



HYG

Hygienic Behavior Test (PKB)

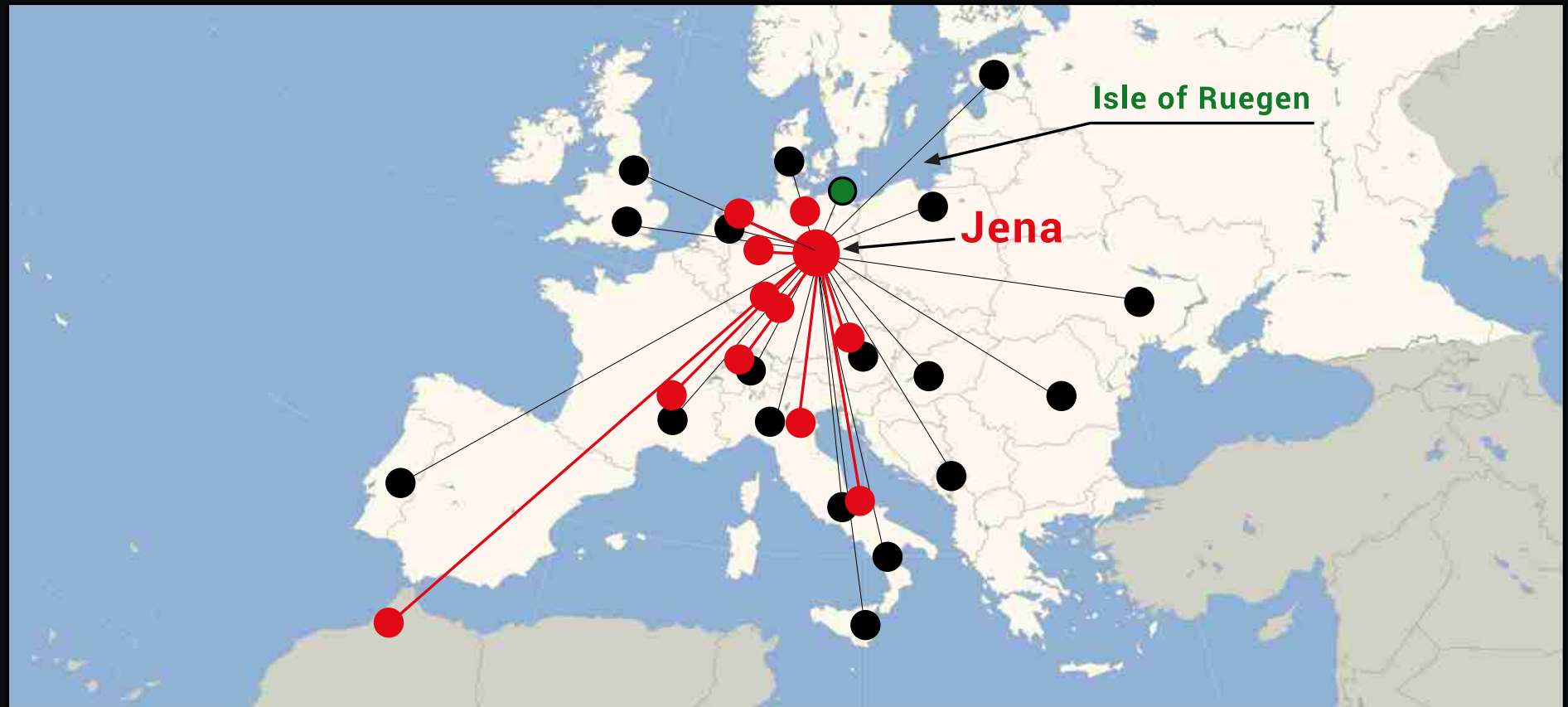


Application and Meaning

Lutz Eggert @ ZOOM 2025

Contacts

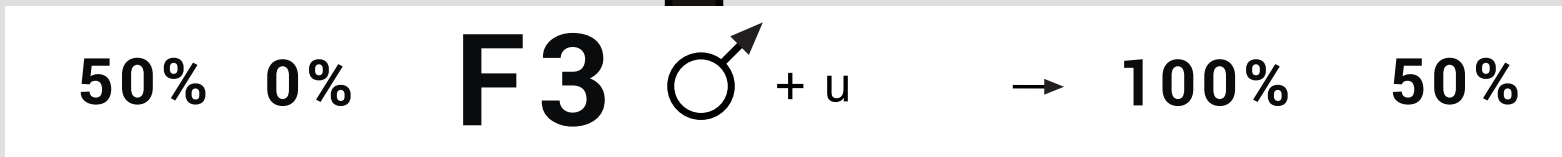
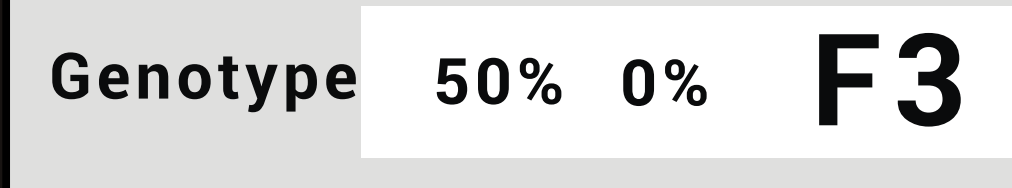
