

From nematode start-up to microbial control company

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What do you need to start a company ?

- An idea
- A supportive environment
- People which are
 - Dedicated
 - Good
 - Courageous
 - Desperate
 - Crazy ?
- Luck !
- A business plan

The idea.. History

- 1984: Ralf-Udo Ehlers started with a diploma thesis on black-vine weevils and got **infected**
- 1989: German funding for a project on „mass production of entomopathogenic nematodes in liquid culture“
- Several industry partners
 - BASF 1989
 - NEUDORFF 1990
 - Ecogen Inc. 1993
- Movement to Ralsdorf facilities in 1991
 - Setup a business in Ralsdorf was in his mind...

The environment in the late 80s

- Biobest started selling bumblebees 1987
- Restricted use of chemicals under-glass
- Nematode production started
 - Biosys (USA)
 - AGC (now Becker-Underwood) (UK)
 - De Groene Flieg (NL)
 - Koppert (NL)
 - Andermatt (CH)
 - Bionema (S)



People..... (Ralfs working group 1992)



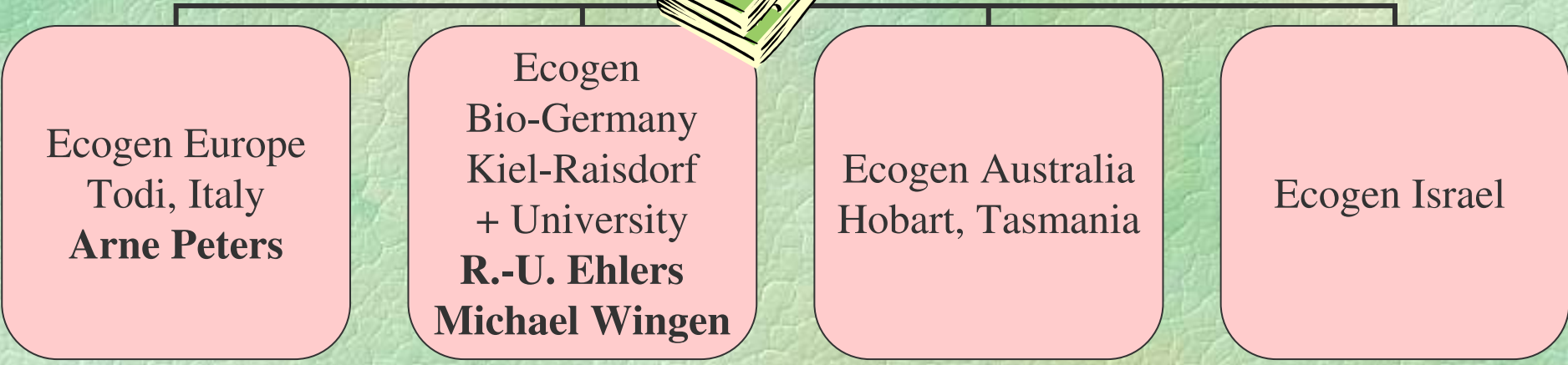
People, that are

- Experienced and good
- Dedicated (crazy)
- Courageous (naïve)
- Desperate (without a job)

The raise and fall of Ecogen Inc. A trigger for founding e-nema ?



Ecogen Inc.
Pennsylvania, USA
1993



The raise and **fall** of Ecogen Inc. A trigger for founding e-nema ?

Ecogen Inc.
Pennsylvania, USA
1996



- Pilot scale facility was running at Kiel
 - Would it be closed down ?
- No more money for University research group
 - Would the research group disappear ?
- No job in Italy

DESPERATION !!

Luck !

- Another *desperado* was found:
 - **Tillmann Frank**, teacher, unemployed and with business and management ambitions
- The EU granted a project on liquid production of entomopathogenic nematodes
- Company started its activities in January 1997

A business plan...

