



KTH Biotechnology

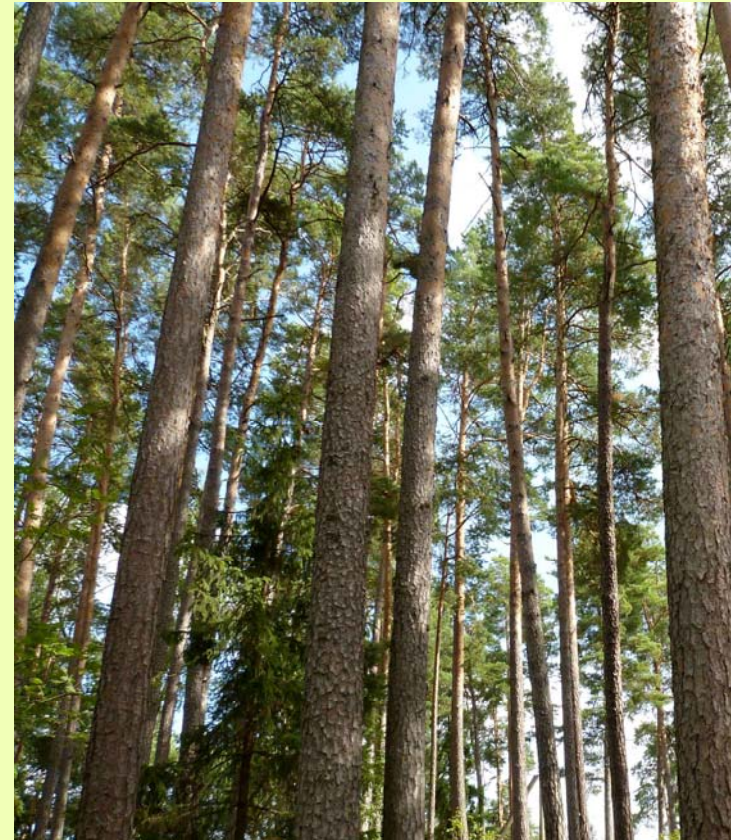
## ECOLOGICAL PLANT BIOCHEMISTRY

*Torkel Berglund*

*Anna Ohlsson*

Biotechnology/Biochemistry

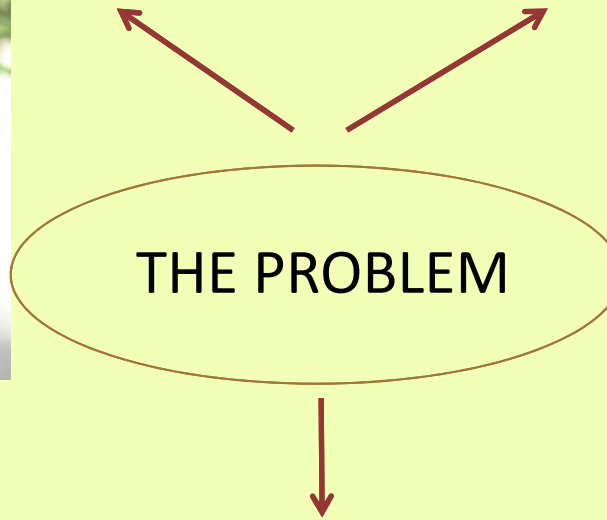
KTH



***Sustainable  
plant protection strategy  
by potentiating  
the plants' own defense***



Forestry



Agriculture



Pesticides

## **RESEARCH REGARDING DEFENSE AGAINST PINE WEEVILS**

- ◆ Changed scent (volatiles) and taste (extractives)
- ◆ Decreased damage by pine weevils
- ◆ Epigenetic changes (DNA methylation)



Seed treatment



Conifer seedlings



Field studies

# Epigenetic programming

*DNA densely packed*

*inaccessible DNA*

*silent genes*

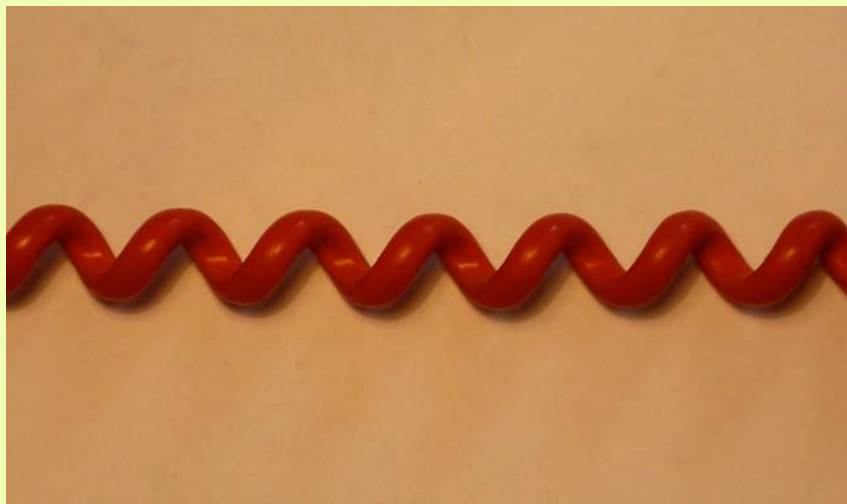



signals  unpacking/packing

*DNA loosely packed*

*accessible DNA*

*available genes*



signals  gene activation  
↓  
defense



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# THANK YOU!

## Cooperation:

- *Organic chemistry/Ecological chemistry, KTH*
- *Forest and wood technology, Högskolan Dalarna*
- *Botanical department, SU – Högskolan i Hedmark, Norway*

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