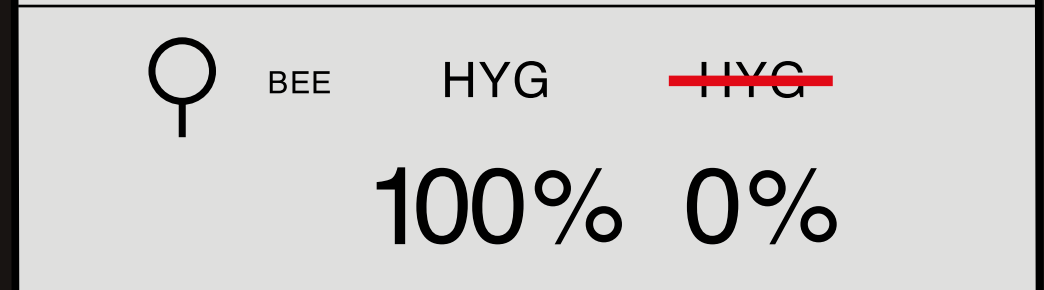
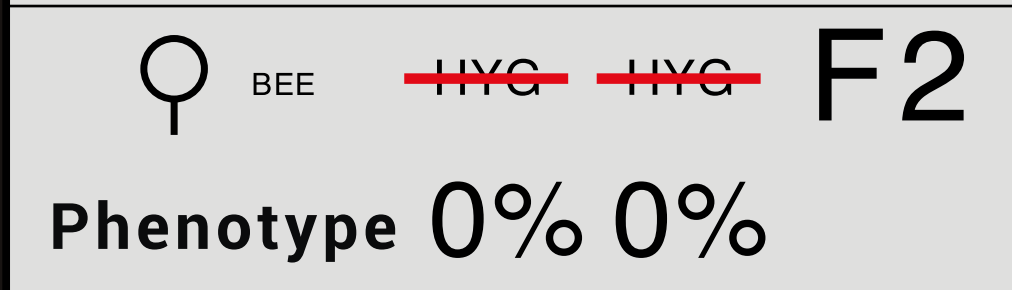
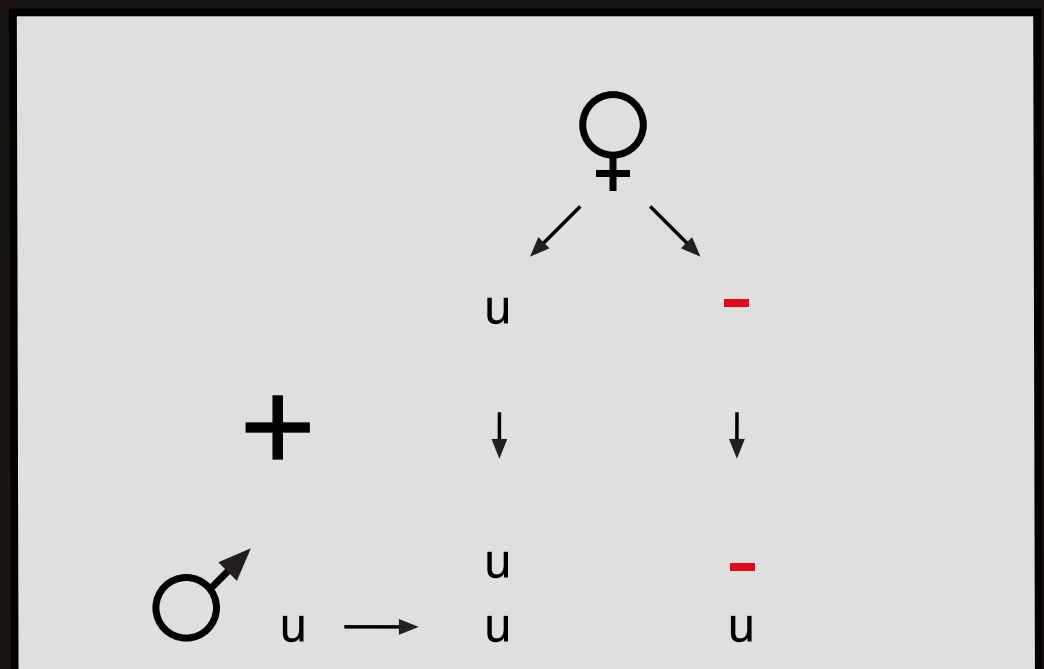
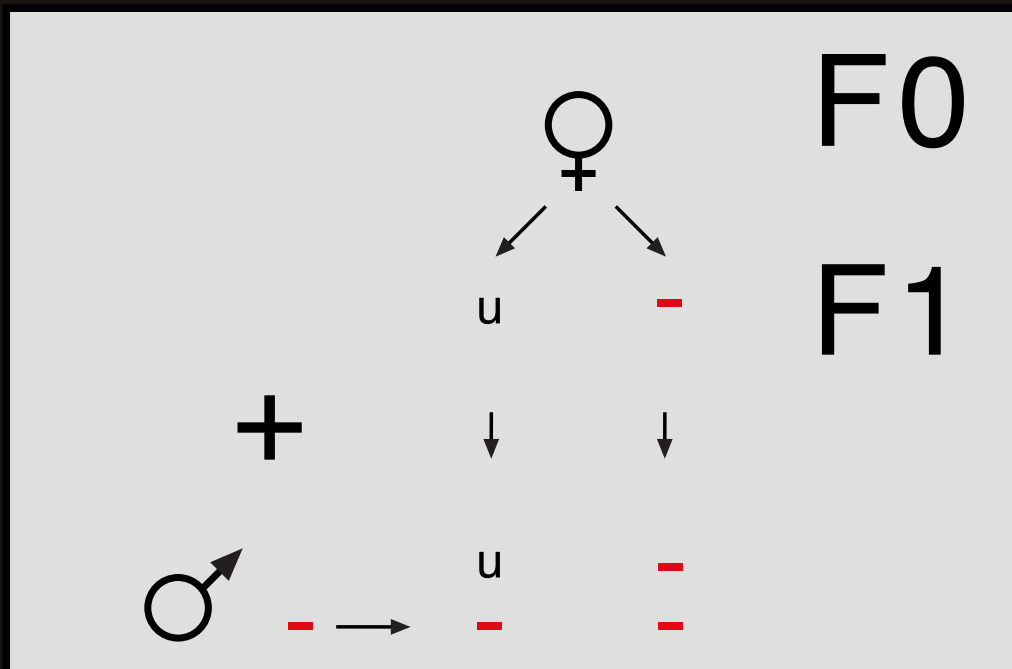
www.pin-test.com



