

Camille BATHELLIER

PhD student (3rd year)
Date of birth: 6th November 1982

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75015 Paris
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Work experience:

- 2005-2008** **PhD Thesis: I will defend my PhD Thesis in November 2008.**
Isotopic approach of root respiratory metabolism on *Phaseolus vulgaris* L.
PhD supervisor: Jaleh Ghashghaie
Co-supervisors: Guillaume Tcherkez, Franz Badeck and Gabriel Cornic.
Laboratory of Plant Ecophysiology, Université Paris-Sud (Orsay-France)
- 2005** **Master training period (Master Thesis):**
The origin of the isotopic signature of root respired CO₂ in French bean.
Supervisor: Jaleh Ghashghaie
Laboratory of Plant Ecophysiology, Université Paris-Sud (Orsay-France)
- 2003** **Licence Trainee:**
Study of water stress on *Quercus suber* L. using stable isotopes (2 months, in the frame of NETCARB European project)
Supervisors: Manuela Chaves and Cathy Besson.
Laboratory of ecophysiology, superior institute of agronomy (Lisbon-Portugal)

Education:

- 2004/2005** **Master degree in vegetation science**
Speciality: research in physiology, ecophysiology and plant engineering
Obtained *with honours* (Université Paris-Sud)
- 2003/2004** **4th year university degree on population and ecosystem biology**
Obtained *with honours* (Université Paris-Sud)
- 2002/2003** **Bachelor degree in biochemistry** (Ecole Normale Supérieure, ENS, Paris)
- 2001/2002** **2nd year university degree in life science**
Obtained *with honours* (Université Paris-Sud)

Theoretical and practical skills :

Theoretical: Plant (eco)physiology, especially photosynthesis/respiration, carbon and nitrogen primary metabolism, physiology of germination.
Use of stable isotopes in plant ecophysiology.

Practical : Mass spectrometry (IRMS et GC-MS)
Gas exchange (Licor 6400 and oxygen electrode)
HPLC
R software

Additional education :

- 2006** Course entitled "mathematics applied to biology" (20-24 February)
Wageningen university, Netherlands)
- 2006** Courses of "political science" at the University Paris I-Panthéon-Sorbonne (6 months):
"transformations in modern societies" and "political philosophy"
- 2007** Spring school on « Stable Isotopes in Ecology » (2-13 of April, University of **Vienna, Austria)**

Student supervision:

- 2005** 6 week co-supervision (with Jaleh Ghashghaie) of 2 master students:
- **Philippe Couzi**
- **Sébastien Harscoët**
- 2006** 6 week co-supervision (with Jaleh Ghashghaie) of a Master student:
- **Julien Laurette**: « Isotopic discrimination during potato tuber sprouting ».
- 2006** 4 month co-supervision (with Jaleh Ghashghaie) of a Licence student:
- **Florian Dumas**: Carbohydrate Extraction on labelled roots for isotopic analyses

Languages:

- French: mother tongue
- English : Fluent speaking, writing and reading
- Spanish : Rapidly perfectible level
- Portuguese : Rapidly perfectible level
- Chinese : basic knowledge

Extra-scientific Interests:

Since 2000, I play the guitar in a band called “Trankilesha”, and I belong to the association « trankil'assos », that I presided for 2 years (2006-2007). This association was created to promote the activity of the band (more than 120 gigs, 4 tours, 2 albums), and to organize cultural events.

SCIENTIFIC COLLABORATIONS:

Franz Badeck (PIK-Potsdam) on the carbon isotope discrimination during respiration of autotrophic and heterotrophic organs (joint paper: Bathellier *et al.* 2008, in *New Phytologist*).

Guillaume Tcherkez and **Gabriel Cornic** (Université Paris-Sud) on the metabolic origin of root-respired CO₂ (joint paper Bathellier *et al.* Submitted to *Plant Physiology*).

Richard Bligny (CEA, Grenoble) on the positional labelling of roots followed by RMN analysis (joint paper Bathellier *et al.* Submitted to *Plant Physiology*).

Lisa Wingate (Edinburg University, UK) on the soil respiration of a forest ecosystem (joint paper Wingate *et al.*, in preparation).

Claire Damesin (Université Paris-Sud) on the isotope discrimination associated with starch remobilization during potato tuber sprouting (joint paper Bathellier *et al.* in preparation).

