Workshop 03 Juin 2015 à Béja

LES TECHNIQUES DE MULTIPLICATION VÉGÉTATIVE DES ESPÈCES AUTOCHTONES EN TUNISIE

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Laboratoire de Gestion et Valorisation des Ressources Forestières – Biotechnologie Forestière - INRGREF

- Forêts
- Nappe et couvert végétal
- Diversité biologique

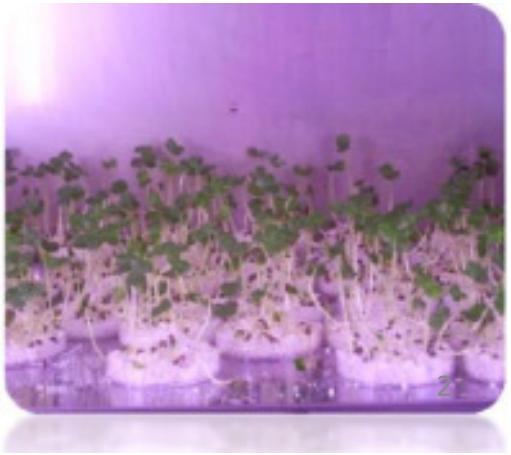
RESSOURCES NATURELLES

PROBLÈMES

- Déboisement
- Mauvaise gestion
- Absence d'entretien
- Pression anthropique

- Préservation
- Conservation
- Exploitation

SOLUTIONS



MISE EN PLACE DU LABORATOIRE DE BIOTECHNOLOGIE FORESTIERE

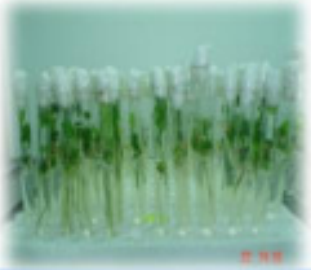
INRGREF + = **Création du Laboratoire de Biotechnologie Forestière**

LABORATOIRE DE BIOTECHNOLOGIE FORESTIÈRE

- **Chambre de culture,**
- **Salle de préparation des milieux,**
- **Salle de repiquage**

Installation d'une serre vitrée de 300m²

Acquisition d'équipements scientifiques nécessaire pour la culture *in vitro*



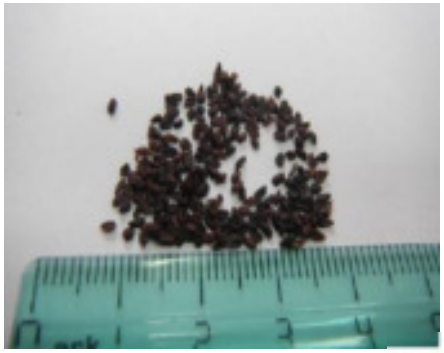
Ex vitro

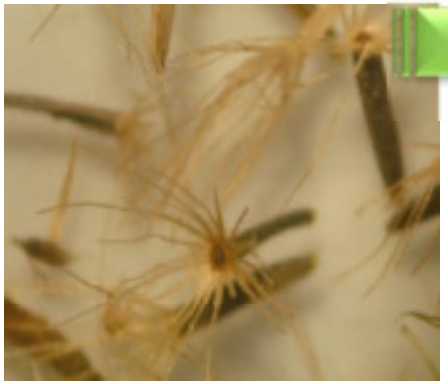
- **Germination**
- **Bouturage**
- **Culture hydroponique**

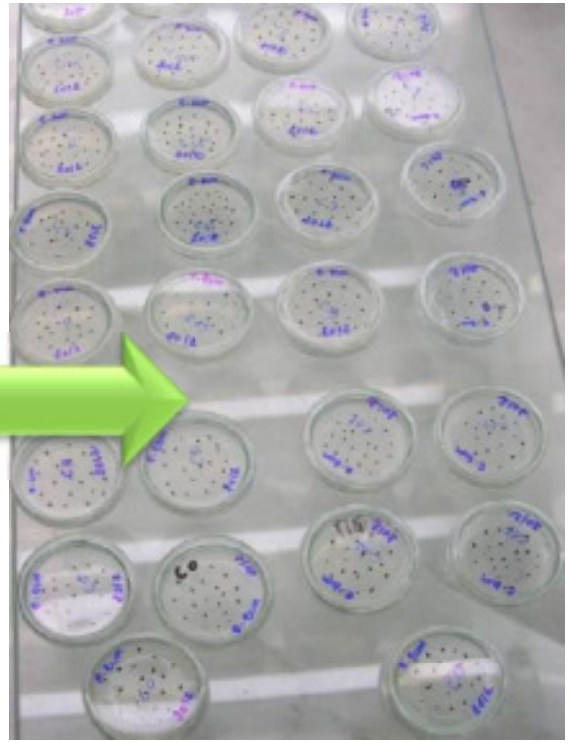
Comment ça pousse ?

