

## **PROFILE**

**BAUCHER MARIE, PhD, Associate Professor**

Nationality: Belgian

Date of birth: 25.10.1964

### **Participation in COST Action FP0905:**

Member of MC, Member of WG1

*ESR at the time of starting the Action:* Not

### **Contact data:**

Institution/Organisation: Université Libre de Bruxelles (ULB)

Address: Laboratoire de Biotechnologie Végétale (LBV),  
8 rue Adrienne Bolland  
6041 Gosselies  
Belgium

Email: mbaucher@ulb.ac.be

Phone: +32 2 650 95 79

Fax: +32 2 650 95 78

Personal webpage (if available)

Institute web page: <http://lbv.ulb.ac.be/>

### **Research area and species (key words):**

Tree biotechnology, wood formation, vascular tissues, *Populus*

## CURRICULUM VITAE (Max 2 pages)

### Present position

Since 2008 Senior Research Associate of the Belgian Fund for Scientific Research (FNRS-FRS) at ULB (Belgium)

### Education/Professional Career

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|-----------|--|
| 2000-2008 | Research Associate of the Belgian Fund for Scientific Research (FNRS-FRS) at ULB (Belgium) |
| 1997-2000 | Scientific Research Worker of the Fund for Scientific Research at ULB (Belgium)            |
| 1991-1997 | Researcher at the Laboratorium voor Genetica, Universiteit Gent (Belgium)                  |
| 1989-1992 | Researcher at the Laboratoire de Morphologie Végétale, ULB (Belgium)                       |

### Others

Since 2005 Associate Professor at ULB

### Research Projects (relevant to Action)

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| 2002-2006 | <i>Title:</i> FPS COST ACTION E28 (EU)<br>Role: Vice Chairman of the WG2 (Functional Genomics of Tree Maturation and Reproduction)<br>Title Genosilva: European Forest Genomics Network |
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### Selected Publications and Communications (relevant to Action)