SCIENTIFIC PUBLICATIONS

Articles published in peer reviewed journals:

- 2008** **Bathellier C.**, Badeck F-W., Couzi P., Harscoët S., Mauve C. & Ghashghaie J. – Divergence in $\delta^{13}\text{C}$ of dark respired CO₂ and bulk organic matter occurs during transition between autotrophy and heterotrophy in *Phaseolus vulgaris* L. plants. *New Phytologist* 177: 406-418.

Articles submitted:

- Bathellier C.**, Tcherkez G., Cornic G., Bligny R., Dumas F. & Ghashghaie J. – Metabolic origin of the $\delta^{13}\text{C}$ of respired CO_2 in roots of *Phaseolus vulgaris*. (submitted to *Plant Physiology*)
- Richter A., Gleixner G., Brugnoli E., Gessler A., Ghashghaie J., **Bathellier C.**, Hettmann E., Jäggi M., Kodama, Soe A., Volder F., Werner R., & Waneck W. – Comparison of methods for preparation of starch and soluble sugars for carbon isotope composition in plant materials. (about to be submitted to *Rapid Communications in Mass Spectrometry*).

Articles in preparation:

- Wingate L., Maseyk K., Almeida P., Ghashghaie J., **Bathellier C.**, Reymont M.B., Seibt U. & Mencuccini M. – Carbon and oxygen stable isotope signals of soil respiration from a Mediterranean oak woodland.
- Bathellier C.**, Maunoury F., Laurette J., Fresneau C., Tcherkez G., Damesin C., Ghashghaie J. – Isotope discrimination associated with starch remobilization during potato tuber sprouting.

Oral communications

Invited Junior keynote speaker:

- 2008** **Bathellier C.**, Badeck F-W., Couzi P., Harscoët S., Mauve C., Ghashghaie J. – Carbon isotope discrimination during dark respiration in autotrophic and heterotrophic organs in *Phaseolus vulgaris* L. *JESIUM: 2d European Stable isotope User Meeting: « Advances in the use of stable isotopes »*. (31th August- 5th September), **Giens-France**.

Talks:

- 2008** **Bathellier C.**, Tcherkez G., Cornic G., Ghashghaie J. – Origine métabolique de la composition isotopique du CO_2 respiré des racines chez *Phaseolus vulgaris*. *10^e Journées d'Ecologie Fonctionnelle, JEFs* (2-4 avril 2008), **La Grande Motte (Montpellier, France)**.
- 2007** **Bathellier C.**, Badeck F.W., Tcherkez G., Cornic G. & Ghashghaie J. – Carbon isotope fractionation during respiration of different organs in *Phaseolus vulgaris* during ontogeny. *SIBAE-BASIN Spring School*, on "Stable Isotopes in Ecology _" **Vienne, Austria**.
- 2007** **Bathellier C.** – Mise en place de la signature isotopique des organes autotrophes et hétérotrophes au cours de l'ontogénèse chez *Phaseolus vulgaris*. *Journées de l'Unité (ESE), UMR 8079* (31 May-1^{er} June), **Orsay, France**.
- 2006** **Bathellier C.**, Badeck F-W., Couzi P., Harscoët S., Cornic G. & Ghashghaie J. – Discrimination respiratoire et mise en place de différence entre organes lors de l'ontogénèse chez *Phaseolus vulgaris* L. *4^e Journées de la Société Française des Isotopes Stables et 23^e journées Française de la Spectrométrie de Masse* (11-14 September) **Nantes, France**.

Other abstracts in conference proceedings:

- 2007** **Bathellier C.**, Badeck F.W., Cornic G. & Ghashghaie J. – Carbon isotope fractionation during respiration of different organs in *Phaseolus vulgaris* during ontogeny. *European Symposium on the use of stable isotopes in tree physiology and forest ecology* (3 May) **Nancy, France**.
- 2007** Ghashghaie J., **Bathellier C.**, Cornic G., Badeck F-W. – Carbon isotope fractionation during root respiration. *ESF-SIBAE Workshop: «Disentangling abiotic and biotic effects on soil Respiration»*. (12-13 March), **Innsbruck, Austria**.
- 2007** Ghashghaie J., **Bathellier C.**, Badeck F-W. – Carbon isotope fractionation during dark respiration in autotrophic (leaves) and heterotrophic (roots) organs. *9th European Society for Isotope Research (ESIR) workshop*. (23-28 June), **Cluj-Napoca, Romania**.

