



NATURAL SELECTION: PROJECT FORT KNOX



Stowarzyszenie Pszczelarstwa Naturalnego „Wolne Pszczoły”

Natural Beekeeping Association „Free Bees”

Interessenverband Natürliche Imkerei „Freie Bienen”

www.wolnepszczoly.org

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NATURAL BEEKEEPING ASSOCIATION „FREE BEES“



- » **Founded – march 2015, by 6 amateur beekeepers**
- » **Organization for amateur beekeepers and by amateur beekeepers**
- » **14 members – spring 2018**

FOUNDED BECAUSE WE:

- » didn't want to put up with „industrial“ beekeeping
- » wanted to look differently on bees as living organisms, and beekeeping as a way of managing animals
- » wanted to formalize cooperation because „clear, written rules“ may encourage others to join us
- » thought formal organization may reach others easier and the voice would be stronger

WHAT WE BELIEVE/THINK/KNOW

» permanent and intensified usage of chemical substances cause:

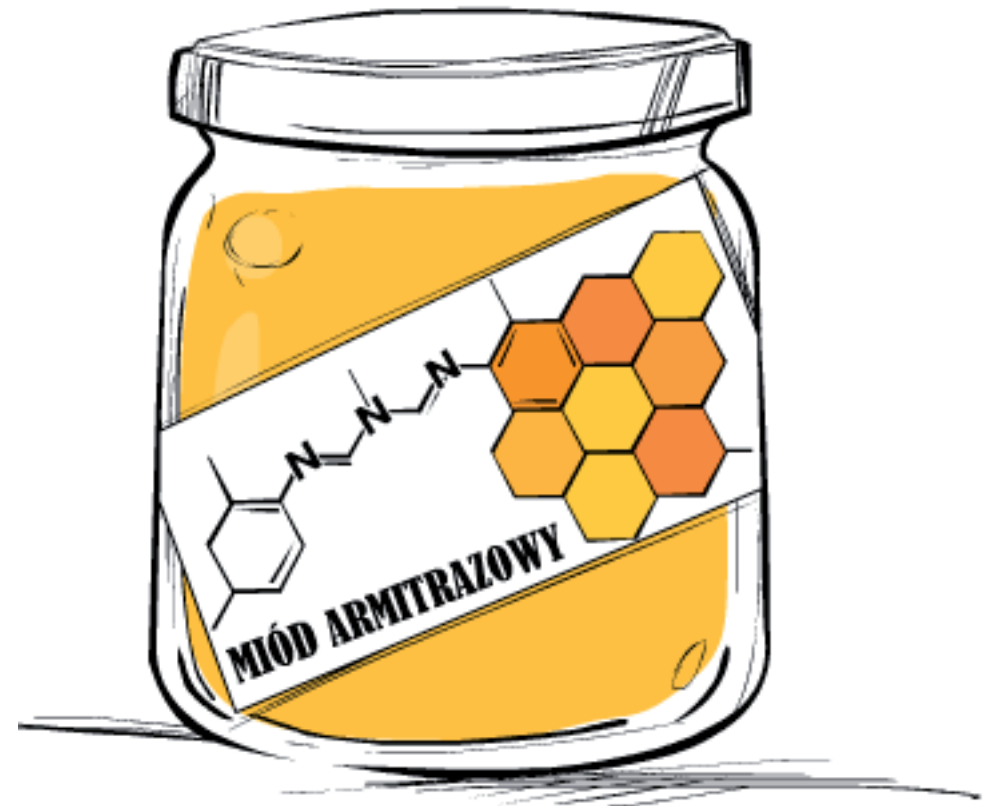
- immunity in the pests, parasites
- weakening of bees (as individuals and as population)



WHAT WE BELIEVE/THINK/KNOW

» permanent and intensified usage of chemical substances cause:

- devastation of hive ecosystems and microbial „bio-films”
- poisoning of bee products



WHAT WE BELIEVE/THINK/KNOW

- » intensive „industrial“ management methods cause weakening of specific bees and bee colonies
- » selection for „beekeeper friendly“ or „business friendly“ traits of bees cause weakening of the population and deficiency in its adaptation
- » genetic diversity is the key to survival of the population, but only with local adaptation





