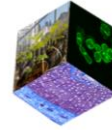


LICA access policy

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1. Presentation

The Tree Cell Engineering Lab ([LICA](#)) is a research facility located on the Orleans site of INRAE Val de Loire. It brings together state-of-the-art equipments and the expertise of Researchers, Engineers and Technicians from the UMR "Integrated biology for valorisation of the diversity of trees and forests" ([BioForA](#)) and from the Experimental Unit "Forest Genetics and Biomass of Orleans" ([GBFOR](#)). The LICA is part of [In-Sylva France](#), a Research Infrastructure that coordinates the experimental tools and platforms of French research organizations working on forest management.

LICA is devoted to the production and characterization of genetically modified or edited trees that will help to gain a better knowledge on gene function and on the mechanisms involved in tree growth and development as well as in their potential to adapt to various environmental constraints. This also makes possible to validate candidate genes for target traits in breeding programs. Overall, the activities developed in LICA fall into three areas:

- multiplication, acclimatization and breeding of plants in greenhouses as well as in climatic chambers,
- genetic transformation and genome editing,
- microphenotyping of modified plants by histocytology and infrared microspectroscopy.

In LICA, we aim at providing public and private researchers with the equipments and skills necessary to produce and characterize transgenic trees in the strict respect of current regulations. Transgenic or edited trees can be grown in LICA facilities for several months under optimal conditions that makes it possible to assess the effect of the genetic modification on tree physiology of the tree while producing biomass in sufficient amounts for technological evaluation (for example on the [Phénobois](#) platform next to LICA).

The LICA has been inaugurated in May 2017. This is a L2S2-confined building complying with current regulation on biohazard with 270m² of laboratories and 170m² of greenhouses.

The S2 greenhouses include:

- a 80m² module including a 80cm deep pit on a 36 m² area,
- two 20m² modules,
- a 20m² module with depressed atmosphere (-15Pa), controlled by an airlock. This module allows occasional breeding of *Arabidopsis thaliana* plants. Climate regulation is controlled by an ARIA management tool.

The L2 laboratories gather:

- a central laboratory for cell biology, molecular biology and microscope observations,
- an *in vitro* culture laboratory equipped with 2 culture chambers,
- a laboratory for media preparation,
- a phenotyping room,

- an air-conditioned room for infra-red spectroscopy analyzes.

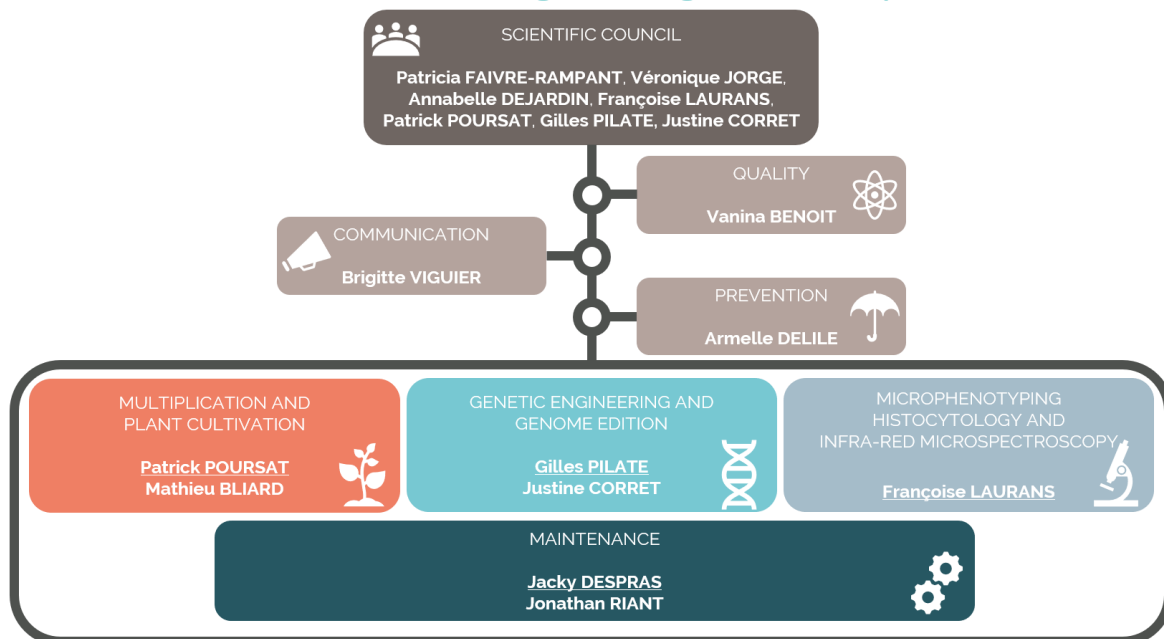
LICA has been 100% funded by INRAE, while it obtained fundings for part of its equipments from the Centre-Val de Loire Region.