Healthy Bees



Mothers and Fathers - our Responsibility



recessive Inheritance

- no HYG U = HYG

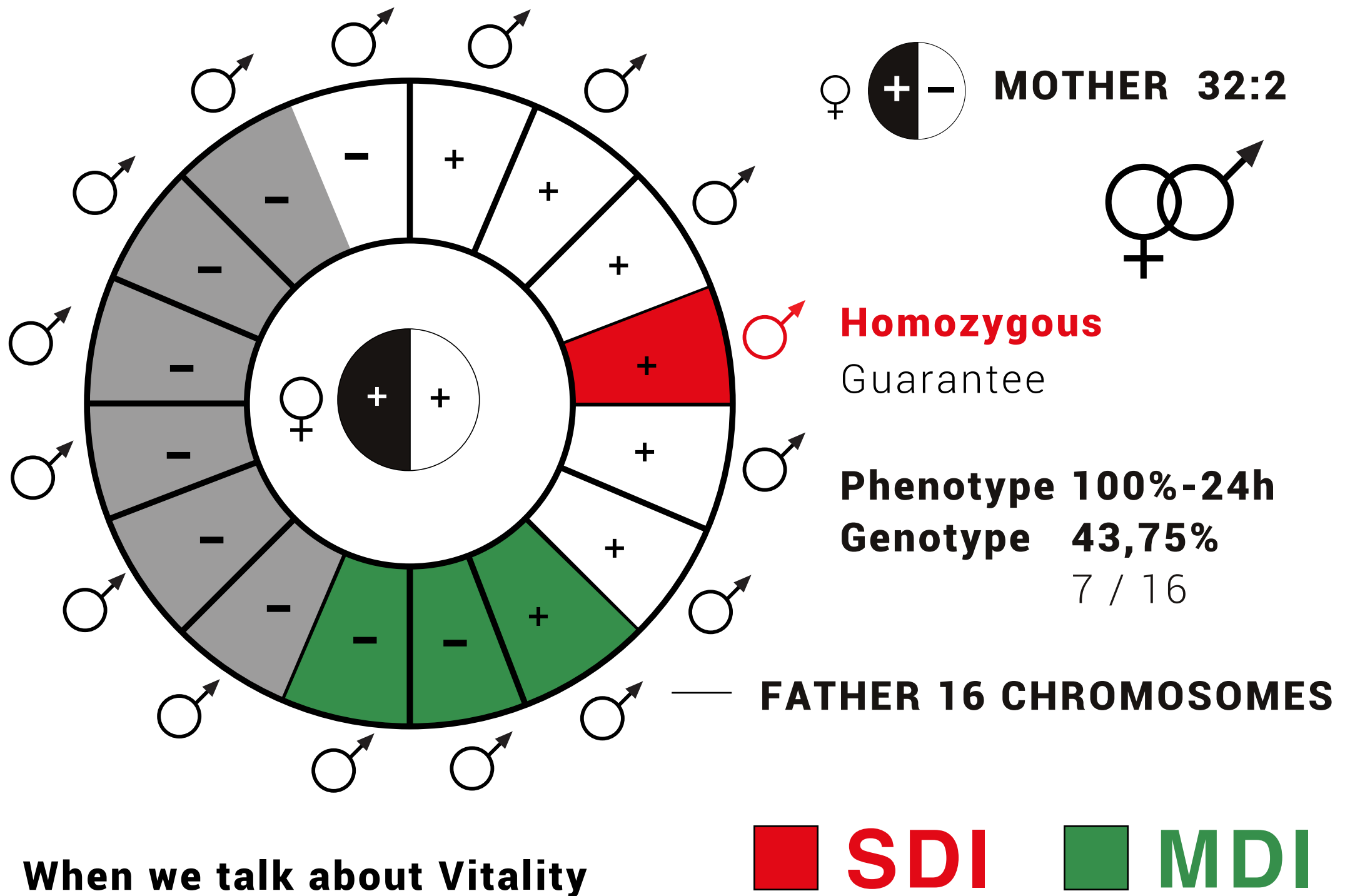


Selection Mothers and **Fathers** - **Mating Stations**
Mating Area or **Instrumental Insemination**

IMPORT



of the Characteristics trough Selection of the
Paternal Side



Meaning of the Test



(HYG+) measurable
Part of ***Social Immunity***

protects the bee colony from Diseases
or **Damage** to the Brood

- American Foulbrood
- Chalkbrood or **Virus Defects**
- **Hypothermia/ Chilling**

Meaning of the Test



Hygienic Behavior

Part of *Varroa Tolerance*

Colonies that can VSH, also have
(+/-) HYG

Attention: Colonies that have HYG
are **not AUTOMATICALLY** with VSH

SMR

VSH

SOV

Recapping

UBO

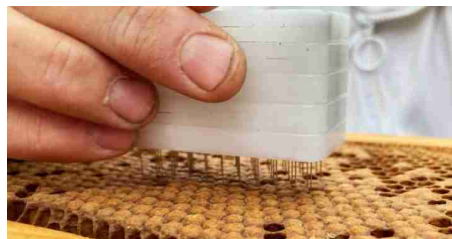
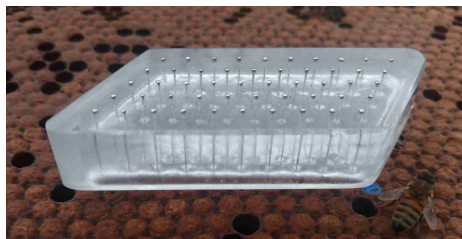
= incl. HYG

Deduction Method

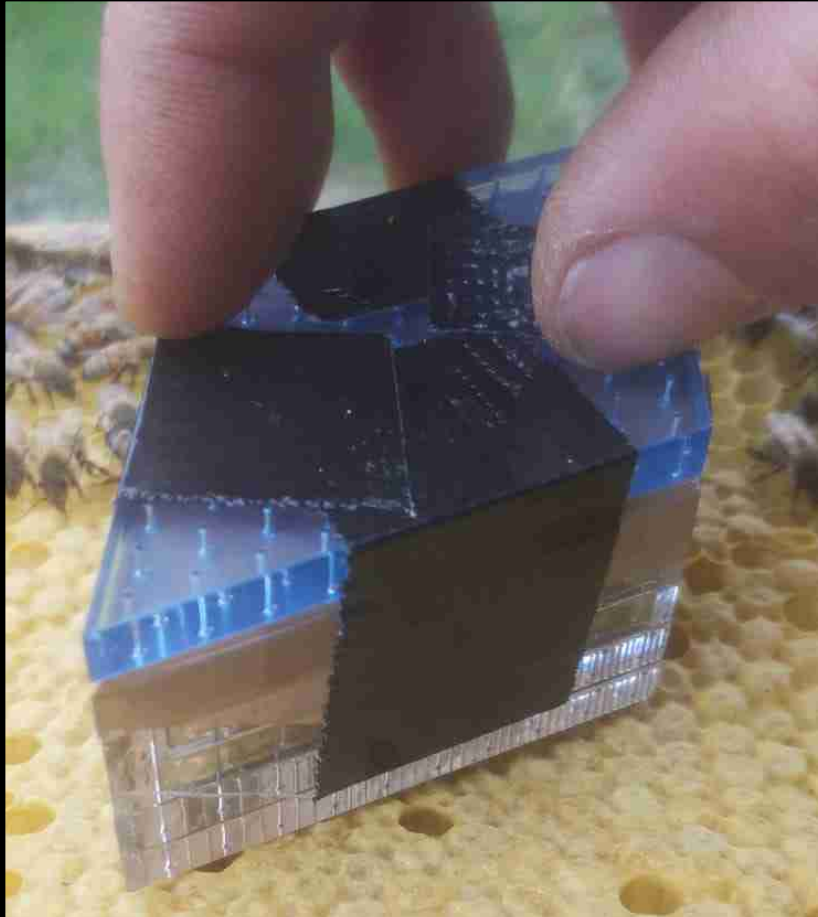


Marker





Influence Factors



Influence Factors



- Strength of the Needles** - Thickness of the Perforation
 - Precision
- Age of the Bees** - 6–20 days old *
- Age of the Pupae** - purple eye
- Ratio - Bee and Brood
- Nectar Flow - positive + negative
- Cleaning Agent - (Gall substances) 75% alc.
- Stress Factors** - **Temperatures (esp. Heat)**
- Varroa Pressure** - Panic Behaviour
- Disease Pressure** - **Lerning Behaviour**

* **Source:** <https://jas.org.pl:81/Age-of-worker-bees-performing-hygienic-behavior-in-a-honeybee-colony,0,213.html>

Influencing Factors



2012 Schoening et al

Evidence for damage-dependent hygienic behavior towards Varroa destructor-parasitised brood ...

