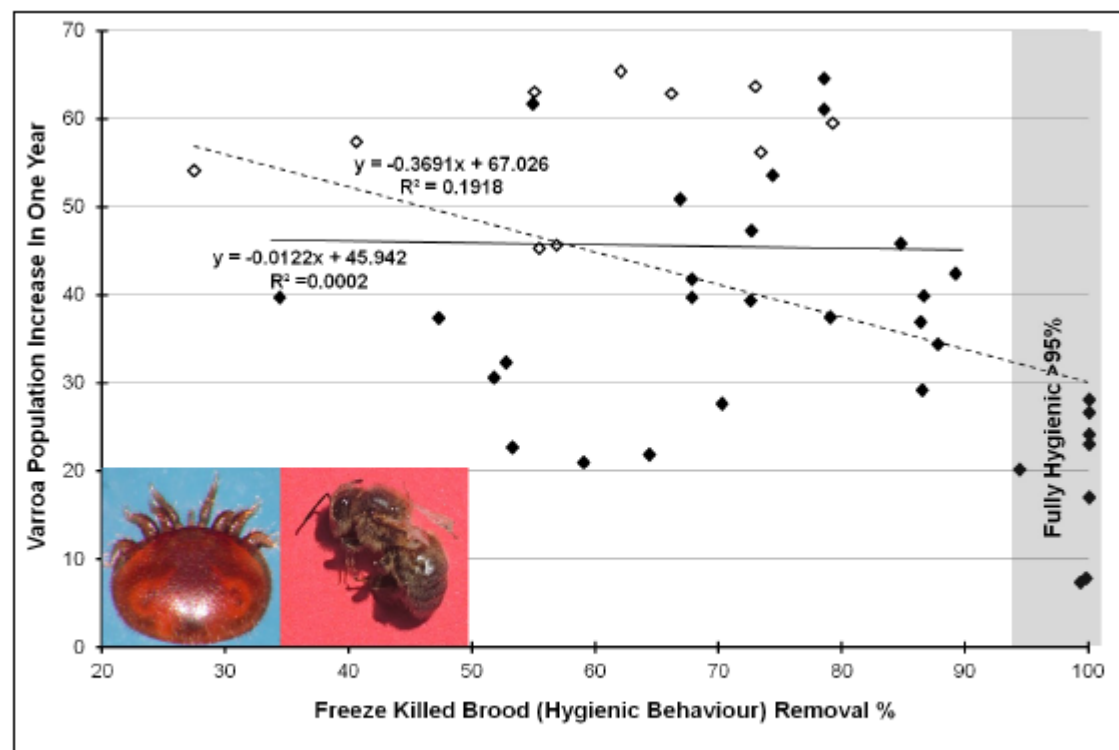


Fig. 1. Proportional increase of varroa population from 12 January to 12 December 2013 in the 42 study colonies as a function of Freeze Killed Brood removal. Colonies with workers showing symptoms of deformed wing virus are shown as open symbols. The photos show (left) an adult female varroa mite and (right) an adult worker bee with shrivelled wings, an overt symptom of DWV.

