

## **FABATROPIMED** (<http://www6.inra.fr/fabatropimed>)

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### **Agropolis Montpellier**

This news-letter is to prepare the final meeting of the FTM at **Montpellier 24-28 august**, acronymed ECOLEG for **ECOLOGICAL SERVICES OF LEGUMES** in agro-ECOsystems.

It also mentions the i) site web de FTM, ii) the data base of FTM as developed by D Blavet, P Soto et P Benezech with owncloud, iii) the latest report of FTM (available on request).

I am pleased to invite you to join us in August, and in advance, I thank you for your contribution for Ecoleg, particularly by sending PhD students to this meeting, with my very best wishes for cooperation, and my warmfull availability for any complementary information.

**ECOLEG: ECOSYSTEMIC SERVICES OF LEGUMES IN AGRO-ECOSYSTEMS** is confirmed to take place in Agropolis Montpellier Campus La Gaillarde, **between august 24th and 28th**, as final meeting of the GPF fabatropimed, and as an international symposium on the topic.

<https://colloque.inra.fr/ecoleg2015>

#### **Objective**

Fewer inputs and lesser dependency on chemical control of diseases become of paramount importance for the safety and impact on the environment. This implies new requirements with regard to the incorporation of legume species in agricultural systems and in forestry, including agro-forestry. Promoting the interaction of soil micro-organisms for legumes to acquire and use efficiently nitrogen (N) and phosphorus (P) will reduce the use of mineral-based fertilizers and increase carbon-dioxide sequestration. In addition, because of the high protein content of their seeds, grain legumes are attractive candidates for the plant-protein demand which has increased considerably over the last decades, both for food and feed uses.

For these purposes the components of an interdisciplinary strategy of research and participation of actors are proposed: Agronomy and environmental diagnosis, and sustainability assessment; N & P biogeographical cycles and C sequestration; Soil biota, symbiotic and rhizospheric microorganisms; candidate mechanisms and genes for N & P utilisation efficiency in plants. The objective of the meeting will be to revise the results obtained in these disciplinary fields over the last 5 years in PhD projects, on-going or yet defended in the above disciplines, and in multidisciplinary projects, including those coordinated by Eco&Soils of Montpellier like Intens&Fix and FabaTropiMed.

**Young scientists workshop:** Two days will be dedicated to young scientists having defended their PhD project on the topic during the last 5 years, or the students who are planned to defend their PhD project on the topic before the end of 2016. Let know to **previous or on-going PhD fellows** (Europe, Afrique, Amérique, Asie) on legume ecological services, that they are invited to spend the week of Ecoleg in Montpellier (**expenses and inscription covered by FTM**) if their **abstract** about a major result of their thesis (to be sent to [drevonjj@supagro.inra.fr](mailto:drevonjj@supagro.inra.fr)) would be selected for an oral presentation (20 min + 10 min questions).

**Preliminary program** <https://colloque.inra.fr/ecoleg2015>

### **Monday 24 August 2015**

9:00 am - 6:00 pm : Registration

10:30 pm - 12:30 pm : Opening of ECOLEG 2015 Symposium

2:00 pm - 6:00 pm : Session 1 **Innovation systems and sustainability assessment:** Interactions with farmers and local policy-makers for the development of legume crops, microbial inoculants and technical practices in reference agro-ecosystems; identifying possible innovation systems for the legume alternatives with description of past innovation trajectories by case studies; evaluation of the sustainability of the cropping system with legumes by means of indicators taking into account their economic performance and ecological services.

**Coordinated by M Dulcire (CIRAD-INNOVATION)**

### **Tuesday 25 August 2015**

9:00 am - 12:30 pm: Session **Restitution meeting with farmers and engineers of participatory projects with symbiotic legumes in Sud de France**

2:00 pm – 3:30 pm.: Session 2 **agronomy and environmental diagnosis:** agricultural and environmental interest and feasibility of symbioses between legumes and soil microorganisms; diagnoses on the biophysical environment such as pedological conditions of legume cultivation..

4:00 am - 5:30 pm : Session 3 **N & P bio-geochemical cycles and C sequestration:** C, N and P contents and dynamics in the soil-legume system; evaluation of symbiotic N<sub>2</sub> fixation, by isotopic methods and N balance studies, N<sub>2</sub>O emissions; N transfer between legume and non-N-fixing companion species; P bio-availability in relation with the proton efflux linked with N<sub>2</sub> fixation and releases by the degradation of legume residues; modelling of N & P and C cycles ; soil diachronic analyses in long-term agronomic trials.

### **Wednesday 26 August 2015**

9:00 am - 10:30 pm: Session 4 **Symbiotic and rhizospheric interactions:** isolation and characterization of rhizobia, mycorrhiza and rhizospheric bacteria; assessment of the persistence and competitiveness of the selected bacterial inoculants; localization of key mechanisms involved in physiological responses of the nodulated-root to phosphorus deficiency; analyzis of the effect of environmental conditions on functional diversity.

**Coordinated by R Duponnois (IRD-LSTM)**

11:00 am - 12:30 pm Session 5 **Physiological mechanisms and candidate genes:** P use efficiency for SNF; relation with SNF-regulation by nodule O<sub>2</sub> permeability and its link with a putative N feedback mechanism; ability of nodules to denitrify by reducing N<sub>2</sub>O to N<sub>2</sub>; physiological parameters and genetic markers for plant-breeding and inoculant programs.

2:00 pm - 6:00 pm: **Presentation of doctoral results relevant to sessions 1-5**

**Thursday 27 August 2015**

9:00 am - 12:30 pm: Session **Doctoral workshop**

12:30 pm - 1:30 pm: Lunch

1:30 pm - 12:00 pm: **Field visit followed by Fête du Cassoulet in Castelnaudary**

**Friday 28 August 2015**

9:00 am - 12:30 pm **Presentation of doctoral results**

12:30 pm - 1:45 pm: Lunch

2:00 pm - 4:00 pm: **Synthesis of doctoral presentations and workshop**

**Closure of the Symposium**

**Coffee breaks** of 30 min at 10 :30 am and 3 :30 pm. **Lunch** between 12:30 pm - 1:45 pm.

**Local committee** : D Blavet, D Desclaux, JJ Drevon, A Zanetto.

**Registration** <https://colloque.inra.fr/ecoleg2015>

**fees** 150 (full), 100 (student) et 80 (accompanying) PUIS 200, 120 et 100

**SITE WEB FTM** <http://www6.inra.fr/fabatropimed/Program-FTM>