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breeding efforts on resistant honeybees

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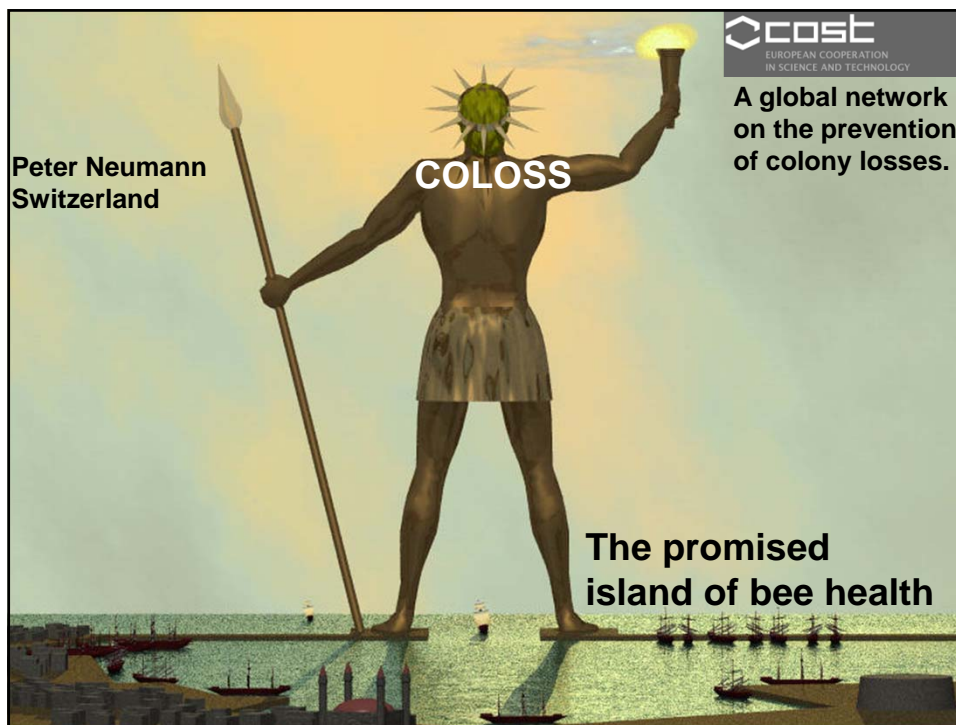
Some past and contemporary attempts

Hygienic behaviour and resistance to American foulbrood
Walter C Rothenbuhler

Varroa resistant/tolerant bees
on the island of Gotland

Ingemar Fries

Nosema tolerant honeybees in Denmark
Per Kryger



**Peter Neumann
Switzerland**

COLOSS

cost
EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY

**A global network
on the prevention
of colony losses.**

**The promised
island of bee health**



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**BEE DOC - an EU-project on
honeybee health**



**SEVENTH FRAMEWORK
PROGRAMME**

BEE DOC

Beekeeping in Europe and the Decline Of honeybee Colonies

emergence of new- or re-emergence of well known pathogens, as well as interactions with endemic infections and parasitism, in different European areas

Genomics knowledge of the bee genome and of some pathogens (such as viruses) will be used to differentiate and explore host-pathogen interaction.

Special focus will be on Nosema disease (*N. apis and ceranae*), viruses and the impact of Varroa destructor infestation.

