



FIBRE QUALITY WORKSHOP

Université de Lille (FR) on January 18th 2016

The EC MultiHemp Project Consortium, in collaboration with a selection of experts, is offering a 1 day workshop to PhD students and Young researchers interested in the multifaceted world of using natural fibre crops for industrial applications.

Workshop programme:

09:40 **Welcome**

by **Simon Hawkins**, Unité de Glycobiologie Structurale et Fonctionnelle, Université de Lille

Stefano Amaducci, Scientific Coordinator Multihemp, Università Cattolica del Sacro Cuore

09:45 **Stefano Amaducci (Università Cattolica del Sacro Cuore) – Multihemp**

Following a multidisciplinary approach the EC project Multihemp aims to advance the use of hemp as a multipurpose crop. An introduction to the general strategy of the project, main objectives and a particular reference to hemp cultivation will be given.

10:15 **Jörg Müssig (Hochschule Bremen, City Univeristy of Applied Sciences) - The Importance of Fibre Quality for Industrial Applications.**

The main argument against industrial use of natural fibres is that quality depends on environmental conditions (in the field). However, it is possible to obtain fibres of consistent quality, and enhance predictability of the properties of natural fibre products by using a quality management system.

10:45 **Alexandra Lanot (Univeristy of York) - A biotechnological approach to hemp fibre quality.**

A key part of Multihemp is the development of new hemp varieties with improved quality for biorefinery applications. One approach is non-transgenic reverse genetics using TILLING to screen a mutant population for alterations in genes associated with fibre quality.

11:15 Coffee break

11:30 **Brigitte Chabbert (Fractionnement des AgroRessources et Environnement INRA/URCA FARE) - Cell-wall architectures in fibre crops.**

The physicochemical properties of fibers are related to their morphology and the structural characteristics of the cell walls and may greatly vary according to the fiber processing and their biological variability. Indeed plant fibers can be produced from a range of species and represent different tissues and cells. Plant fibers can be considered as complex composites material showing hierarchical and multilayered structures. Fibers exhibit micro-and nanostructural heterogeneity owing to the presence of different wall layers and corresponding chemical and structural arrangements.

Workshop programme continued:

12:00 LUNCH

13:00 **Simon Hawkins (Université de Lille) – Multiple approaches provide novel information on flax cell wall biology.**

Improvement in the quality of natural-fiber derived products (e.g. textiles, composites) not only depends upon a better understanding of post-harvest processing (retting, mechanical extraction, spinning, incorporation into composites etc.), but also requires greater knowledge about how plants construct these remarkable cells, as well as about the different factors (genetic, environment) affecting fiber properties and production. A wide range of different approaches (genomics, transcriptomics, proteomics, imaging and metagenomics) is currently allowing us to make significant advances in our knowledge about flax cell wall biology. Different examples will be rapidly presented to illustrate this point. The use of similar approaches in hemp should also lead to a better understanding of different biological processes in this economically interesting species.

13:30 **John Vidmar (Alberta Innovates Technology Futures) - Hemp in Canada, the fibre that counts is the one in the seed.**

John Vidmar is program leader at Alberta Innovates Technology Futures; he will conclude the presentations with a complementary view on natural fibres.

Presentations from PhD students and Young researchers

14:00-15:00 **4 presentations (approximately 12 minutes each + 3 minutes for questions)**

Frederique Hilliou, INRA, FR

Christophe Djemiel, Université de Lille, FR

Julien Le Roy, Université de Lille, FR

Katharina Haag, Hochschule Bremen, DE

15:00 Coffee break

15.15-16:15 **4 presentations (approximately 12 minutes each + 3 minutes for questions)**

Jana de Prez, KU Leuven, BE

Thibaud Sauvageon, Université Lorraine, FR

Uljana Iljina, Riga Technical University, LV

Antoine Gallos, AgroParisTech, FR

16:15-17:00 Open discussion on methodologies.

Closing comments from Simon Hawkins and Stefano Amaducci.