Influencing Factors

Originalprobe Beurteilung makroskop.: durchgeführt
20,2 g Bienen wurden in ein Plastikbecher eingesendet.
Am Probengefäßinnenrand Varroamilben.
Zustand der Bienen: o.b.B., nachgewiesen

Originalprobe Varroa-Arten:
Originalprobe Befallsrate: 4,00 %
Originalprobe max. Milbenzahl/ Biene: 1,00

Untersuchung auf Nosema spp.
Originalprobe Nosema-Arten: nicht nachgewiesen

Probenummer: 20TRD0404-003
Externe Probenkennung: 155
Haltungsart: Nutztier
Abgangsursache: Verendet

Molekularbiologische Untersuchungen

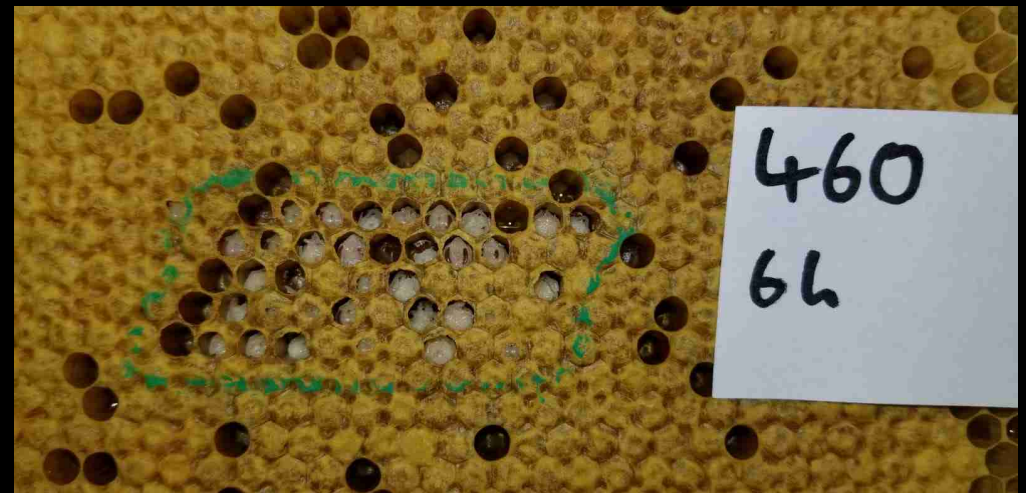
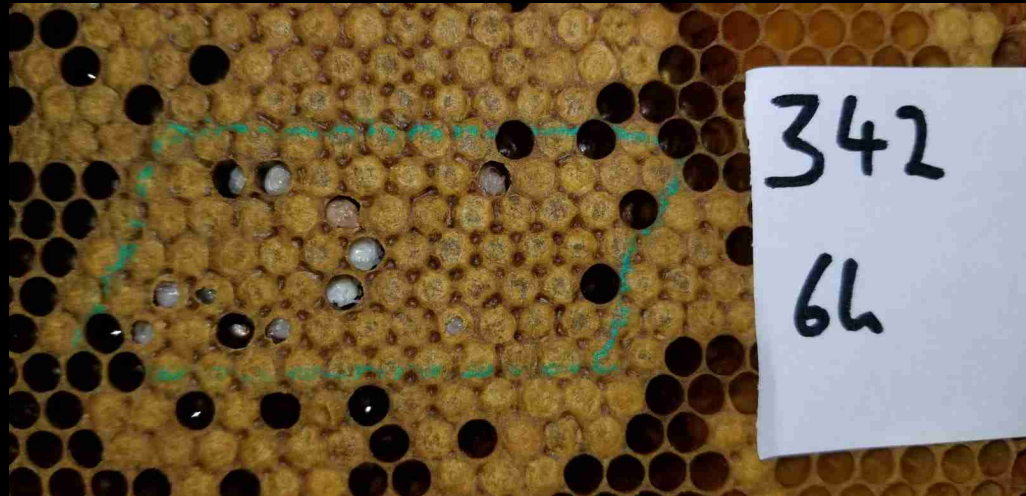
Teilprobe	Parameter	Methode
10 Bienenköpfe PCR	ct FAM	real-time RT-PCR-RNA-Nachweis Chronische Bienenparalyse-Virus nach Blanchard et al. 2007
10 Bienenköpfe PCR	Chronic Bee Paralysis Virus	real-time RT-PCR-RNA-Nachweis Chronische Bienenparalyse-Virus nach Blanchard et al. 2007
10	ct FAM	real-time RT-PCR-RNA-



Pitfalls/ Traps

Bee Screen

Test for DWV,
CBPV, ABPV,
NOS, Varroa

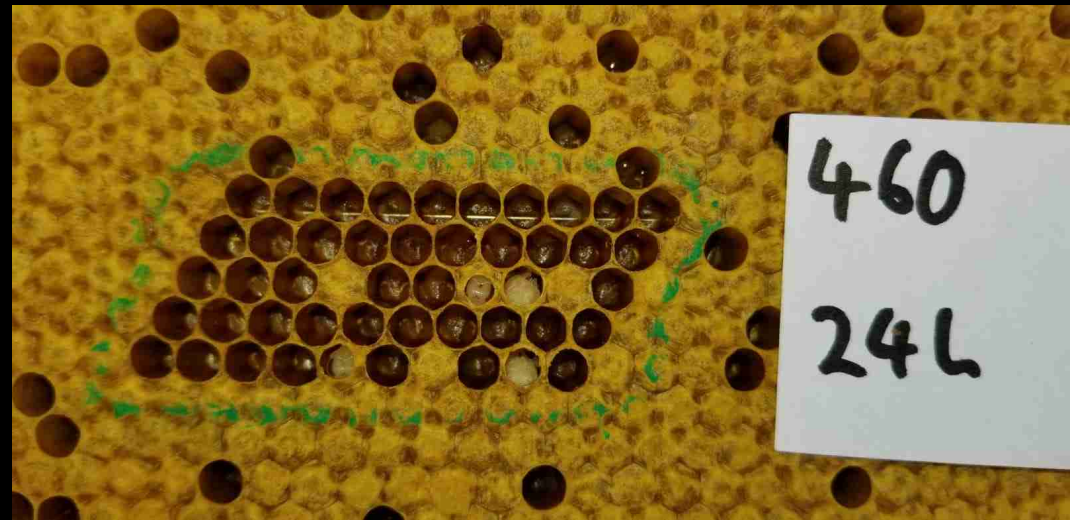


Pitfalls/ Traps

alive (7/2020)
untreated



dead
(TBE + OX)



Pitfalls/ Traps



Healthy and treatment-free surviving colonies show clearing rates from **6–8h** and are finished after **24h**

Everything that is faster needs critical questioning!