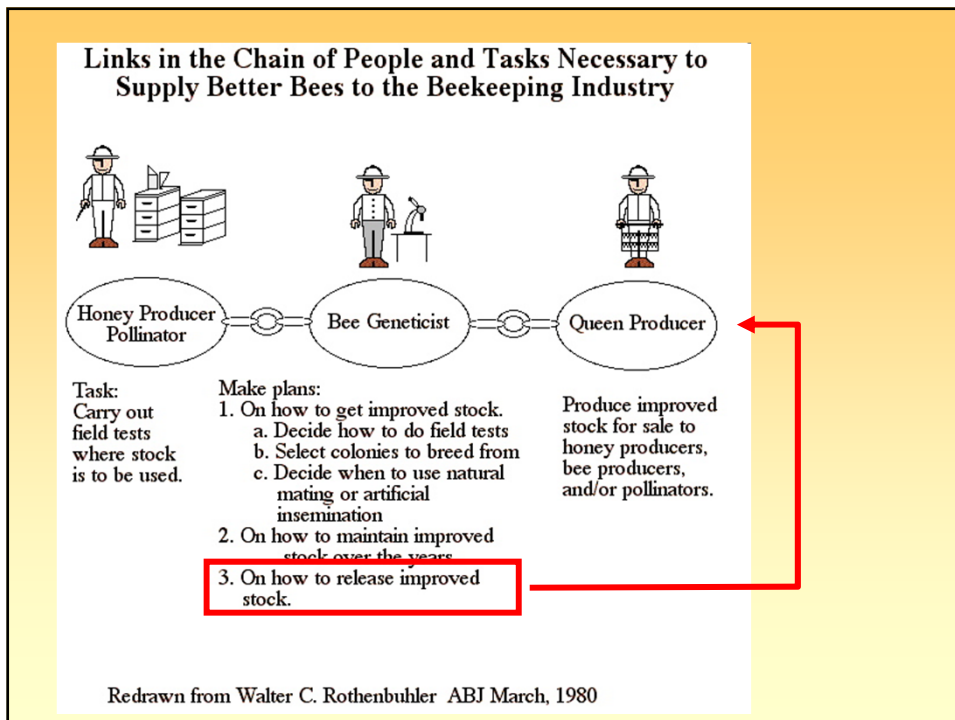
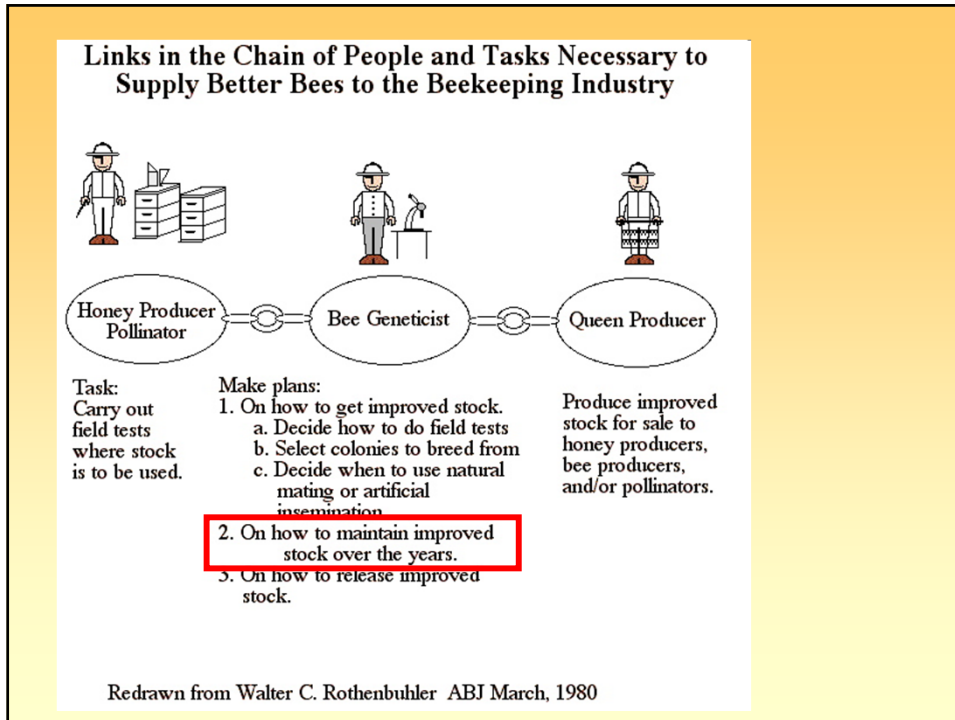
Environmental factors, including chronic exposure to pesticides, as well as husbandry and management practices will be considered.

A gedanken experiment

This is her....

The ultimate queen that serves all your wishes.

