

Institute for Forest Growth, Freiburg

Forest District Office, Johanniskreuz

Applied Period Presentation

-- MSc European Forestry 2006/2008 --

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Institute for Forest Growth

□ Albert-Ludwigs University

■ Faculty of Forest and
Environmental Sciences

□ *Institute for Forest Growth*
(IWW)

IWW – Research Field 1/2

□ The IWW:

- Studies the *growth* of trees in their environment,
 - Develops *decision-tools* for controlling forest growth, and
 - Provides *methods for exploration* of tree growth.
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IWW – Research Field 2/2

- Research focus on:
 - Ecological bases of forest growth
 - Environmental effects
 - Controlling of forest growth
 - Forest management systems
 - Methods of forest growth research
 - Quantitative analysis methods
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IWW – Furthermore...

- Involved in *teaching*: BSc, MSc and international teaching networks
 - Working nationally and internationally
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1. *Oak-Management*

- Sessile and Pendunculate Oak
 - Important species
 - High-quality timber

 - Problem: management-costs are high
 - Need for minimizing costs
-

1. *Oak-Management*

- Management in the past:
 - Stand-based approach
 - Index-numbers
 - Intensive management
 - Site preparation
 - Planting
 - Weed control
 - Vegetation walls
 - Etc.
-

1. Oak-Management

- New perspectives
 - Modeling studies > single-tree model:

$$\text{Crown width } b = 0,20 + 0,209 * dbh - 0,015 * age \text{ } A$$

- *Growing space very important!*
 - Planning of thinning-treatments for individual trees
-

1. Oak-Management

- Shift in focus:
 - Stand-based → tree-individual approach

 - Proposed silvicultural system:
 1. Producing branch-free wood
 - Light-competition > self-pruning
 - Management minimized
 2. Diameter-increment of PCT's
 - Regular, low-intensity thinnings
-

2. Beech-Management

- Permanent plot research on Freiburg's „Schoenberg“
 - ...to get quantitative information about the growth of heavily crown thinned European Beech (*Fagus sylvatica* L.), with the aim of keeping the clear bole length constant
-

2. Beech-Management

- New approach in this research:
 - Keeping the clear bole length constant
 - To prevent problems with diseases, fungi and red cores.
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2. Beech-Management

Permanent plot set-up:

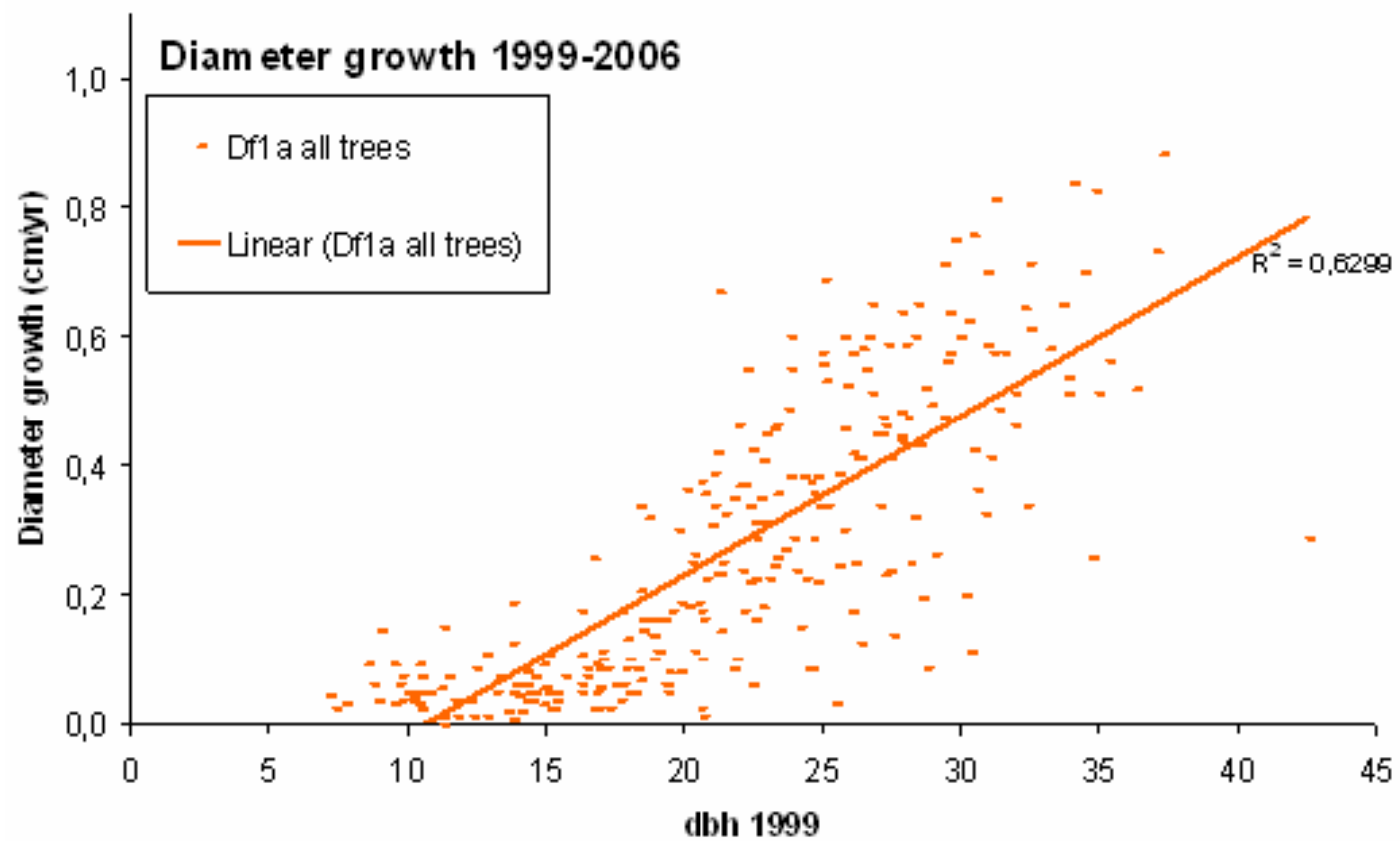
- Control plot Df1a
- Thinning plot Df1b