- An important exercise
 - Indispensable to get money
 - Important to gain confidence
 - Detect pitfalls

But:

- Market size was overestimated
 - Momentum was underestimated
 - Future options cannot be predicted
- Attempts to predict business is like trying to predict evolution



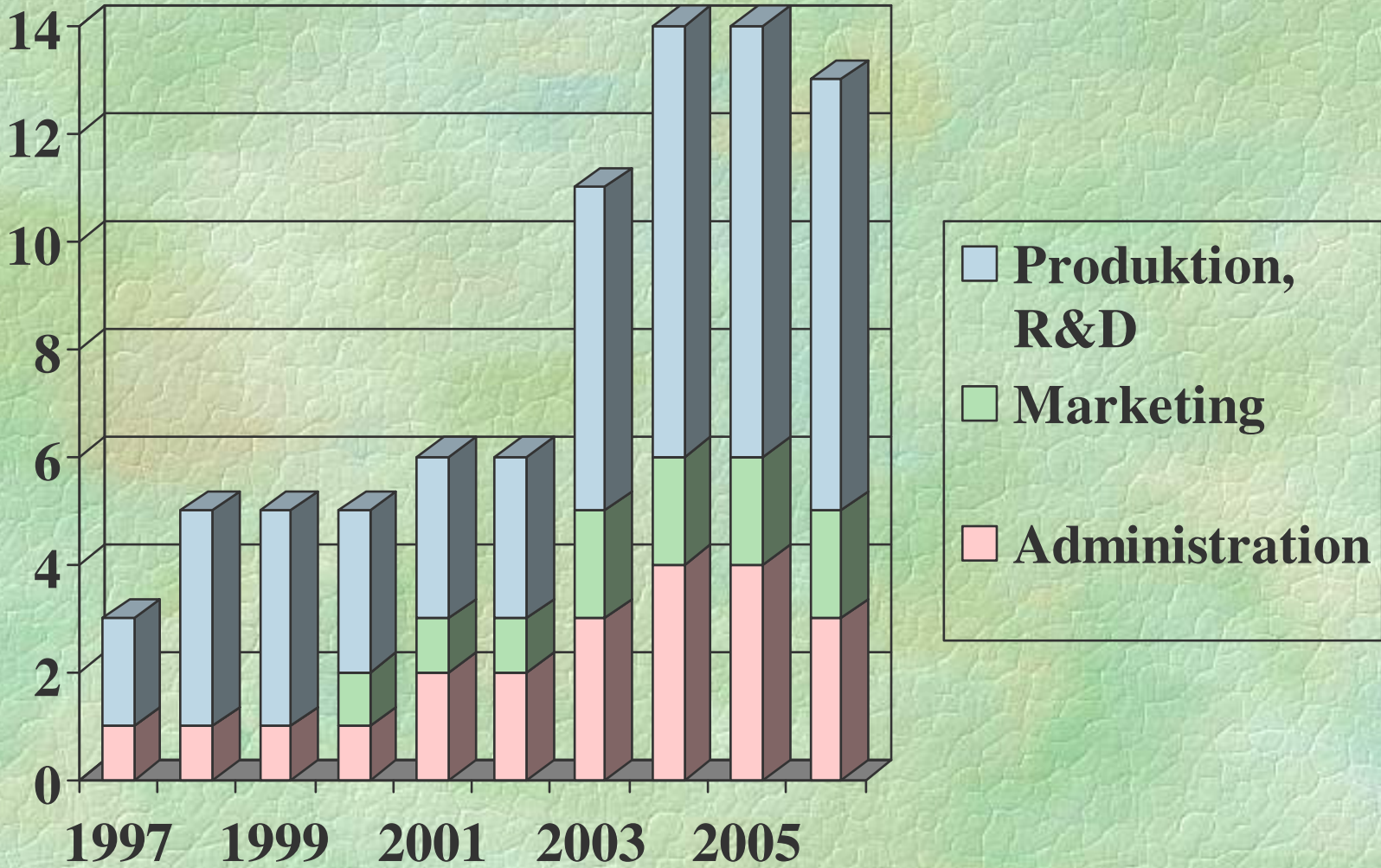
Analogies: evolution and business

- Variation ⇒ Ideas from academia and other companies (**COST actions, scientific reputation**)
- Pre-adaptation ⇒ Pursued equipment improves company profile
- Feedback (survival of the fittest) ⇒ by reputation, by making or loosing money
- Selection pressure ⇒ Money

