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## Members' News

### » Sweet sorghum as bioenergy crop



The €3 million FP7-funded project SweetFuel kicked off end March 2009. This five-year project coordinated by Serge Braconnier from the French Agricultural Research Centre for International Development (CIRAD) aims

to develop ethanol production from sweet sorghum in temperate and semi-arid regions through genetic enhancement and improvement of cultural and harvest practices. The project involves ten partners, including academic laboratories as well as private companies or institutes, from seven countries, including India and Brazil.

Geopolitical tensions in some oil producing regions, uncertainties surrounding the future availability of non-renewable resources, and the need to mitigate negative impacts on climate through limitation of CO<sub>2</sub> release, have awakened a strong interest for biofuels and encouraged research in this area. Biofuels – solid, liquid or gas fuels derived from biomass – are today the only direct substitute for oil on a significant scale, particularly for the transport sector. Among the different crops that could be used for bioethanol production, sweet sorghum seems to have a great untapped potential.

Sorghum (*Sorghum bicolor* (L.) Moench) is a C4 plant that has very interesting characteristics such as a short growth cycle, high water and nutrient use efficiency, and wide adaptability to environment. Moreover, sweet sorghum can produce grains while accumulating sugars in stalks, making it a multipurpose crop (fuel–food–feed) that can reconcile energy and food security issues.

### Optimisation through breeding

SweetFuel includes a major breeding effort in three target environments (temperate, tropical and sub-tropical) and production systems, with a special focus on drought and poor soil adaptation. The aim is to identify QTLs or candidate gene sequence for marker-assisted selection to be used in breeding.

Scientists involved in the project will pay a special attention to cultural and harvest practices to identify agronomic determinants for optimising yield and resource. They will provide a plant model to test genotypes under different management and climatic scenarios and to determine potential geographic area of cultivation.

The project participants will also conduct a multi-criteria evaluation of the sustainability of the proposed sweet sorghum production systems.

Ultimately, project results, including seed, genotypes, recommended practices and concepts for commodity chain development, will be transferred to stakeholders (farmers, farmers' organisations, national agricultural research systems, agro-industrialists, and policy makers). It is expected the project will have a greater impact far beyond the target areas, stakeholders, countries involved in the project.

The SweetFuel project has been selected by the European Commission as potential twinning project between the EU and Argentina/MERCOSUR. It was presented at the twinning workshop organised by the EC in Buenos Aires (Argentina) on 7 and 8 May 2009.



[www.sweetfuel-project.eu](http://www.sweetfuel-project.eu)

Contact: Serge Braconnier



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### Correspondence should be addressed to:

Email: [contact-epsonews@epsomail.org](mailto:contact-epsonews@epsomail.org)

Mail: European Plant Science Organisation, Rue de l'Industrie 4, 1000 Brussels, Belgium

Tel/Fax: +32-(0)2-21362-60/69

[www.epsoweb.org](http://www.epsoweb.org)

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