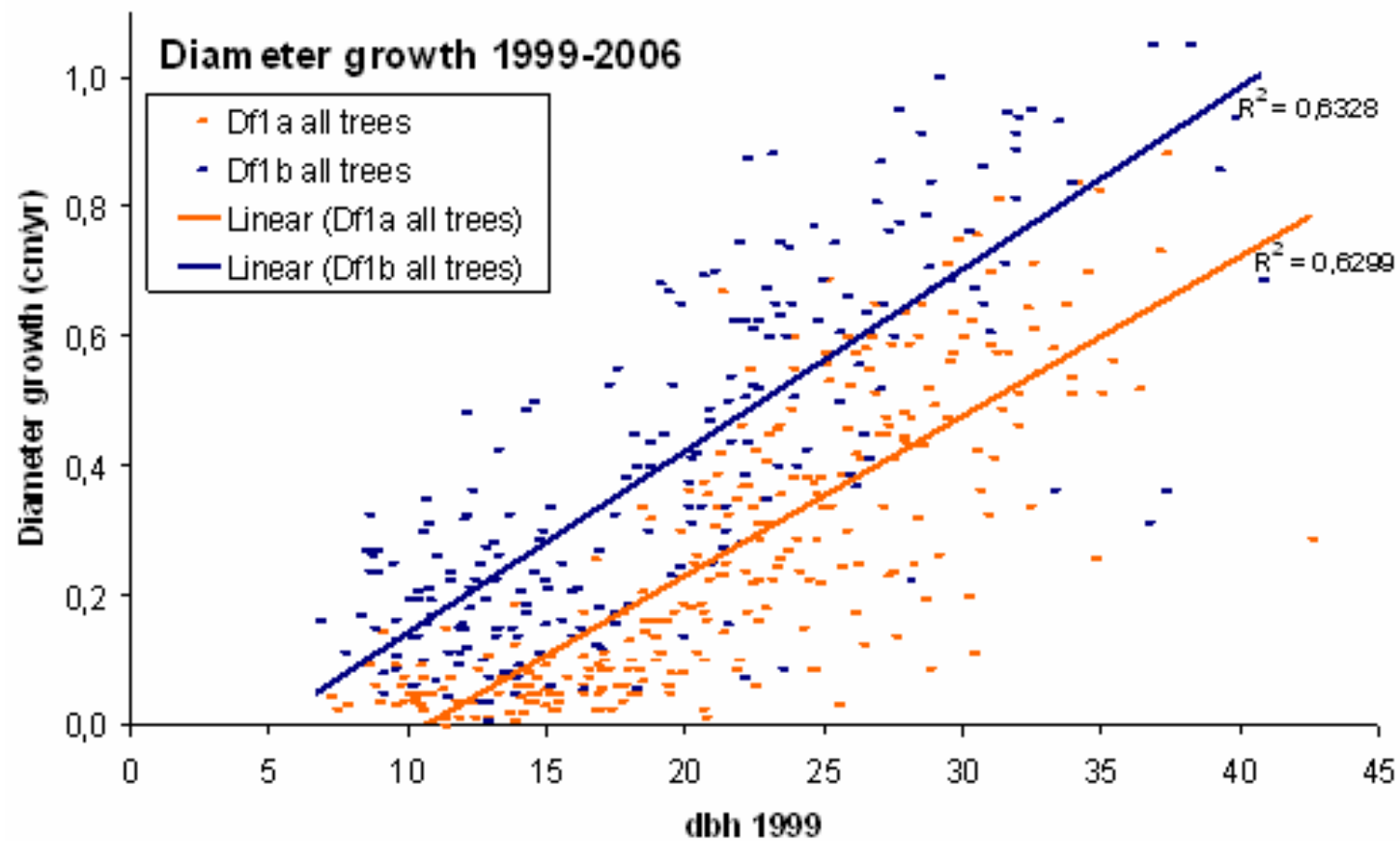
Data from 1993, 1999 and 2006:

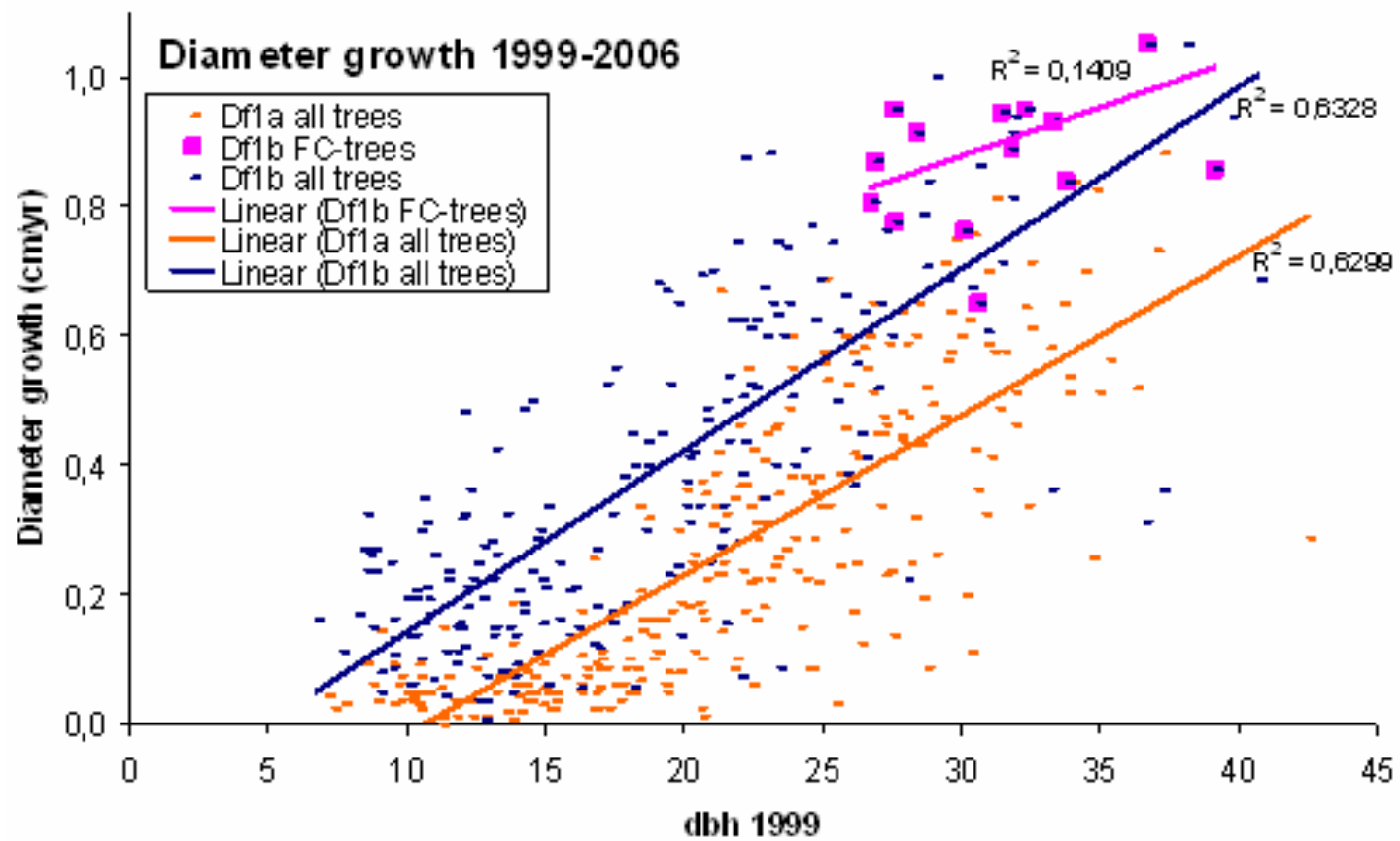
- Dbh, length of clear bole, tree height
 - Spatial arrangement data
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2. Beech-Management

- Some results:
 - High diameter increment:
 - Df1a: $I_{\text{diam,FCT}} = 6,7\text{mm/yr}$
 - Df1b: $I_{\text{diam,FCT}} = 9,0\text{ mm/yr}$
 - Length of clear bole increasing
 - Df1a: $av_{\text{FCT}} = +1,7\text{m}$
 - Df1b: $av_{\text{FCT}} = +0,4\text{m}$
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Johanniskreuz

- ❑ Forest district office with Europe's most valuable Oak-stands!
 - ❑ Traineeship of 3 weeks, supervised by Johanniskreuz' Forest District Officer and his foresters
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Evaluation

- Institute for Forest Growth, Freiburg:
 - People very busy, but helpful
 - Own initiative
 - Integrated in the organization
 - Meetings, seminars, business-trip etc.
 - A great experience
 - Language problem?

 - Forest District Office of Johanniskreuz:
 - Really interesting and instructive
 - Again language..
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Questions?

