Access

By car:

A71 (Paris) – A89 (Bordeaux) – A72 (Lyon) – A75 (Montpellier) exit 16 - Site de Crouël

By train:

Gare SNCF Clermont-Ferrand

By plane:

The international airport "Clermont-Ferrand Auvergne" is located 7 km East of the city center and 5 km from the site.

Contact and Registration

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With the support of the competitivity cluster Céréales Vallée:

AllEnvi
Alliance nationale de recherche pour l'Environnement

GIS bV biotechnologies vertes

WORKSHOP

Nitrogen fixation: Applications to cereals

March 14th 2013

10.00am to 6.00pm

Location

INRA– Site de Crouël
5 chemin de Beaulieu
63100 Clermont-Ferrand

Nitrogen fixation Application to Cereals

Global food security and the high economic and environmental cost of nitrogen fertilizers brings renewed calls for investigation of the feasibility of cereals to benefit more from biological nitrogen fixation (BNF), a trait which currently only major crops of the legume family benefit. Recent discoveries that there are marked similarities between the signalling pathways and host cell responses in arbuscular mycorrhizal, actinorhizal and legume symbioses and that the necessary genes seem to be widespread in the plant kingdom, provide a new stimulus for research in this area. In addition genomic strategies allow the possibility of improving more traditional approaches to cereals benefitting from BNF. Thus, different strategies can be envisaged from genetic engineering of cereals (using either nitrogen fixation genes or genes to promote symbiosis with diazotrophs) to the improvement of co-cultivation of cereals with free-living diazotrophs or legumes.

In this context, the scope of this workshop is to present a global vision of the state-of-the-art research being carried out on the topic of biological nitrogen fixation implementation for cereals. This event will bring together private and public members of the French scientific community to promote exchange of information, to evaluate potential technology transfer applications, and to encourage common research projects. Finally, a general discussion led by the GIS BV governing board and the coordinators of the working group "Plant biology and biotechnologies" (GT4) of AllEnvi will set the basis for a position paper summarizing the position of the research community and making recommendations on the potential areas to support in national calls for proposals.

Scientific organisation committee :
Julie Cullimore, Jean Denarié (INRA Toulouse)

PRELIMINARY PROGRAM

9:30am	***Welcome – Coffee***	
10:00am	**Hélène Lucas** (INRA) **Pascual Perez** (Limagrain) **Grégoire Berthe** *(Céréales Vallées)*	**Introduction**
10:15am	**Jean-Michel Ané** *Department of Agronomy, University of Wisconsin Madison*	**Improving nitrogen fixation in cereals: problems, strategies and progress**
11:05am	**Guillaume Bécard** *LRSV UMR CNRS/UPS Toulouse*	**Mycorrhizal symbiosis and cereal improvement**
11:30am	**Clare Gough** *LIPM UMR INRA-CNRS Toulouse*	**Advances in understanding the legume-Rhizobium symbiosis and applications to nitrogen-fixing cereals**
12:10pm	**Didier Bogusz** *Equipe Rhizogenèse, UMR IRD/Université de Montpellier*	**Transfer of nitrogen fixation ability to cereals: contribution of actinorhizal symbioses**
12:35pm	**Nico Nouwen** *LSTM, UMR CIRAD/INRA/IRD/SUPAGRO/Université de Montpellier*	**Nod dependent versus Nod-independent symbiotic processes**
13:00pm	***Lunch-break***	

2:00pm	**Catherine Masson** *LIPM UMR CNRS-INRA, Toulouse*	**Experimental evolution : adaptation of bacteria to the plant environment**
2:20pm	**Yvan Moenne-Loccoz** *EcoMic UMR CNRS/ Université de Lyon, USC INRA, Lyon*	**Cereal root associations with nitrogen-fixing bacteria**
2:40pm	**Marie-Hélène Jeuffroy** *UMR Agronomie, INRA/ AgroParisTech Versailles-Grignon*	**Wheat and nitrogen function: analysis of cultivation systems and needs for the future**
3:05pm	**Jacques Le Gouis** *INRA, Clermont-Ferrand GDEC, UMR 1095*	**Cereals and nitrogen fixation: genetic variability and potential**
3:30pm	**Speaker to be confirmed**	
4:00pm	***Break***	
4:20pm	**Hélène Lucas** (INRA) **Pascual Perez** (Limagrain) *GIS BV Governing Board* ***Frédéric Gaymard*** *(INRA)* ***Thierry Gaude*** *(CNRS)* *Coordinators of the working group "Plant biology and biotechnologies" of AllEnvi.*	**Synthetic summary** **General discussion** **Conclusions**
6:00pm	***End of meeting***