1. VAN DOORSSELAERE, J., DUMAS, B., **BAUCHER, M.**, FRITIG, B., LEGRAND, M., VAN MONTAGU, M., and INZÉ, D. (1993). One-step purification and characterization of a lignin-specific O-methyltransferase from poplar. *Gene* 133, 213-217.
2. VAN DOORSSELAERE, J., **BAUCHER, M.**, FEUILLET, C., BOUDET, A.M., VAN MONTAGU, M., and INZÉ, D. (1995). Isolation of cinnamyl alcohol dehydrogenase cDNAs from two important economic species: alfalfa and poplar. Demonstration of a high homology of the gene within angiosperms. *Plant Physiol. Biochem.* 33, 105-109.
3. **BAUCHER, M.**, VAN DOORSSELAERE, J., GIELEN, J., VAN MONTAGU, M., INZÉ, D., and BOERJAN, W. (1995). Genomic nucleotide sequence of an *Arabidopsis thaliana* gene encoding a cinnamyl alcohol dehydrogenase. *Plant Physiol.* 107, 285-286.
4. VAN DOORSSELAERE, J., **BAUCHER, M.\***, CHOIGNOT, E., CHABBERT, B., TOLLIER, M.-T., PETIT-CONIL, M., LEPLÉ, J.-C., PILATE, G., CORNU, D., MONTIES, B., VAN MONTAGU, M., INZÉ, D., BOERJAN, W., and JOUANIN, L. (1995). A novel lignin in poplar trees with a reduced caffeic acid/5-hydroxyferulic acid O-methyltransferase activity. *Plant J.* 8, 855-864. \* Equal contribution
5. **BAUCHER, M.**, CHABBERT, B., PILATE, G., VAN DOORSSELAERE, J., TOLLIER, M.-T., PETIT-CONIL, M., CORNU, D., MONTIES, B., VAN MONTAGU, M., INZÉ, D., JOUANIN, L., and BOERJAN, W. (1996). Red xylem and higher lignin extractability by down-regulating a cinnamyl alcohol dehydrogenase in poplar (*Populus tremula x P. alba*). *Plant Physiol.* 112, 1479-1490.
6. **BAUCHER, M.**, MONTIES, B., VAN MONTAGU, M., and BOERJAN, W. (1998). Biosynthesis and genetic engineering of lignin. *Crit. Rev. Plant Sci.* 17, 125-197.
7. **BAUCHER, M.**, CHRISTENSEN, J.H., MEYERMANS, H., CHEN, C., VAN DOORSSELAERE, J., LEPLÉ, J.-C., PILATE, C., PETIT-CONIL, M., JOUANIN, L., CHABBERT, B., MONTIES, B., VAN MONTAGU, M., and BOERJAN, W. (1998). Applications of molecular genetics for biosynthesis of novel lignins. *Polymer Degrad. Stab.* 59, 47-52.
8. **BAUCHER, M.**, BERNARD-VAILHÉ, M.A., CHABBERT, B., BESLE, J.-M., OPSOMER, C., VAN MONTAGU, M., and BOTTERMAN, J. (1999). Down-regulation of cinnamyl alcohol dehydrogenase in transgenic alfalfa (*Medicago sativa* L.) and the impact on lignin composition and digestibility. *Plant Mol. Biol.* 39, 437-447.
9. CHEN, C., **BAUCHER, M.**, CHRISTENSEN, J.H., and BOERJAN, W. (2001). Biotechnology in trees: towards improved paper pulping by lignin engineering. *Euphytica* 118, 185-195.
10. MELLEROWICZ, E., **BAUCHER, M.**, SUNDBERG, B., and BOERJAN, W. (2001). Unravelling cell wall formation in the woody dicot stem. *Plant Mol. Biol.* 47, 239-274.
11. SIBOUT, R., **BAUCHER, M.**, VAN DOORSSELAERE, J., GATINEAU, M., MILA, I., POLLET, B., MABA, B., PILATE, G., LAPIERRE, C., BOERJAN, W., and JOUANIN L. (2002). Expression of a poplar cDNA encoding a ferulate-5-hydroxylase increases S lignin deposition in *Arabidopsis thaliana*. *Plant Physiol. Biochem.* 40: 1087-1096
12. **BAUCHER, M.**, HALPIN, C., PETIT-CONIL, M. and BOERJAN, W. (2003) Lignin: genetic engineering and impact on pulping. *Crit. Rev. Biochem Mol. Biol.* 38, 305-350.
13. BOERJAN, W, RALPH, J., and **BAUCHER M.** (2003). Lignin biosynthesis. *Annual Rev. Plant Biol.* 54: 21.1-21.28.
14. VAN RAEMDONCK, D., PESQUET, E., CLOQUET, S., BEECKMAN, H., BOERJAN, W., GOFFNER, D., EL JAZIRI, M., and **BAUCHER, M.** (2005). Molecular changes associated with the setting up of secondary growth in aspen. *J. Exp. Bot.* 56, 2211–2227 (Issue's cover illustration).
15. **BAUCHER M**, EL JAZIRI M and VANDEPUTTE O (2007). From primary to secondary growth: origin and development of the vascular system. *J. Exp. Bot.* 58, 3485-3501
16. KOHLER A., RINALDI C., DUPLESSIS S., **BAUCHER M.**, GEELLEN D., DUCHAUSSOY F., MEYERS B.C., BOERJAN W., and MARTIN F. (2008). Genome-wide identification of NBS resistance genes in *Populus trichocarpa*. *Plant Molecular Biology*, 66, 619-636 (Issue's cover illustration).
17. MUKOKO BOPOPI J., VANDEPUTTE O.M., HIMANEN K., MOL A., VAESSEN Q., EL JAZIRI M., and **BAUCHER M.** (2010). Ectopic expression of *PtaRHE1*, encoding a poplar RING-H2 protein with E3 ligase activity, alters plant development and induces defence-related responses. *J Exp Bot.* 61:297-310 (Issue's cover illustration).

## **RESEARCH INSTITUTE : Laboratoire de Biotechnologie Végétale (LBV)**

### Description

The research projects developed in the LBV are focused on the understanding of the molecular mechanisms controlling plant development and its integration in the environment.

The main topics include:

- Study of the molecular mechanisms underpinning wood formation in poplar (*Populus tremula x P. alba*)
- Utilisation of the hyperplasia forming bacterium, *Rhodococcus fascians*, for the conservation and the valorisation of biodiversity

### Infrastructure

Equipment and infrastructure at LBV are designed to cultivate plant *in vitro* and *in vivo* (phytotron), to maintain bacteria *in vitro*, to use molecular biology techniques and make microscopic observations

In addition LBV has access to other equipment (RT-qPCR, sequencing and ultrasequencing, 2D-DIGE, RMN, MS, confocal microscopy, etc.) localized in other entities of the [Biopark Charleroi Brussels South](#) or other campus of the [Université Libre de Bruxelles](#)