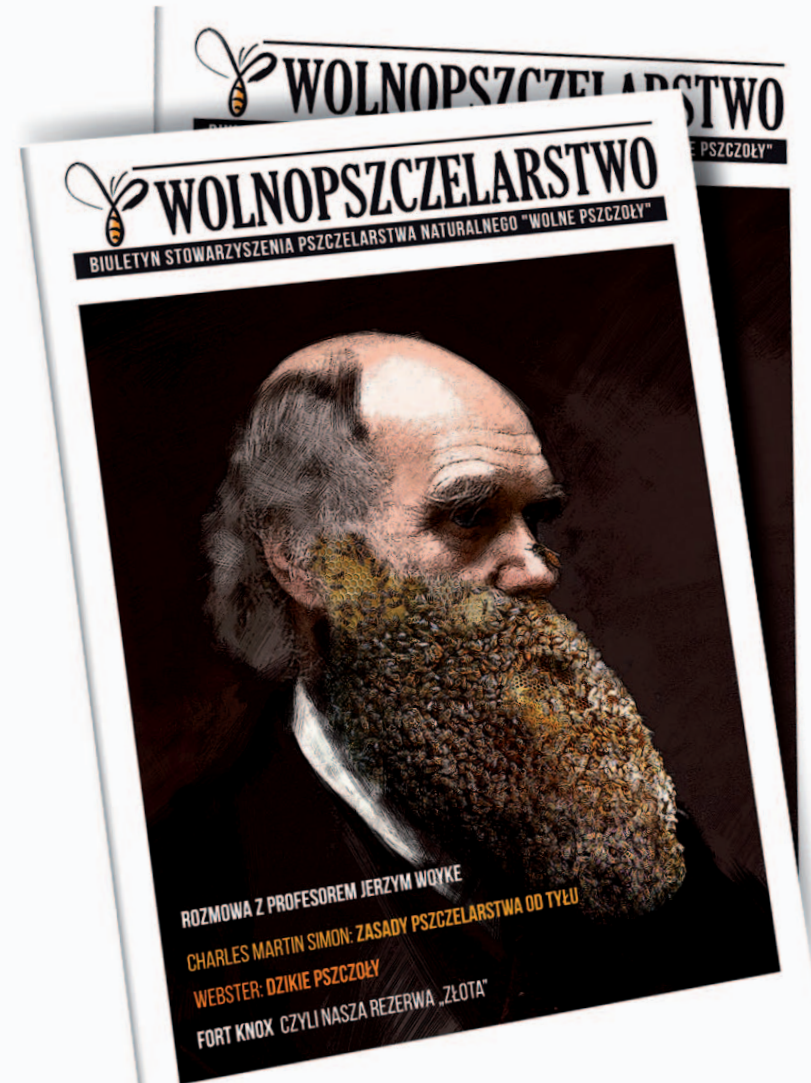


NATURAL BEEKEEPING ASSOCIATION „FREE BEES”



WHAT WE DO:

- » provide education on our website and in printed materials (brochure)
- » write texts for the website or to beekeeping magazines about natural beekeeping methods and bring out examples of people that do treatment free beekeeping in the world



NATURAL BEEKEEPING ASSOCIATION „FREE BEES“



WHAT WE DO:

- » we translate the work (texts) of beekeepers that show how to do treatment free beekeeping (mostly Michael Bush's and Kirk Webster's)
- » interview scientists and beekeepers who keep bees with minimal treatment, and try to introduce „natural“ methods



NATURAL BEEKEEPING ASSOCIATION „FREE BEES“



WHAT WE DO:

- » cooperate in selection of bees
- » help each other in „rebuilding“ apiaries if they fall because of varroa, other diseases and even mistakes and „bad“ management



HOW WE DO OUR SELECTION

- » most of us do „natural selection“ on whole or at least part of the apiary
- » some do „expansion model beekeeping“ and work mostly on nucs and smaller colonies (this means no or minimal honey crop)
- » we use local survivor queens (we breed queens from survivors, take them from each other or buy only when necessary – e.g. with bought colonies when rebuilding apiary)



HOW WE DO OUR SELECTION

- » small cell foundation (clean wax) or natural comb
- » no pesticides
- » some do selection methods based on Erik Osterlund's or Randy Olivier's example (treatment as intervention, breeding from the ones that do not need treatments for some time)



 **FREE
BEES**





OUR APIARIES:

- » we had altogether about 330 hives autumn 2017
- » about 160 - 170 of them were treatment free
- » about 80 were treatment free for full 3 years
- » about 85 treatment free (of both groups) survived the winter
- » biggest treatment free apiaries:
 1. 55 went into winter (all tf for 3 years) – survived 23;
 2. 40 went into winter (some tf for 3 years, some tf for 1 year with tf genetics) – survived 26.
- » over 100 treated and selected survived the winter
- » we have altogether over 200 hives spring 2018











