Forest tree GnpIS: an information system dedicated to forest tree genetics, genomics and phenomics

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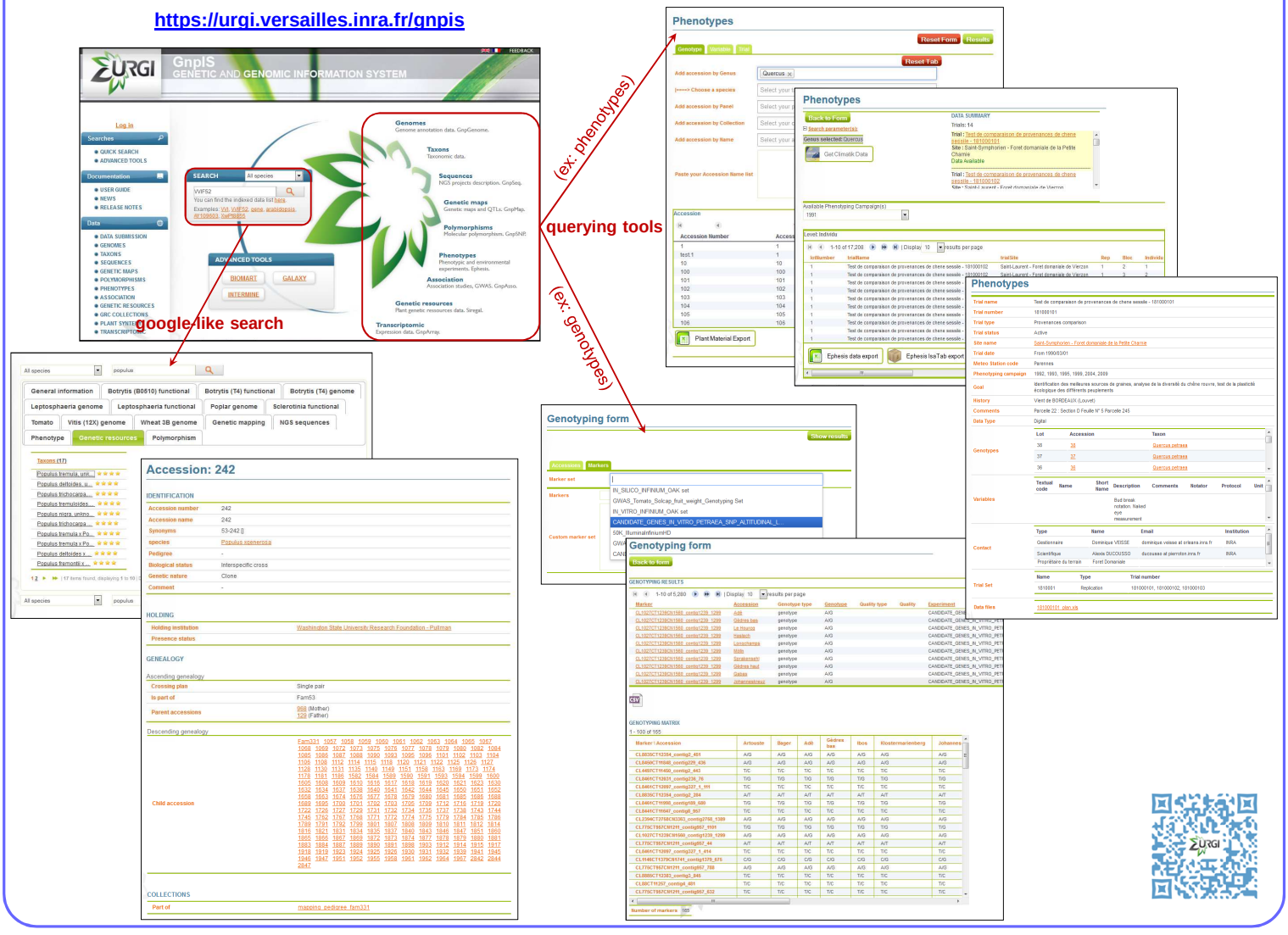
The URGI is a research unit of the French National Institute for Agricultural Research (INRA) which aims to develop tools, integrate data and acquire a better understanding of plant's genome structure, evolution and functioning. It hosts a bioinformatics platform (member of the French network of bioinformatics platforms, ReNaBi) which develops and maintains a multispecies integrative information system dedicated to plants and crop parasites: GnpIS. It integrates and links genetic, genomic, phenomic and environmental data into a single environment, allowing researchers to store, query and explore information from different angles.
The Ecology division of INRA uses GnpIS as its referential information system to manage forest tree genetic, genomic and phenomic data.

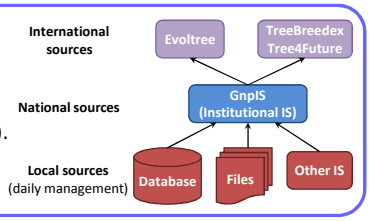
The forest tree resources are accessible through the GnpIS web portal. Its main entry point is a google-like search, a tool using keywords for data discovery. The bird's eye view obtained allows navigation through the data with dedicated tools facilitating more specific queries and data retrieval from the database. Cards were developed to gather all representative information on major elements (accession, experiment and such).
This information system (IS) is developed in Java. It is regularly improved with new functionalities answering specific needs raised by scientists and released several times a year.

https://urgi.versailles.inra.fr/gnpis



Data are supplied by local sources produced and managed by research teams working on forest trees. Workflows are implemented to automate data flow: 1) data insertion in GnpIS from local sources, 2) data extraction from GnpIS and insertion into international IS.

Data are already available in this forest IS (https://urgi.versailles.inra.fr/Species/Forest-trees/Database-overview). We are giving access to oak and poplar genetic, phenomic and genomic data. Integration of the data produced within the common garden network (over 1,000 trials with genotypes gathered from ~15 species) is in progress.



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