- 2007 Ghashghaie J., Bathellier C., Badeck F-W. – Stable carbon isotope fractionation during respiration: Potential impact on C isotope signature of plant organic matter. ***ESF-SIBAE Workshop on “Stable Isotopes in Dendroclimatology”***. (12-16 February) **Potsdam, Germany.**
- 2007 **Bathellier C.,** Badeck F-W, Couzi P., Harscoët S., Mauve C., Cornic G. & Ghashghaie J. – Impact de la discrimination respiratoire sur la différence isotopique ($^{13}\text{C}/^{12}\text{C}$) entre organes hétérotrophes et autotrophes au cours de l'ontogenèse chez *Phaseolus vulgaris* L. (***JEF : 9^e Journées d'Ecologie Fonctionnelle***), (19-22 mars) **Biarritz, France.**
- 2006 **Bathellier C.,** Badeck F-W., Couzi P., Harscoët S., Cornic G. & Ghashghaie J. – Origine des différences de signature isotopique entre organes lors de l'ontogenèse chez *Phaseolus vulgaris* L. ***2^e Journées Scientifiques du Réseau Français de Métabolomique et de Fluxomique*** (13-15 décembre) **Clermont-Ferrand, France.**

Posters

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- 2008 Maunoury-Danger F., **Bathellier C.,** Laurette J., Tcherkez G., Ghashghaie J., Damesin C. – Does any $^{13}\text{C}/^{12}\text{C}$ fractionation occur during starch remobilisation in potato tubers? ***JESIUM: 2d European Stable isotope User Meeting : « Advances in the use of stable isotopes »***. (31th August- 5th September), **Giens-France.**
- 2008 Mauve C., **Bathellier C.,** Ghashghaie J. Tcherkez G. – Kinetic $^{12}\text{C}/^{13}\text{C}$ isotope fractionation by invertase: Evidence for a very small in vitro isotope effect and comparison of 2 techniques for the isotopic analysis of carbohydrates. ***JESIUM: 2d European Stable isotope User Meeting : « Advances in the use of stable isotopes »***. (31th August- 5th September), **Giens-France.**
- 2008 Devaux M., Bert D., Ghashghaie J., Ogée J., Wingate L., Bosc A., Lambrot C., Burlett R., **Bathellier C.,** Lousteau D. – Seasonal dynamics of isotopic composition of phloem sugars in mature pine forest. ***JESIUM: 2d European Stable isotope User Meeting : « Advances in the use of stable isotopes »***. (31th August- 5th September), **Giens-France.**
- 2008 Ngao J., Damesin C., Berveiller D., Chemidlin-prevost-Bouré N., Maunoury F., Plain C., Marron N., **Bathellier C.,** Ghashghaie J., Cotrufo M.F., Epron D. – Impact of water availability on efflux and $\delta^{13}\text{C}$ of CO_2 respired by from soil and trunk in a Mediterranean shrub ecosystem. ***JESIUM: 2d European Stable isotope User Meeting : « Advances in the use of stable isotopes »***. (31th August- 5th September), **Giens-France.**
- 2008 **Bathellier C.,** Badeck F-W., Couzi P., Harscoët S., Mauve C., Ghashghaie J. – Différence de discrimination isotopique ($^{13}\text{C}/^{12}\text{C}$) respiratoire entre organes autotrophes et hétérotrophes chez *Phaseolus vulgaris* L. ***10^e Journées d'Ecologie Fonctionnelle, JEFs*** (2-4 avril 2008), **La Grande Motte (Montpellier, France).**
- 2006 Wingate L., Maseyk K., Almeida P., Ghashghaie J., **Bathellier C.,** Reymont M.B., Seibt U., Mencuccini M. – High-resolution time-series of the d^{13}C and d^{18}O of soil CO_2 efflux after a rain pulse event at a Mediterranean site. ***BASIN-SIBAE Conference: “Isotopes as Tracers of Ecological Changes”*** (13-15 March) **Tomar, Portugal.**
- 2006 Badeck F., Tcherkez G., Nogués S., **Bathellier C.,** Piel C. & Ghashghaie J. - Post-photosynthetic fractionation of stable carbon isotopes between plant organs – a widespread phenomenon. ***BASIN-SIBAE Conference: “Isotopes as Tracers of Ecological Changes”*** (13-15 March) **Tomar, Portugal.**
- 2006 Badeck F., Tcherkez G., **Bathellier C.,** Nogués S., Piel C. & Ghashghaie J. - Discrimination post-photosynthétique : Origine de la différence isotopique ($^{13}\text{C}/^{12}\text{C}$) entre organes de plantes. ***8^e Journées d'Ecologie Fonctionnelle, JEF*** (6-9 March 2006), **Nouan-Le Fuzelier (Orléans), France.**