PROJECT „FORT KNOX”



WHY HAS IT BEEN FOUNDED

- » to ensure the progress of selection and use the selection potential of all apiaries – even the smallest ones
- » to guarantee that no one who wants to cooperate and risk for/with others will be left without bees
- » to ensure genetic diversity of selected bees which is narrowed by natural selection and hives dying
- » to join us together, make us more and more trustworthy to each other, and make us believe we all cooperate to reach the same goal

The worst thing to selection is starting over and over and over...



PROJECT „FORT KNOX”



GENERAL ASSUMPTIONS OF COOPERATION

- » each member of association may participate in „Fort Knox” project
- » each participant may „transfer” some colonies to the project from hers/his apiary
- » if colonies die, participant is given the same amounts of nucs from others (which come from others’ „fort knox” colonies)
- » if colonies survive, participant is obliged to make specific amount of nucs from them, and give them to the ones that lost their colonies
- » all cooperation is free of charge, voluntary and based on good will

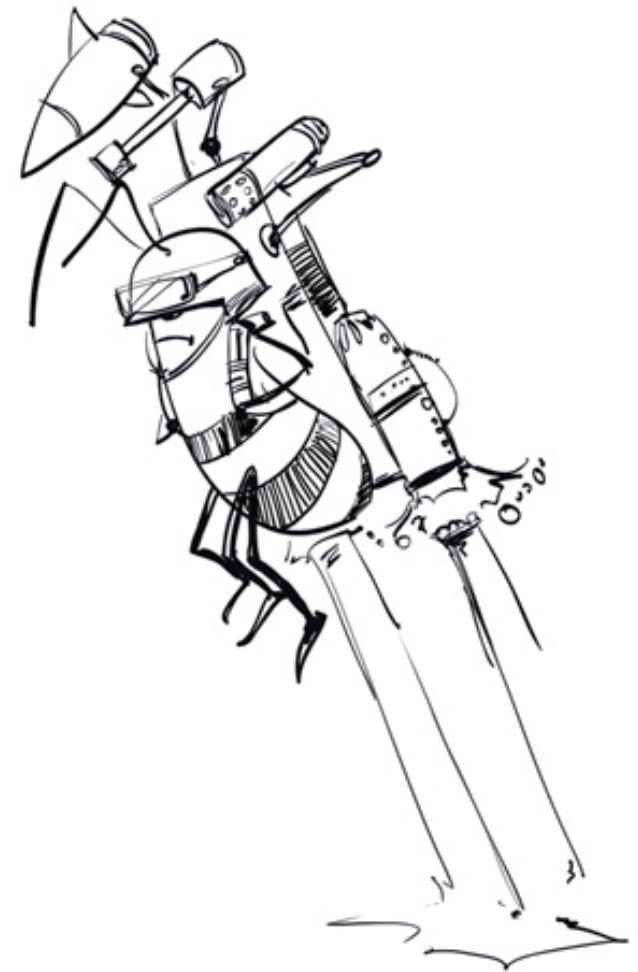


PROJECT „FORT KNOX”



GENERAL ASSUMPTIONS OF MANAGEMENT

- » only natural selection – we leave it all to the bees
- » no treatments whatsoever, no killing mites, no technical/management methods of reducing infestation





PROJECT „FORT KNOX”



GENERAL ASSUMPTIONS OF MANAGEMENT

- » minimal management
- » minimal feeding sugar (only when absolutely necessary before winter)
- » colonies should be self sufficient, splits should be done only to rebuild the numbers and to the point that colony should gather herself food for winter

LAZY BEEKEEPING





PROJECT „FORT KNOX”



GENERAL ASSUMPTIONS OF MANAGEMENT

- » no honey harvest unless there is much surplus
- » no killing/shifting queens



Some rules may be „bent” when conditions are not favorable (but not the ones of no treatments!)



PROJECT „FORT KNOX”



WHY NATURAL SELECTION IN THE PROJECT?

- » the quickest and best (the only ???) Way to reach treatment free bees
- » selects bees and bees' environment in the most complex and complete way (genetics, microflora, hive ecosystem, all the traits – even the ones we are not aware of)



selection for
BEEing
round





PROJECT „FORT KNOX”



WHY NATURAL SELECTION IN THE PROJECT?