LICA offers spaces to carry out various activities related to the production and characterization of genetically modified or edited trees:

- Cloning to generate constructions and transformation vectors,
- Genetic transformation by *Agrobacterium tumefaciens* cocultivation,
- Multiplication of micro-cuttings, acclimatization of *in vitro* plantlets and greenhouse breeding of acclimatized plants,
- Growth measurements and material samples from plants reared in greenhouse for molecular, biochemical and histological characterization,
- IR spectroscopy analysis.

▪ **Staff**

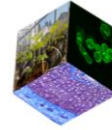
➤ **Tree Cell Engineering Laboratory**



The permanent staff of LICA is supported by non-permanent staff.

▪ **Governance**

The governance is ensured by the LICA Scientific Council that includes 7 members. It is responsible for project selection and if needed their prioritization, with the aim to keep a reasonable service workload. It is made up of a scientific director (Gilles Pilate), the persons responsible for the three activity poles (Françoise Laurans, Justine Corret and Patrick



Poursat), a representative of the users (Annabelle Déjardin), a representative of the head of BioForA unit (Véronique Jorge) and an external expert (Patricia Faivre-Rampant, EPGV INRAE). The LICA Scientific Council meets once a year, and more if necessary. It organizes an annual general assembly, where all LICA users from the past two years, LICA staff and members of the Scientific Council are invited.

▪ Management and quality policy

LICA is committed to a quality approach in accordance to the procedures developed at BioForA and GBFor. Its Quality Management System (QMS) is based on the principles of continuous improvement of its operation and the satisfaction of its agents and users.

Thus, LICA management aims to ensuring:

- the safety of its agents and users, through the prevention of i) occupational risks linked to the handling of dangerous products or equipment and ii) psycho-social risks,
- the implementation of safety regulations concerning the handling of genetically modified organisms in a confined environment,
- the ergonomics of working conditions,
- the parity and the absence of discrimination in its authority and its recruitment policy,
- the control of its scientific and technical activities, in terms of reliability of analysis, results and traceability of experiments,
- the control and traceability of samples and data,
- the control of LICA equipment through appropriate and regular monitoring at both metrological and regulatory levels, framed by the equipment park management procedure,
- the control of its documentation and information system through the use of a collaborative space framed by the documentation management procedure. LICA has in written form all the processes, procedures and operating modes, instructions and records necessary for its operation with updating management.

▪ Information and contact

Users can find all necessary information about LICA and its activities via its website:

https://www6.inrae.fr/lica_eng/.

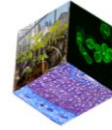
Contact : Gilles Pilate gilles.pilate@inrae.fr 06 87 71 94 71

INRAE Val de Loire

2163 Avenue de la Pomme de Pin - CS 40001 ARDON

45075 ORLEANS Cedex 2

France



2. Procedure for submission and selection of projects

▪ Project submission

The submission of any project should be made at first at the LICA contact webpage, where request can be submitted online.

▪ Selection of project

All the projects submitted to the laboratory are examined by the members of the Scientific Council for the following criteria:

- scientific interest,
- technical feasibility,
- the cost borne by the service (availability of staff, equipments and premises).

If the number of admissible projects is greater than the capacity of LICA, a priority will be established in the following order:

- project in partnership with a team from BioForA and co-built with LICA,
- project funded by European or international agencies with the aim of promoting the international use of LICA,
- project funded by French organizations,
- project submitted by private sector users,
- other project.

After proofreading, the Scientific Council will issue a justified opinion on the project that will be either:

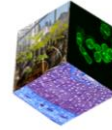
- admissible and an implementation schedule will then be defined,
- admissible under certain conditions,
- admissible with modifications (which will result in a new submission process),

or - refused.

The Scientific Council, having a global vision of all the ongoing projects in LICA, is warrant of fairness in the project selection process. It will report at the general meeting, all the requests for collaboration received and the related decisions of the Council.