Virus thresholds and hygienic behaviour

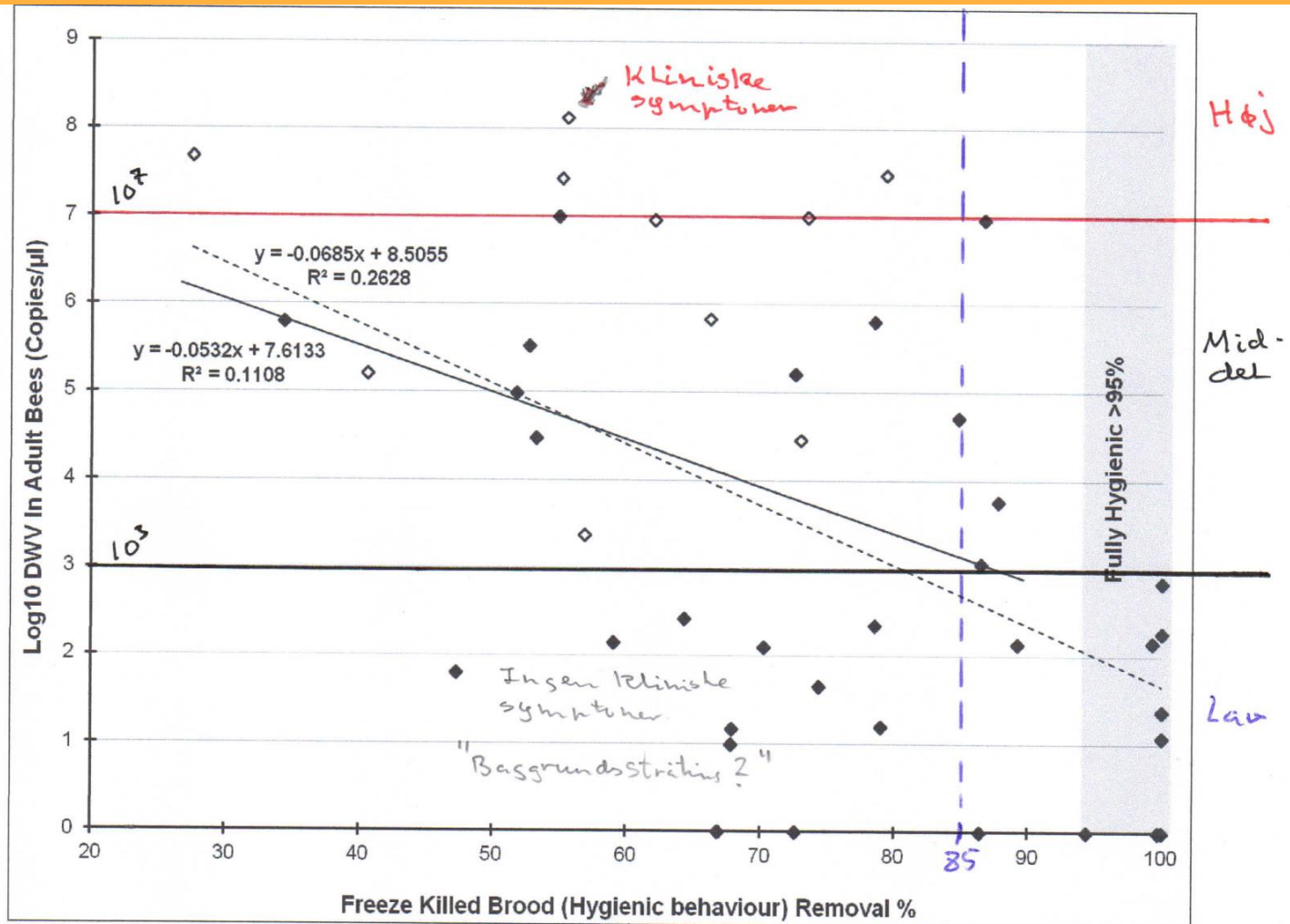


Fig. 2. Number of deformed wing virus RNA copies in adult bee samples collected on 12 December 2013, 11 months after treating with oxalic acid, in the 42 study colonies. Colonies that had some workers with overt symptoms of DWV (shrivelled wings) are shown as open symbols.

Pro's and Con's on Pure race breeding

- + Can be run, and maintained, in a relatively small population (50-100 Colonies).
- + Relatively easy access to new material from other breeders
- Relatively slow progress in the breeding.
- Limited by the traits and characters in the actual race. (some traits are very hard to change, without 'help' from the outside world)
- Needs access to a controlled mating station.

Pro's and Con's on Closed Gene Pool breeding

- + Easy to handle, if you just want to produce queens for yourself, and can accept flaws and errors when they occur.
- + Very robust in relation to genetic degeneration.
- Needs fairly good control of the bee population in the area used for mating.
- Needs a big population (+200), and good area control, to keep the stock stable.

Pro's and Con's on Buckfast breeding

- + Ultimately the way of breeding who gives the fastest progress in breeding.
- + Not limited by the gene resources available in a specific race/subspecies.
- Can only be run successfully with a fairly big stock – own colonies, or in the shape of a 'tight' breeder group.
- Needs access to a controlled mating station, and a good deal of theoretical knowledge – what all serious breeding does...

This is what it's all about 😊

