



*LEGUMES*  
*for*  
*sustainable agriculture*

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*LEGUMES*

- ▶ Arabidopsis Thaliana  
[Dec.14,2000,Nature],  
first plant genome
- ▶ Medicago truncatula  
1800 Mbp
- ▶ Lotus japonicus  
400Mbp
- ▶ Lupinus
  - \* soil enrichment
  - \* removal of heavy  
ions
  - \* content of:
    - seed proteins
    - unsaturated fatty  
acids



## *AMBITIONS*

- ▶ Integrated and sustainable approach,
- ▶ systematic and complex studies,
- ▶ structural and functional genomics



## *AIMS*

*within functional and structural genomics*

- ▶ Identification and characterisation of lupin gene complexes and single genes;
- ▶ construction of genetic and physical maps of lupin crops;
- ▶ implementation of macro- and microarrays of gene sequences for gene identification;
- ▶ introduction of new biotech approaches for breeding practice
- ▶ translational apparatus: structure-function.



## *ACTIVITIES*

- ▶ RESEARCH:
  - ▶ Structural genomics;
  - ▶ identification and functional analysis of genes;
  - ▶ computational genomics
  - ▶ advantages of plant's translational machinery.
- ▶ FORMAL:
  - ▶ Transfer of research results into practice;
  - ▶ integration activities;
  - ▶ public awareness program.



## *GOAL*

- ▶ Fostering advances in basic legume biology within EU
  - promoting efficiency and co-operation;
  - complementary expertise and resources;
  - European competitiveness



## *Additional Initiatives*

### **Proteomics approaches as a tool to study plant gene function:**

Institute (IBB) is equipped with Micromass® Proteomics Platform. Lab is serving for community service for protein identification and modifications



### **Task 1. Remodeling of Structure in Plant Chromatin**

**Role of Histon H1 in Chromatin Remodeling Complex.**

### **Task 2. Plant-Pathogen Interactions**

**Role of nitrosylation proteins as a systemic signal leading to developing acquired resistance (SAR) in the parts of the plant distinct from the infection site.**

*Thank you*