**Never ill, never stings,
Makes tons of honey, pollen, royal jelly and propolis**



Varroa Sensitive Hygiene (VSH)

Where did VSH bees come from?

VSH bees were originally selected from diverse domestic honeybee colonies in Louisiana and Michigan that showed some degree of mite resistance .

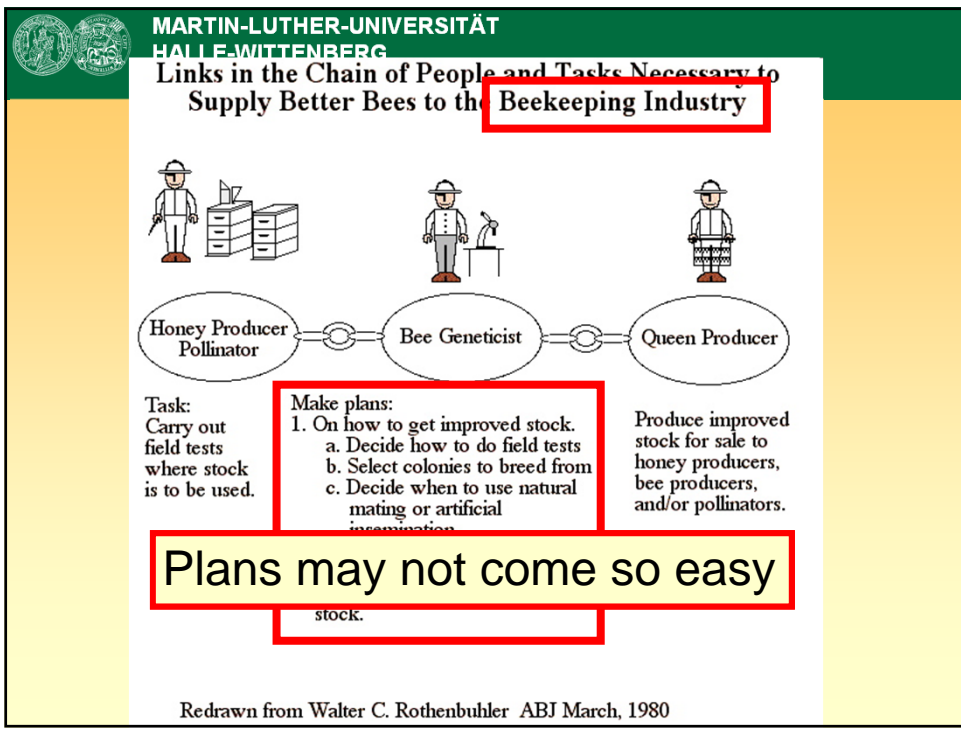
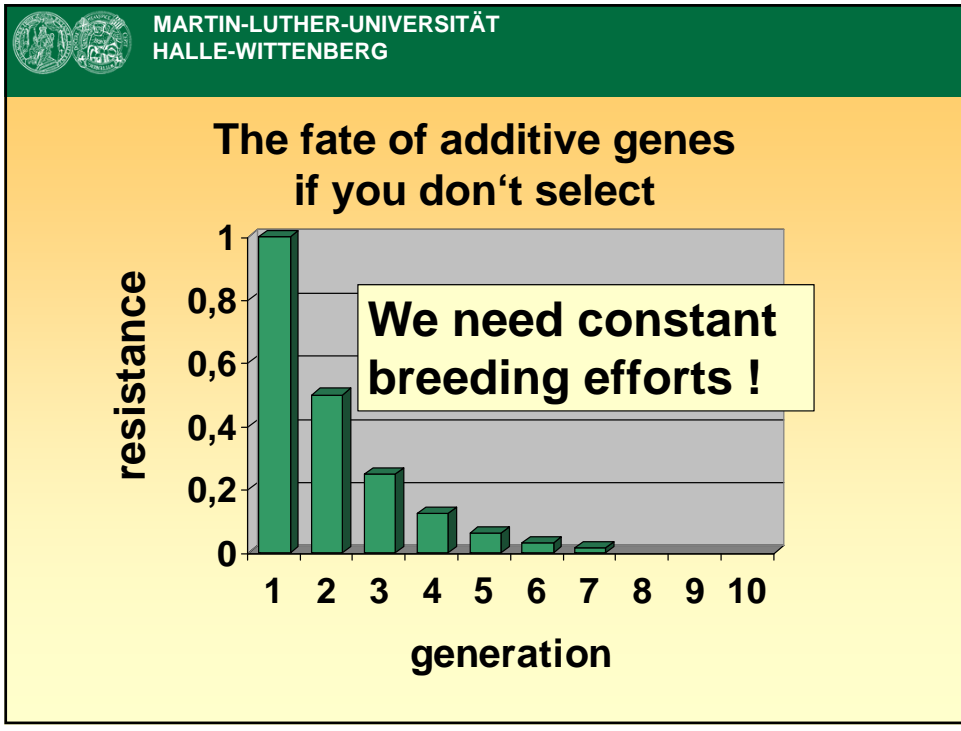
They are all American bees.