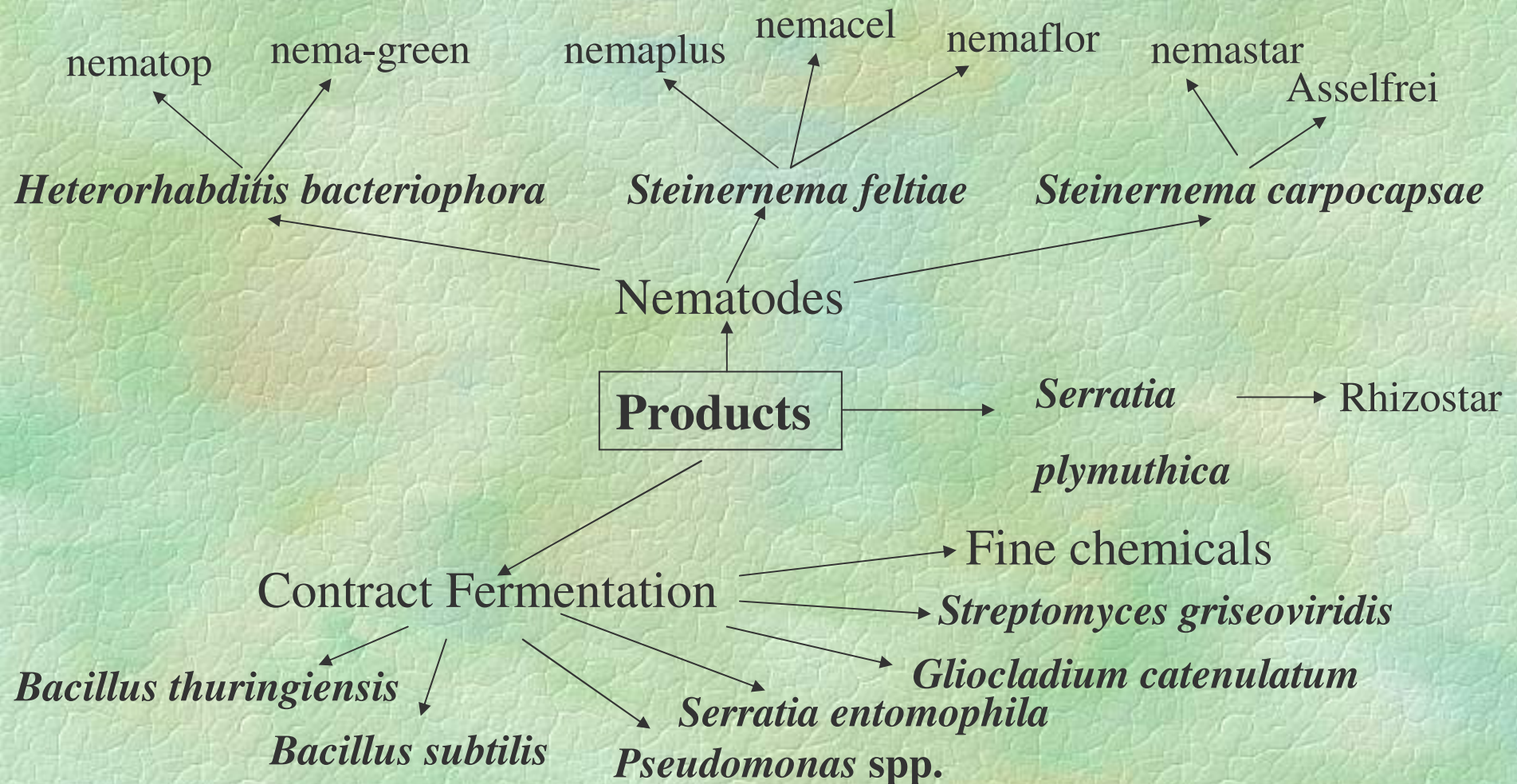
Challenges and equipment

- More nematodes => Fermentors 3m³ , 4m³
- Cedomon (Pseudomonas for seed dressing) => 10 m³ fermentor, filter
- B. thuringiensis => Separator, Spray-dryer
- Prestop (biofungicide) => fluidized bed dryer
- Fine chemicals => Filter, evaporator
- etc.

Challenges and staff



Activities of E-Nema



The future

- More contract production (Use niche position)
- Continue to develop new areas for use of EPNs
- Maintain and expand good network with academia
- Maintain and expand flexibility in production