

## **Kenaf: a non-food multi-purpose crop for Southern Europe**

*E. Alexopoulou, M. Christou* - Center for Renewable Energy Sources (CRES), Pikermi, Greece

### **Introduction**

Kenaf is an annual fiber crop of great interest for both the production of industrial raw materials and as bio-fuel under the pedoclimatic conditions of south Europe. Although kenaf has been accepted by the European Commission as a “non-food set-aside” and designated for utilization in the production industrial fiber there is no much data concerning the productivity of the crop as well as its utilization for many industrial uses and energy production.

In March 2003 a European Network is going to start entitled “Biokenaf-Biomass Production Chain and a Growth Simulation Model” aiming at addressing the sustainable yielding potential, the alternative industrial bio-products as well as the fuel quality of kenaf as a non-food crop, under certain cultivation techniques, in south Europe.

### **Purpose of the work**

The *overall objective* of the project is to introduce and evaluate kenaf as a non-food crop through an integrated approach for alternative land use in south eu that will provide diversified opportunities for farmers and biological materials for the “bio-based industries” of the future.

### **Approach**

Eight workpackages (wps) have been scheduled in order to fulfill the main and the scientific objectives of this proposed rtd project.

*WP1* is a general work package aiming at the coordination of the project and establishment of a link with the American Kenaf Society (AKS). *WP2* aims at the determination of the sustainable yielding potential of kenaf as energy crop at several locations in southern Europe. The appropriate varieties and cultural practices for yield maximization in relation to the specific pedoclimatic conditions of each cultivation site will be deterred. Furthermore, this work package will provide data to the *WP3*, in which a dynamic growth simulation model will be developed. The model development will be a very useful tool for the yield and energy production prediction of kenaf it can be further used as a core module of any expert system for economic quantitative land evaluation including land uses systems with kenaf. In *WP4* the appropriate harvesting time and methods as well as the appropriate storage methods (indoors and outdoors) will be determined. In *WP5* the suitability of kenaf both for selected industrial (high added value) and for thermochemical energy applications (combustion, gasification and pyrolysis) on the whole crop and the core fiber remaining after removal of the high value bark fiber. Environmental impact assessment for the whole production chain of the crop and Life Cycle Analysis (LCA) taking into account both the industrial and thermochemical energy applications of the crop will be conducted in *WP6*. The valuable information that will be collected in the *WP2*, *WP3*, *WP4*, *WP5* and *WP6* will be used in *WP7* for the cost analysis of kenaf as a “non-food crop” in comparison to other annual traditional crops. In *WP8*, all the above-described work packages will be used as a base for the development of a Handbook and a Booklet for kenaf. In the Handbook and the Booklet apart from the project information, an extensive literature review will be included to define the state-of-the-art of kenaf in Europe.

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