**artificial
Infection -**

Questioning!!

Pitfalls/ Traps



Source: <https://nature.com/articles/s41598-021-88649-y>

[nature](#) > [scientific reports](#) > [articles](#) > [article](#)

Article | [Open Access](#) | Published: 26 April 2021

Pupal cannibalism by worker honey bees contributes to the spread of deformed wing virus

Francisco Posada-Florez , Zachary S. Lamas, David J. Hawthorne, Yanping Chen, Jay D. Evans  & Eugene V. Ryabov 

[Scientific Reports](#) 11, Article number: 8989 (2021) | [Cite this article](#)

4085 Accesses | 2 Citations | 35 Altmetric | [Metrics](#)

Abstract

Transmission routes impact pathogen virulence and genetics, therefore comprehensive knowledge of these routes and their contribution to pathogen circulation is essential for understanding host–pathogen interactions and designing control strategies. Deformed wing virus (DWV), a principal viral pathogen of honey bees associated with increased honey bee mortality and colony losses, became highly virulent with the spread of its vector, the ectoparasitic mite *Varroa destructor*.

observe natural infection pathways and social Apoptosis

Pitfalls/ Traps



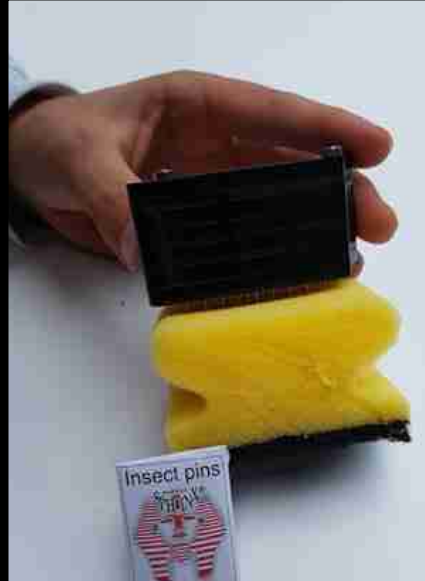
HEMOLYMPH

Perspective



Marla Spivak

Cleaning



alc. 75%

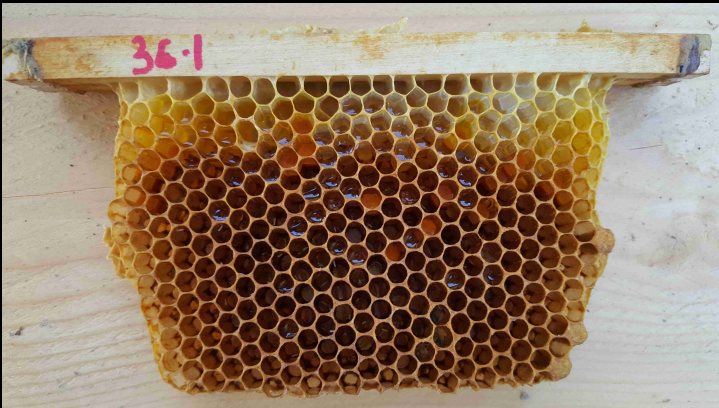
Evaporation
3min



History



History



Drone Line 2016



- 1937** - O.W.Park - AFB USA
first observation
- 1942** - Woodrow & Holst USA
first experiments with
prussic acid and frozen brood
- 1962** - **Walter C. Rothenbuhler**
Confirmation and Description

1966 - Al Root - EFB

1983 - M. Gilliam - Chalkbrood

1986 - Newton & Ostasiewski
Pin Killed Test

1996 - **Marla Spivak** Varroa

Known for over 80 years

80

Equipment



Documentation

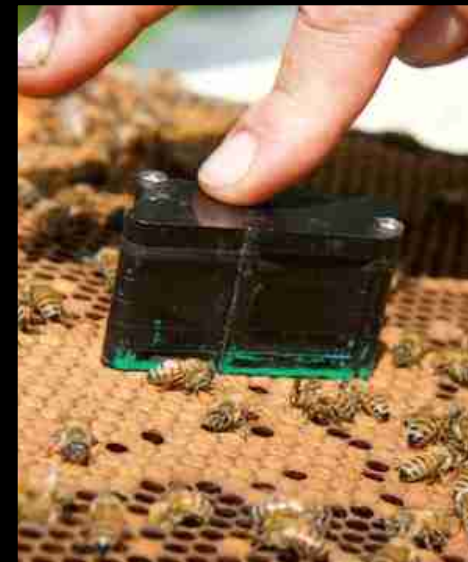
PinTest
Sponge
Tupperware
Paint Marker
Note paper
Mobile/ Camera