- » leaves only the best adapted bees to local environment and ecosystems
- » inflicts all the natural pressures of environment with all the pros and cons of them
- » adapts bees in the way no other methods do (gene expression, epigenetic factors)

PRODUCT OF EVOLUTION



PRODUCT OF INTELLIGENT DESIGN





PROJECT „FORT KNOX”



WHAT PROJECT „FORT KNOX” IS NOT

- » the only selection that is happening in the association „Free Bees”
- » the only activity of the association
- » guarantee of income or success
- » guarantee that all loss is returned by others
- » guarantees of strong honey production colonies



PROJECT „FORT KNOX”



WHAT PROJECT „FORT KNOX” IS

- » guarantees that no participant is left without bees
- » exchanging surviving genetics between participants
- » expanding surviving genetics
- » help in diversification of genetics that becomes more homogenous because of natural selection killing bees
- » only a part of the whole selection process towards adaptation to mites in our apiaries



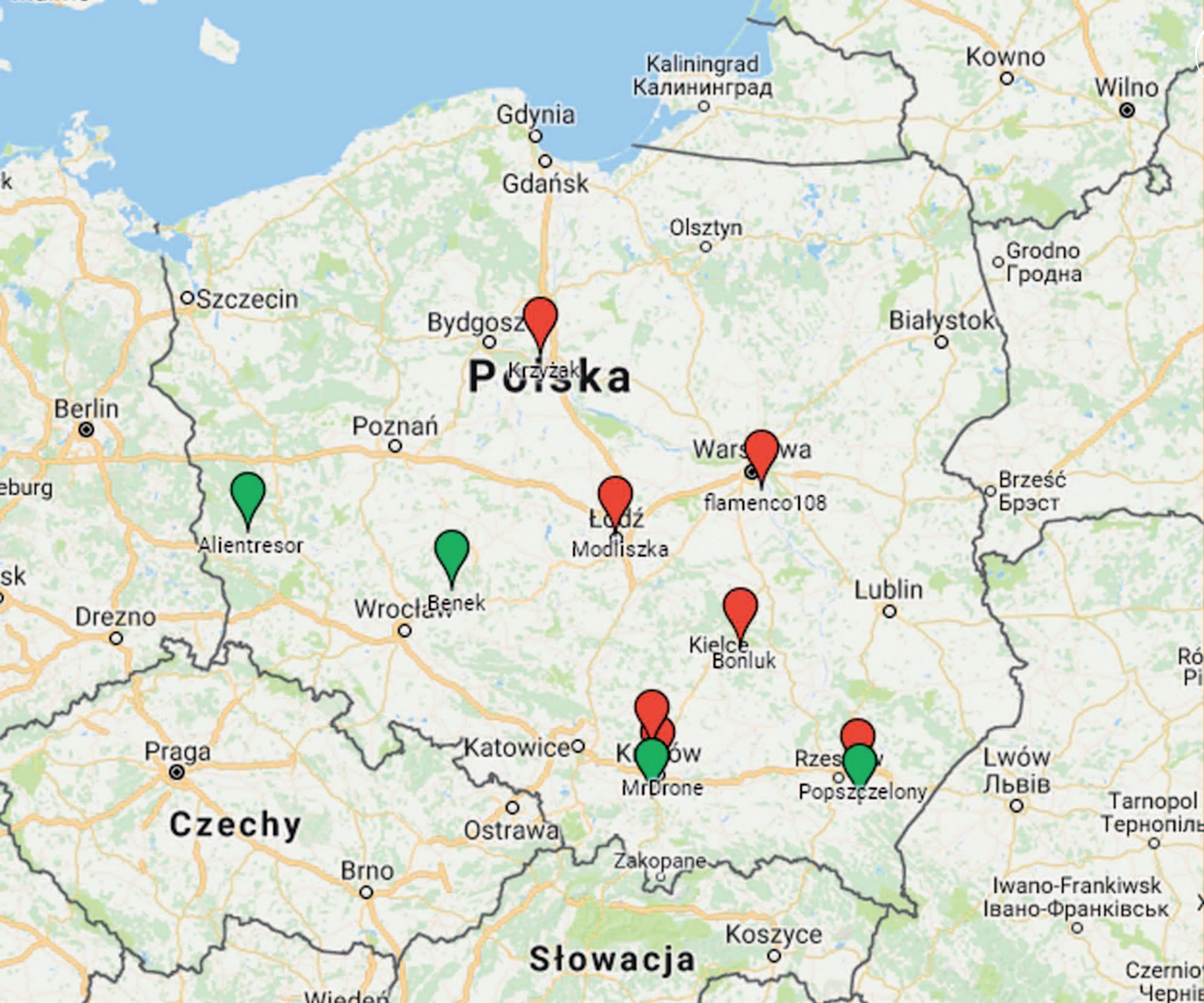
PROJECT „FORT KNOX”



