

Mendel University in Brno  
Faculty of Forestry and Wood Technology  
Department of Wood Science

## Wood Anatomy

WAEF-pra04

**The identification of the most important  
softwoods according to microscopic features**  
*working sheet for practice*

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INVESTMENTS IN EDUCATION DEVELOPMENT

## **(WAEF-pra04) The identification of the most important softwoods according to microscopic features**

### **1 The Goal**

- To get skill to identify particular features of microscopic wood structure
- To get skill to identify kinds of woods in the group of softwoods

### **2 Theoretical knowledge for practice**

- Features of microscopic wood structure
- Features of particular wood kinds in the group of softwoods

#### ***Questions on theoretical knowledge***

1. Write down types of cells that form softwood. \_\_\_\_\_, \_\_\_\_\_.
2. Which softwood species have resin canals? \_\_\_\_\_.
3. What type of rays is formed by parenchyma cells only, i.e. without ray tracheids?  
\_\_\_\_\_

### **3 Tools & equipment**

- working sheet
- set of microscopic samples of softwoods
- microscope

### **4 Procedure**

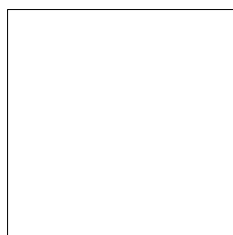
Observe microscopic features of wood on particular samples as it is required in following tasks. Results of observations must be written down or drawn as required. Ask teacher to check each finished task. If any errors occurred, correct them.

### **Task 1 – Features of softwood microscopic structure**

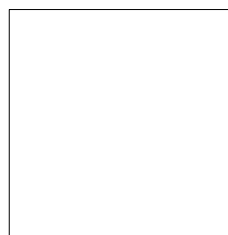
1. Observe and draw in the tangential view:

a) uniseriate ray

b) multiseriate ray with horizontal resin canal in the centre

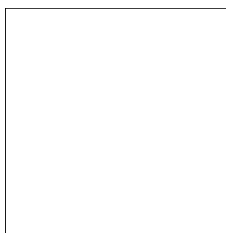


a)

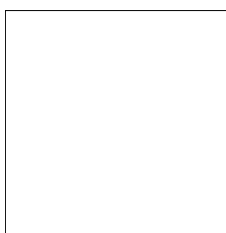


b)

2. Observe and draw cross field (*R*) in *Pinus sylvestris*.



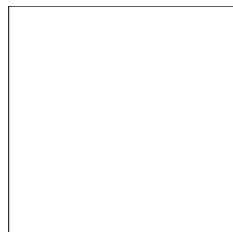
3. Observe and draw pairs of bordered pits in the radial wall of tracheid in *Larix* spp.



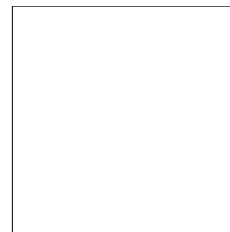
**Task 2 – Differences between species**

1. Observe and draw differences in species with resin canals in:

- a) tranverse section
- b) tangential section

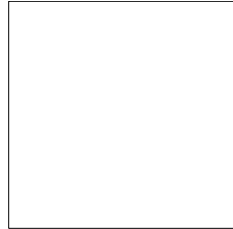


a)

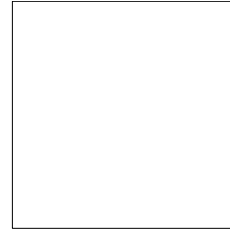


b)

2. Observe and draw differences between (a) *Pinus sylvestris* and (b) *Pinus strobus* in structure of ray tracheid (R)



a)



b)

3. What is difference between *Taxus* and *Pseudotsuga*?
4. What is difference between *Pseudotsuga*, *Picea* and *Larix*?
5. What is difference between *Picea* and *Larix* in the radial section?
6. What is difference between *Abies* and *Juniperus* in the transverse section?