Tricks



apply at an angle or remove needles

Application



align - fix- press in

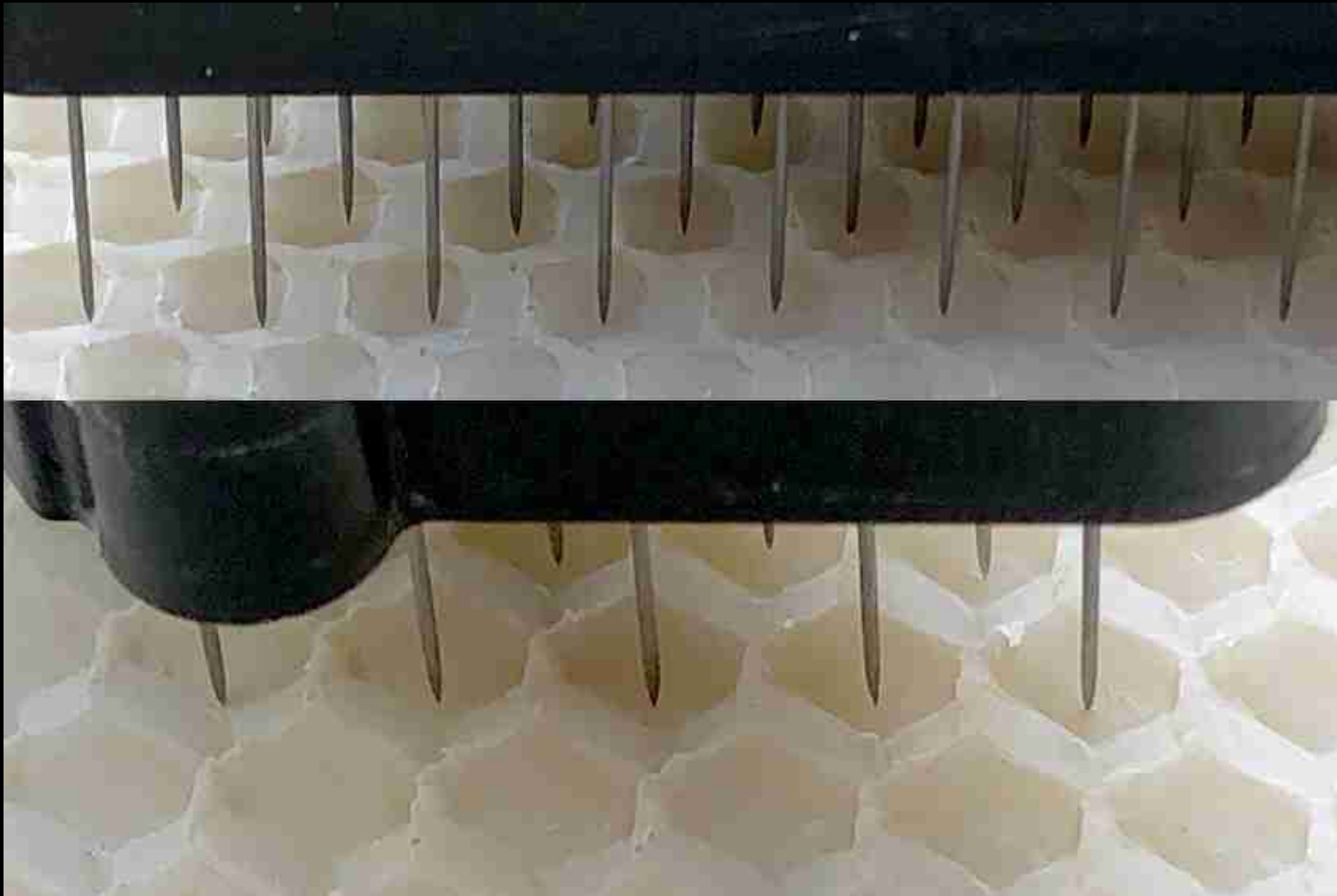
Application



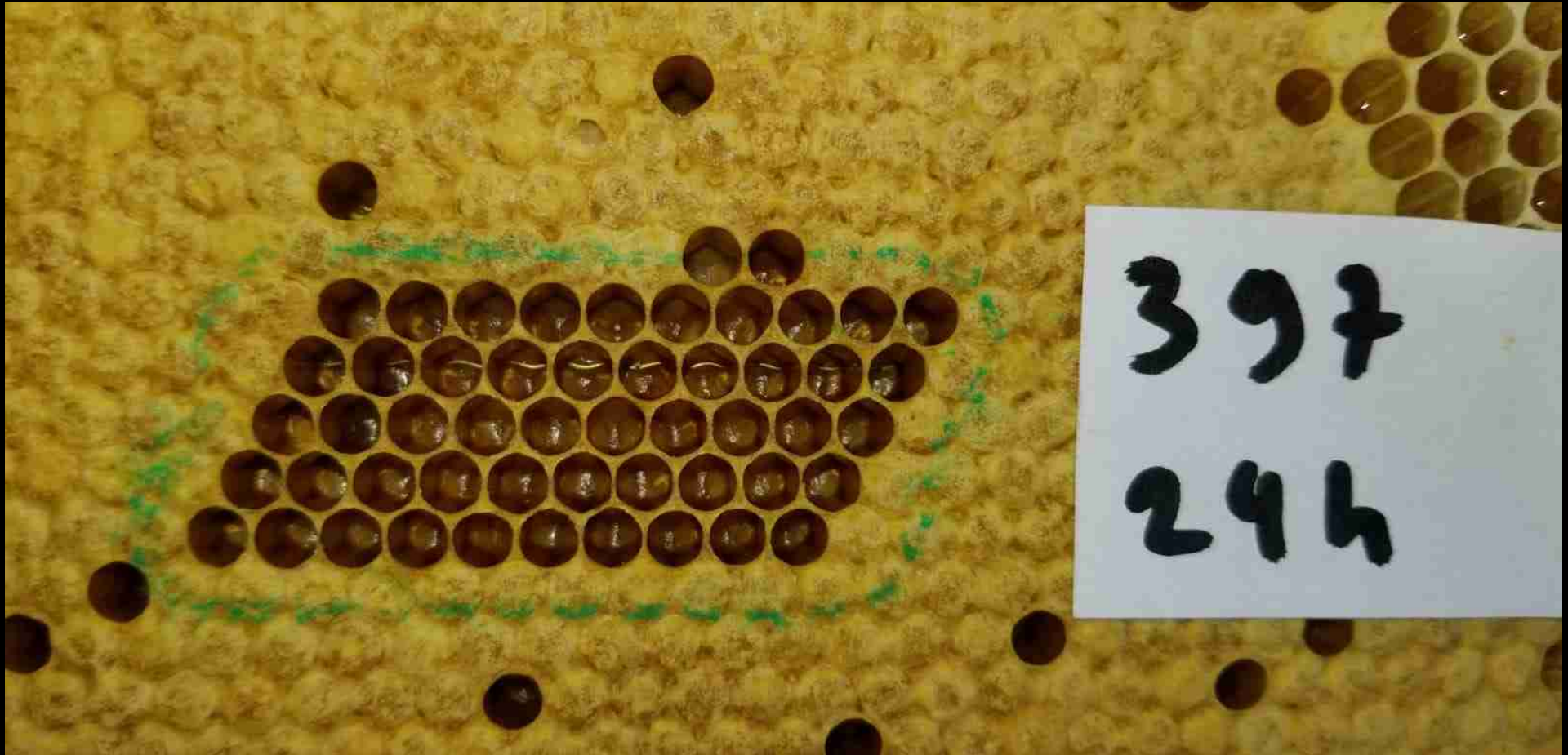
outline - mark the frame
number of colony - Photo