HOW DOES IT WORK? (HISTORY OF COOPERATION)

In 2015 Project had 5 participants and 15 colonies

- » Spring 2016 – 11 survived (73%), 4 died
- » Summer 2016 – 4 nucs were made to replace the dead, 3 more died, 3 new were introduced to the Project with 1 new participant
- » Fall 2016 – 15 colonies went into winter out of 18 colonies that should be in the Project (3 were to be made 2017)
- » Spring 2017 – 10 died during winter, 5 survived (28%) (3 in one place, 2 in the second place)

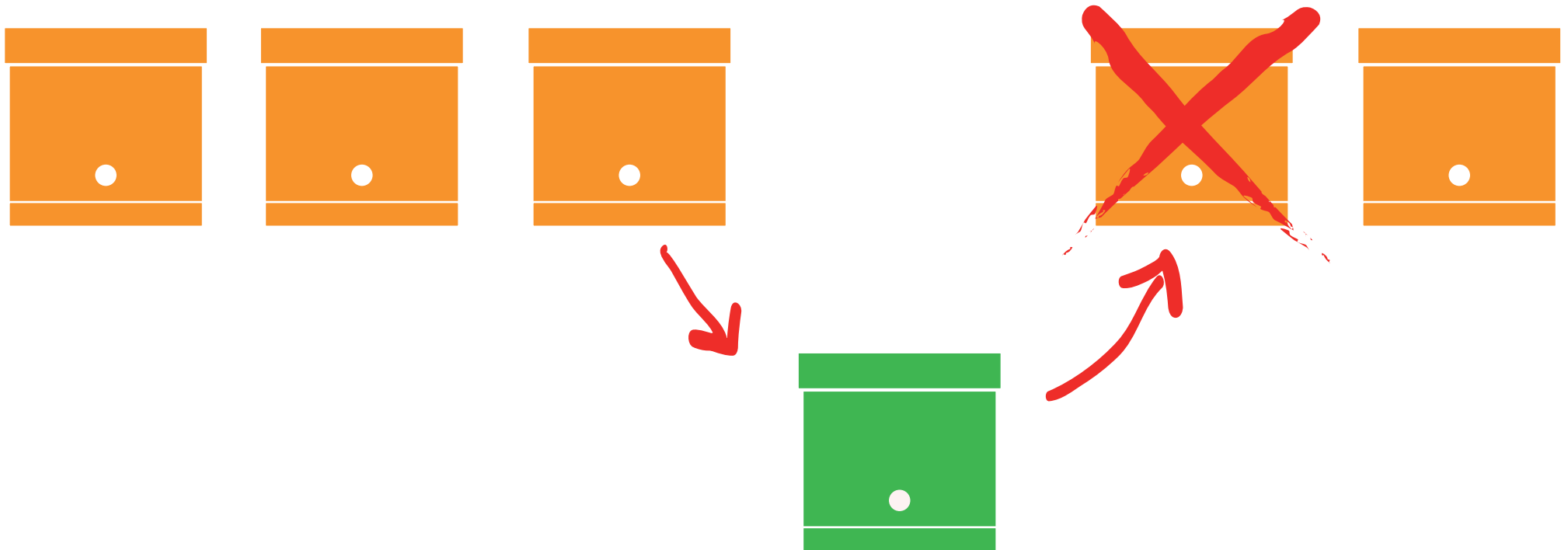




PROJECT „FORT KNOX”



HOW DOES IT WORK? (HISTORY OF COOPERATION)





PROJECT „FORT KNOX”



HOW DOES IT WORK? (HISTORY OF COOPERATION)

- » Summer 2017 – 13 new colonies were made, 2 more died during the summer, 5 new were introduced in the Project
 - » Fall 2017 – 21 out of 23 „Fort Knox” colonies (belonging to 7 participants) went in the winter
 - » Spring 2018 – 11 colonies survived (47% of „Fort Knox” colonies)
 - » Summer 2018 - ?
- (Probably 14 new colonies of 4 new Participants will be introduced to the Project)