3. Rules of financial operation

Excepted when BioForA is a full partner in a funded research project, where LICA operating, research and development costs are part of the funding, users will have to contribute to finance the activities carried out in the LICA. As a first step, the cost requested



from the user will be estimated in a document entitled "Project cost estimate". This document remains informative, user fees being invoiced *a posteriori* and in proportion to the use of consumables and laboratory resources, according to the observed cost breakdown.

The costs will be determined according to either of three rates:

- internal rate: for INRAE agents, this rate takes into account the resources allocated each year by the BioForA unit to the functional support of LICA (staff, fluids, maintenance, training, etc.),
- public organism rate: applicable to all French or international Public Research Establishments (Universities, EPST, EPIC, EPSCP, etc.)
- private rate: applicable to other organizations, private companies, ...

LICA applies the Institute's internal (paid on INRAE credit) and external (paid out of INRAE credit) revenue forecasting rules, with the associated budget calendar. In this context, no bill can be invoiced between October and December of the current year, if the project had not been planned before the previous month of August. The purchase orders must, in this case, be sent before October 21 of the current year so that it remain possible to validate the invoice before the end of the billing period. The only exception to this budget cycle applies for research projects where BioForA appears as a partner.

4. Mutual commitments

For any admissible project, LICA is committed to:

- provide the user with supervision and coaching by competent staff,
- offer high-performance and well-maintained equipment,
- inform the user of the progress of the project,
- support the user to value its data
- make every effort to ensure the success of the experiments; however, any research project involves some risks, the LICA cannot be held responsible in the absence of results.

Users agree to:

- sign and respect this policy,
- follow the training to be authorized to work in an L2S2 space,
- provide all the information necessary to carry out the projects involving the LICA,
- pay the financial contribution corresponding to the activities carried out,
- respond, at the end of the project, to a satisfaction survey.

LICA reserves the right to interrupt the project or to deny access to the premises to anyone who does not comply with this policy.

5. Reception of staff in the laboratory

Access to the premises can only be made possible after obtaining an authorization issued by LICA. It is part of an agreed framework according to the procedures in force in the UMR BioForA. Access to the premises is controlled by badge and must be planned with LICA staff.

Users hosted at LICA's premises are committed to respect:

- the regulations in force in the BioForA unit,
- the instructions for the containment, traceability, confidentiality, health and safety for using LICA equipment,
- the instructions concerning the activities in the L2 labs and the S2 greenhouses.

These elements are detailed when an authorization is issued to users.

6. Sample management

Temporary storage of samples is possible in the LICA, beyond the duration of the project and depending on available capacities. Once the retention period agreed with the user has passed, the platform may destroy the samples. Inert (non-living) samples may be taken away. In the event that the user's laboratory is authorized to handle GMOs, the user may bring and remove live samples from the experiment while respecting the procedures for the transfer of GMO material.

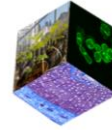
7. Data management and confidentiality

▪ Data management

The data and metadata produced in the LICA, as well as the metadata provided by the users are stored and saved on the servers of BioForA. Users have access to all data related to their own projects. These are transmitted in dematerialized form at the end of the analyzes, by a file transfer system. The user agrees to acknowledge receipt of the data by email to the LICA manager. LICA is committed to keep the raw data and related metadata for a period of five years. During this period, the data remains available to the user upon request.

With regard to the images produced, LICA reserves the right to use some of them to promote its activities, upon user consent.

LICA encourages its users to make their data publicly accessible according to the principles of Open Science.



▪ Confidentiality

LICA wishes to be notified when a project requires a high level of confidentiality. In return, LICA staff will respect this confidentiality.

8. Valorization

Any publication referring to a study performed in LICA must mention, in the acknowledgments section, LICA as follows:

French:

"Les auteurs remercient le Laboratoire d'Ingénierie Cellulaire de l'Arbre (LICA, <https://www6.inrae.fr/lica>) pour ... (e.g. la production et l'analyse des plantes transgéniques)".

English:

"The authors would like to thank the Tree Cell Engineering Laboratory (LICA, https://www6.inrae.fr/in-sylva-france_eng/Services/In-Lab/LICA), where GM plants were grown and sampled".

Depending on their degree of involvement in the realization of the project, LICA staff should be mentioned by name in the acknowledgments or be co-author in the promotion of the results.

Visual communications (posters, presentations ...) must include the LICA logo, which will be provided on request.

The user or the project manager is committed to notify LICA at the time of publication.

Compliance with these rules will allow better traceability of LICA's contribution to user projects, and better visibility and recognition of the laboratory and its staff.