Strange



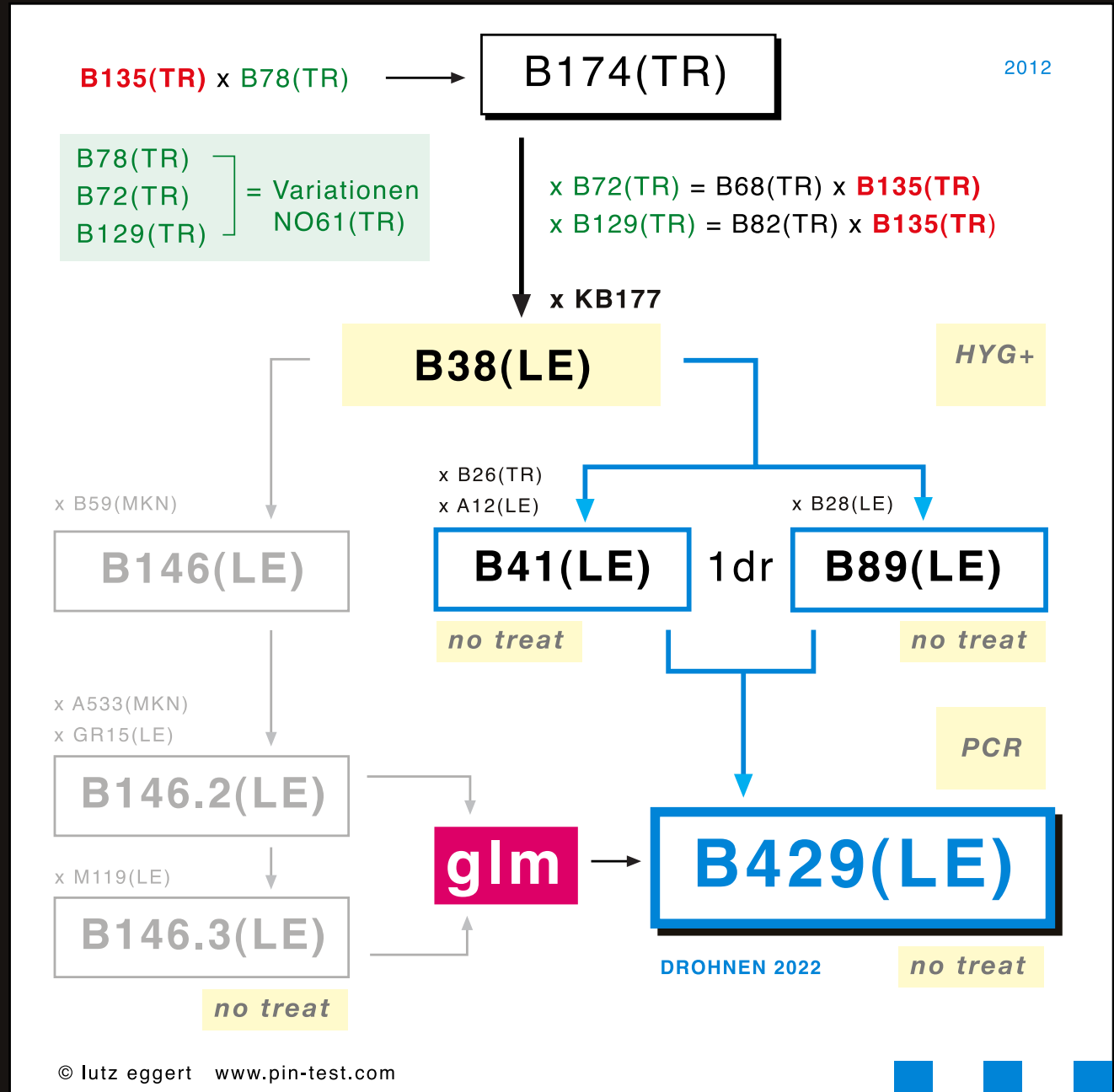
Application



check **6h** maximal **24h**

36h 30% ?