PROJECT „FORT KNOX”



HOW DOES IT WORK? (MY EXAMPLE)

- » In 2015 I introduced 4 colonies to the Project (2 AMM „mutt” queens, 1 granddaughter of Erik Osterlund’s queen, 1 granddaughter of Juhani Lunden’s queen)
- » Spring 2016 - all survived
- » Summer 2016 – I made 2 nucs for 2 other participants (1 with AMM „mutt” queen, 1 with grand-granddaughter of Erik Osterlund’s queen)
- » Winter/Spring 2017 – all of my Project colonies died (In my apiary I had 98% loss – only one colony survived out of 41 that went into winter)







PROJECT „FORT KNOX”

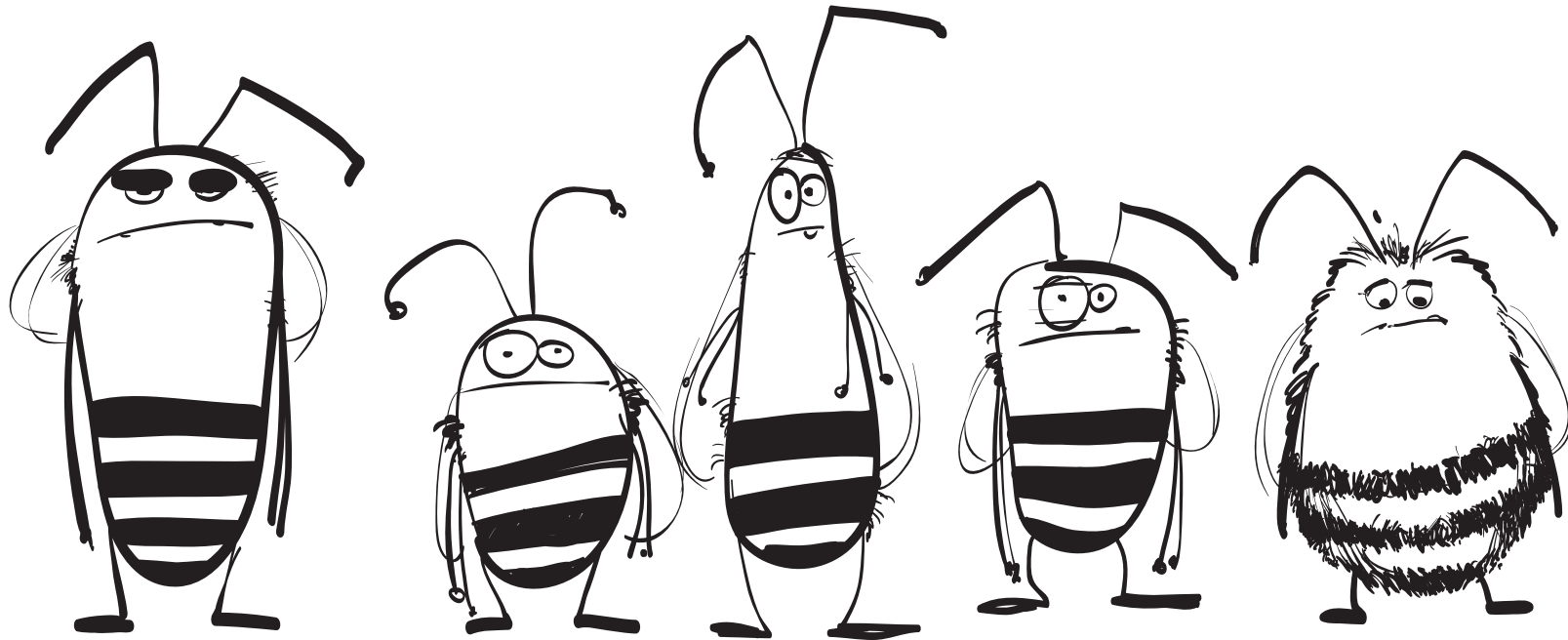


HOW DOES IT WORK? (MY EXAMPLE)

- » Summer 2017 – I was given 4 colonies/nucs (1 of them was grand-grand-granddaughter of Erik Osterlund’s queen); I introduced 5th Fort Knox colony (with queen-daughter of my survivor colony)
- » Spring 2018 – 4 of the 5 survived the winter
- » Summer 2018 - ?
(I am to be making 5 colonies to the ones that lost their Project bees, and I am to be given one for my dead colony)



Thank you, for your attention.



GENETIC DIVERSITY