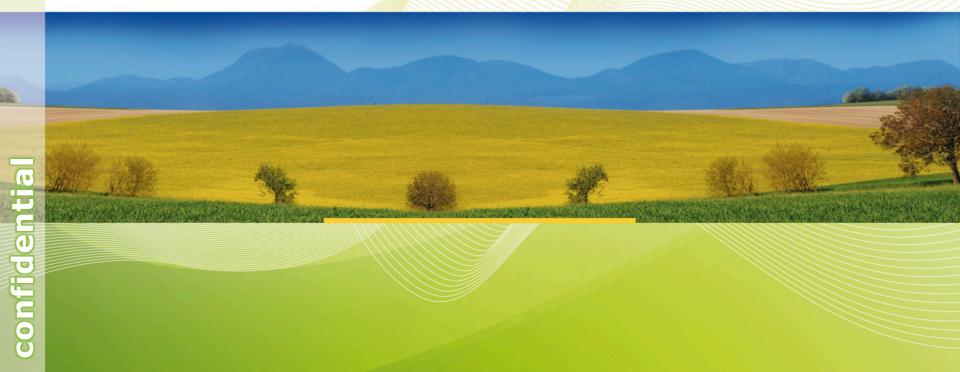


## Transplant – Elixir meeting 1<sup>st</sup> - 2<sup>nd</sup> July 2014



## Biogemma, a plant Biotech company



# Mainly funded by seed companies Strong expertise in

- Genetics
- Genetic transformation
- Genomics
- Bioinformatics



#### Species of interest: Maize, Wheat, Rapeseed, Sunflower

#### Ressources

- Sequencing facility (miseq, Hiseq data)
- Genotyping facility (Kaspar -> Axiom)
- Informatics
  - SGI UV1000, 264 cores, 2.5Tb RAM
    - => allows to perform NGS analysis (mapping, whole genome assemblies) on large genomes
  - 100To storage
- We ARE
  - the main facility
  - the main interface between private and academics

for sequencing and bioinformatics for our shareholders



## **Bioinformatics as a platform**

#### Data management

- Databases (genome, genetic map, SNP)
- Data formatting
- Data integration

## Analysis tools

- Sequence analysis tools (blast, primer design...)
- Custom script developement for biologists
- Galaxy: workflows for biologists

### Species dedicated web portal

- Physical and genetic data
- SNP database
- Integrated view of all available data
- Private portal per shareholder

Galaxy	Portals - biogenma fr - Mozilla Firefox Eichier Édition Affichage Eistorique Marque-pages Qubils 2	ions for the BLAST 2.0 server:
b portal	B bit2 biogenma.fr.8080/web/guest/login/p.p.id=588p.p.jflecye     Potals - biogenma.fr	le=08_58_redirect=%2Fgroup%2Fbiogernma%2Faccueil
	BBSearch Rechercher.	PageLogos
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	<u>vanner</u> <u>Britandrickov</u> V Nanzel N	
-STRAINE (September 1997)		
All Record Parallel Section 2014	1750 b.008 b.03	
- SBUE markers on Survey (Showing 8 of 8 subtracits)		

nternal BLAST Search

Last and databases inform

Submit Query Clear input





C N - 60

nma. Cette nouvelle architecture a

RAGT

intenant chacun de nos actionnaires posséde un portail personnalisé et accède

B B B

ace par l'équipe Bioinformatique de Bio

des données et des outils de façon sécurisée

r le portail selon les espèce (Blé, Colza, Tournesol et Maïs actu



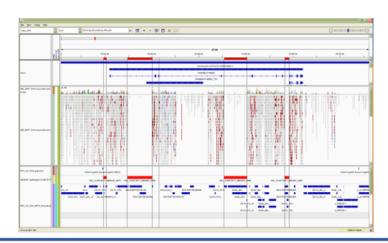


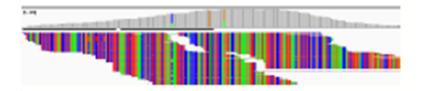
## NGS data analysis

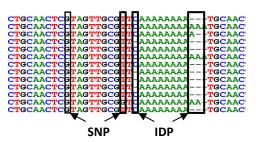
- De novo assembly / mapping
- Polymorphism discovery and genotyping
- Structural variation analysis
- Epigenetics and methylation profiling
- FST sequencing (GM events)

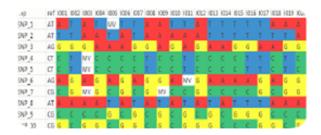
## Genome integration

- Get a genome for all our species
  - Integrate genomic sequences and genetic maps
- Pangenomics











## **Involvement in Transplant**



- Structural variation detection
- Pangenome viewer
- Standards in phenotyping



## What we could do



- **Tools specification**
- User oriented
- Validation on private datasets
- Access to significant amount of data to stress tools

#### What we do not share

- Our data: confidentiality / seed companies
- Our calculation ressources

#### What we are interested in

- Multi-reference genomes
- GWAS on large datasets
- Standards
- User oriented databases

# **Positioning / community**



#### French Plant Bioinformatics community

- Historical partnership with URGI
- Collaborative project with IFB
- Lead/participation in Bioinformatics WP of species large research projects (IAP) in Maize, wheat, sunflower, rapeseed and pea

#### International projects

- Transplant
  - Tools evaluation
  - Specification
  - standards
- Genomics of Sunflower consortium funding
- IWGSC
  - Executive Comittee
  - Participation to the development and application of a whole genome SNP detection pipeline in collaboration with GDEC (INRA Clermont-fd): >4M SNP

# Promote projects on our species of interest Be connected to the academic bioinformatics community for tool development