Selection





**Record HYG + Varroa + Vitality + Honey
Yield + Swarming + Gentleness + FBB**



Look closely - Parameter FBB



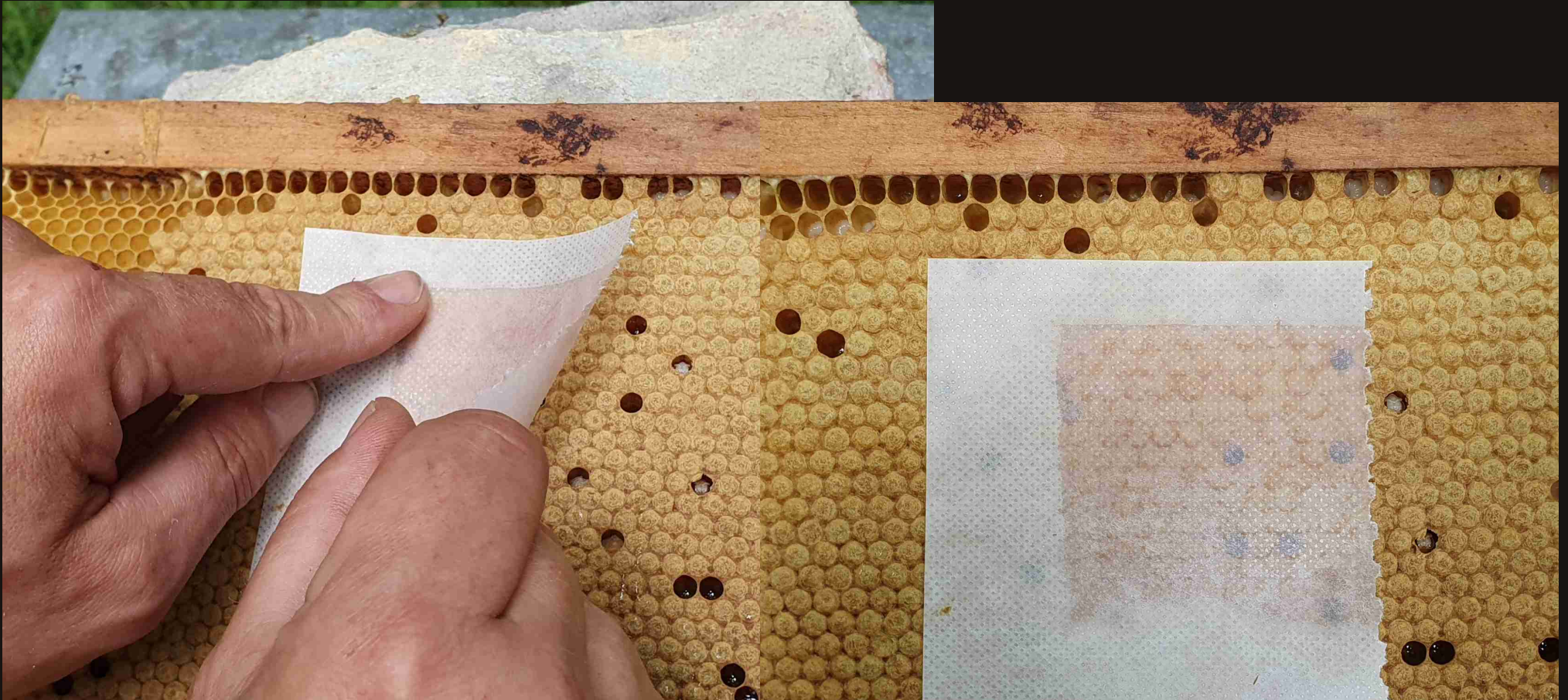
Accept and ask new questions



Look inside a brood comb

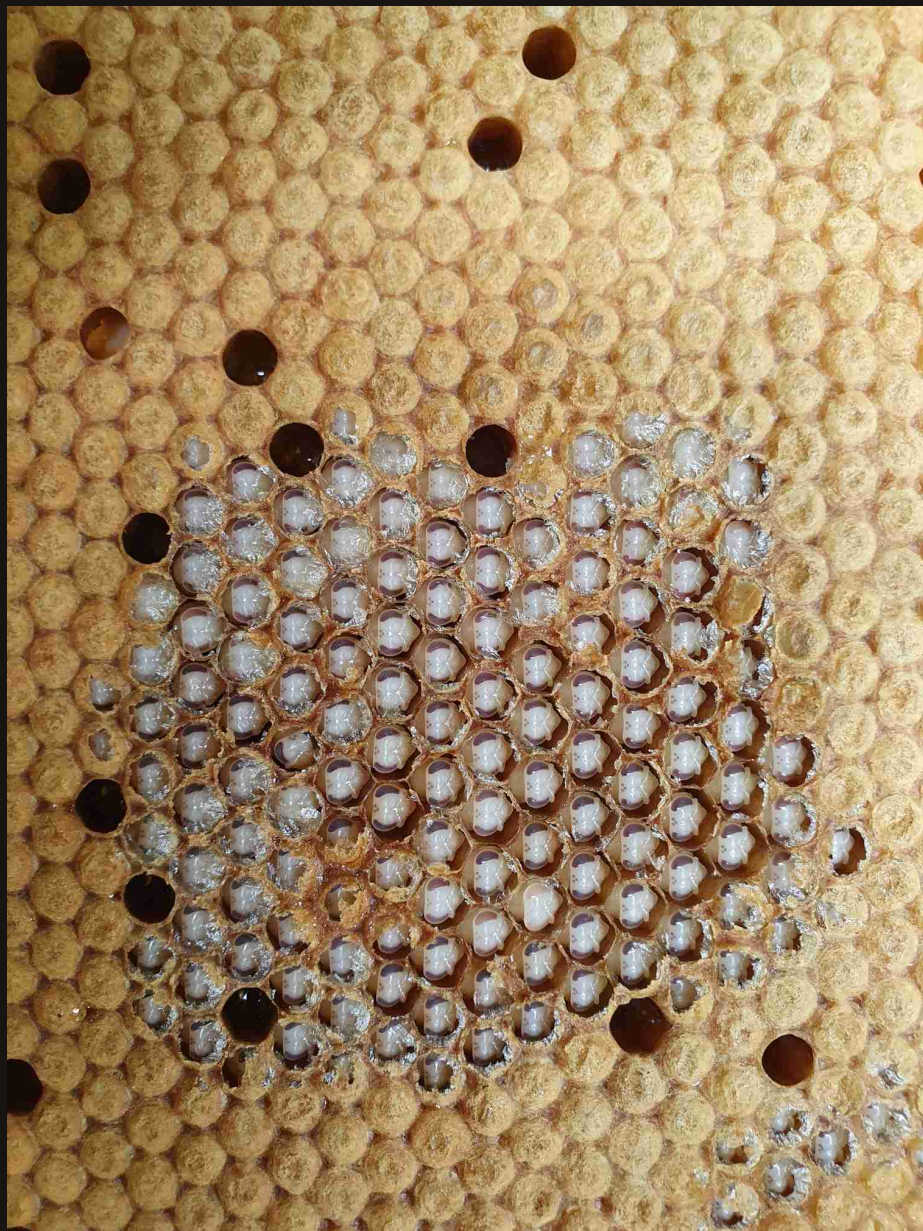


Read floor tray - document



alcohol wash + take a look inside brood

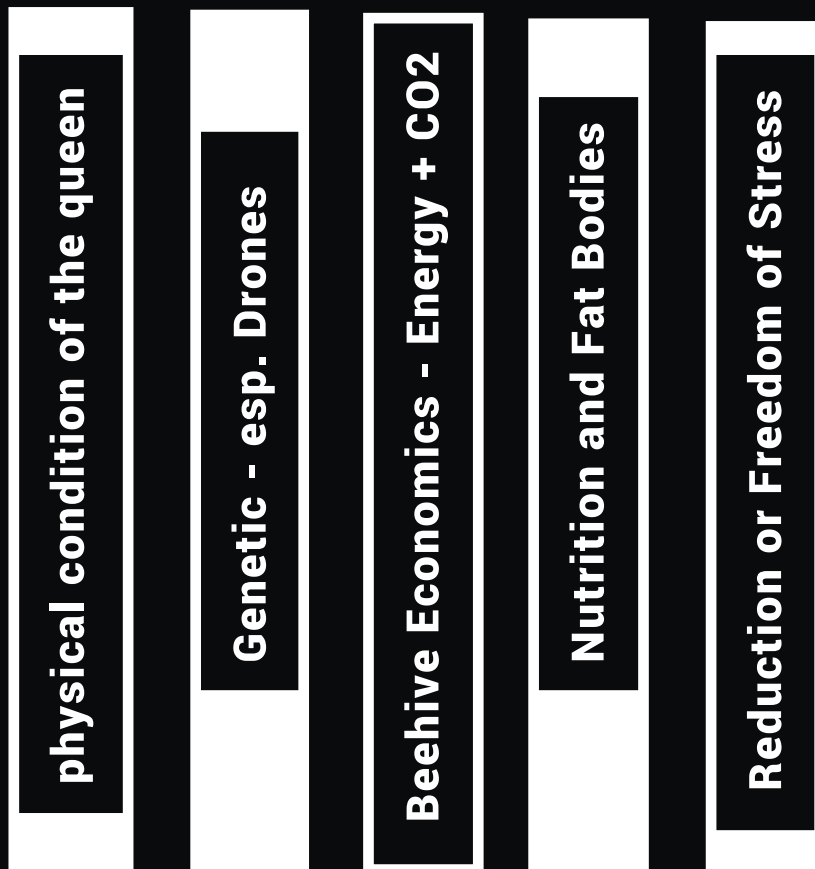


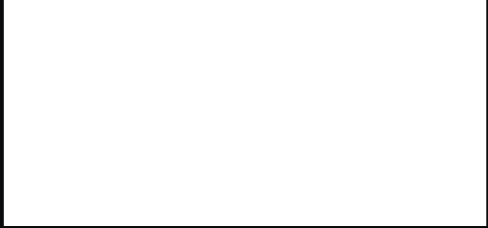


5 pillars of Varroa resistance



Good beekeeping practice



Finance
Marketing

Foundation

visit www.pin-test.com