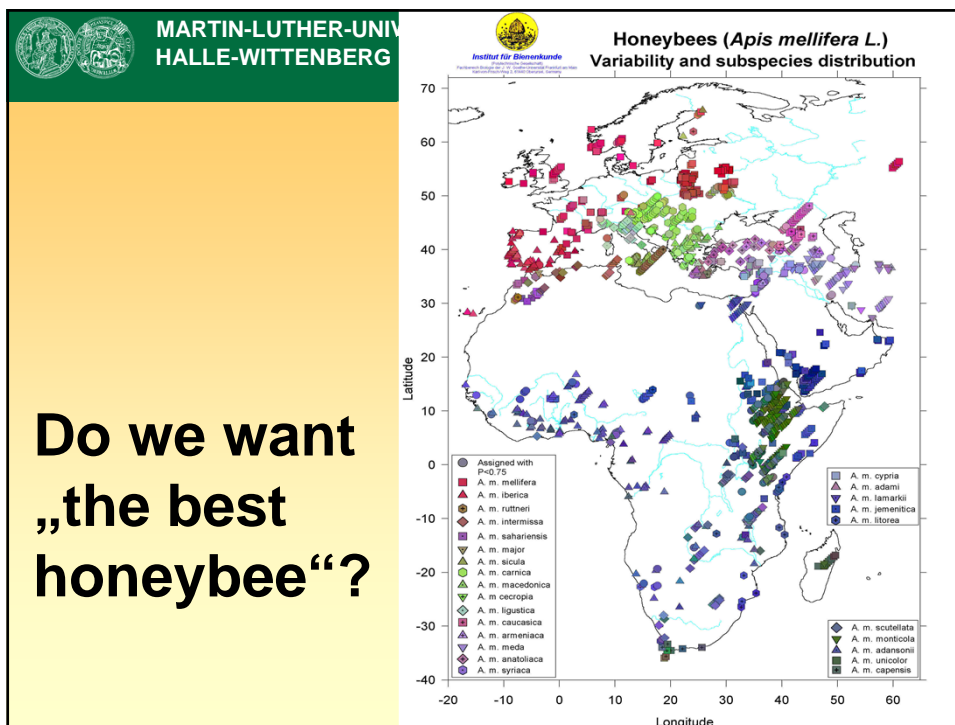



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mass queen rearing	mass mating control
mass queen mating	mass instrumental insemination








Do we want
„the best
honeybee“?

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Diversity of apiculture,
honeybees and habitats


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 Links in the Chain of People and Tasks Necessary to
 Supply Better Bees to the Beekeeping Industry

This works at a regional scale
but not at a continental scale

Breeding requires continuous
regional efforts

field tests a. Decide how to do field tests stock for sale to

DNA tools will help with selection
but do not reduce the
regional breeding efforts

Redrawn from Walter C. Rothenbuhler ABJ March, 1980


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**Africa is the continent with the least
problems related to colony health.
With vast wild populations natural
selection helps to prevent diseases**

**Do not invest in
breeding efforts on resistant
honeybees in Africa**



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Make beekeeping popular!

Let Africa take care of selection

Thank you