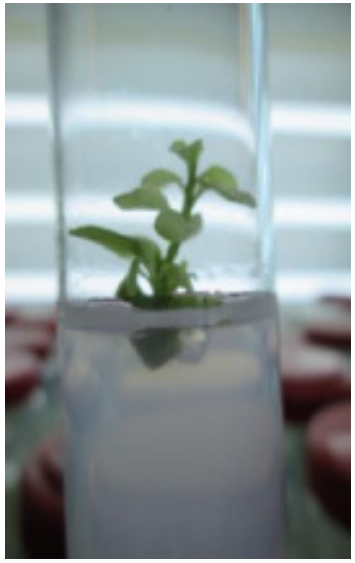
In vitro

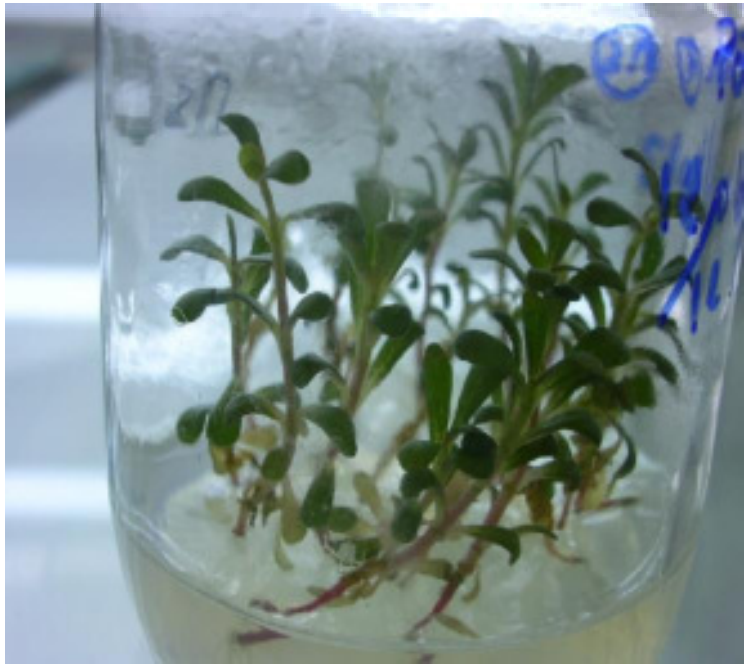
- **Organogenèse**
- **Microbouturage**
- **Germination**
- **Microgreffage**

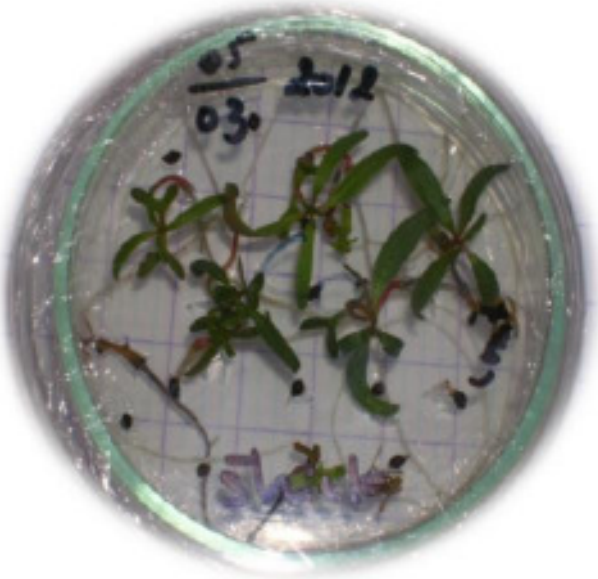


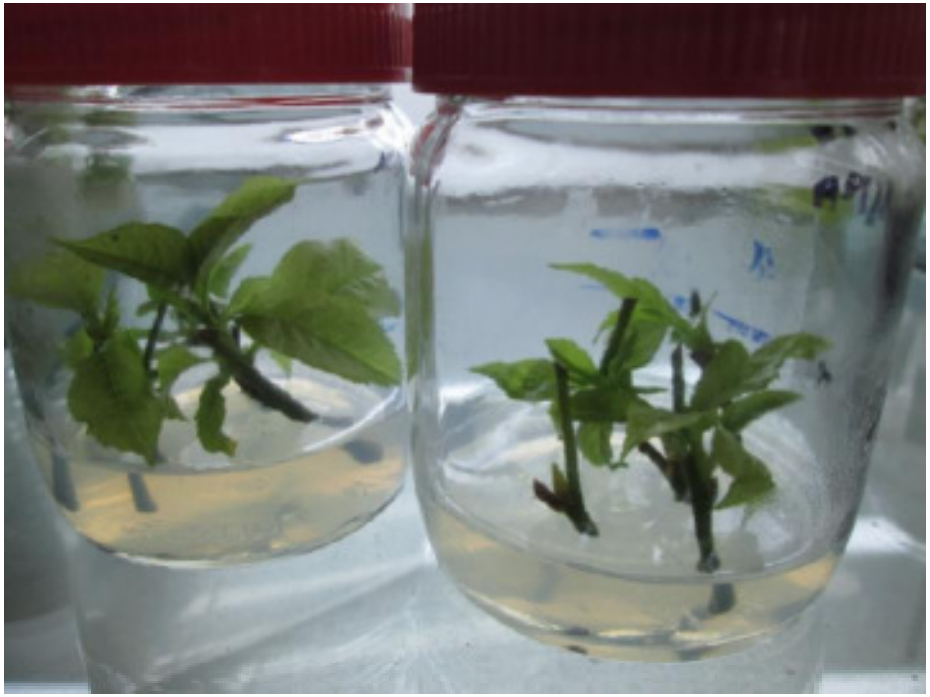


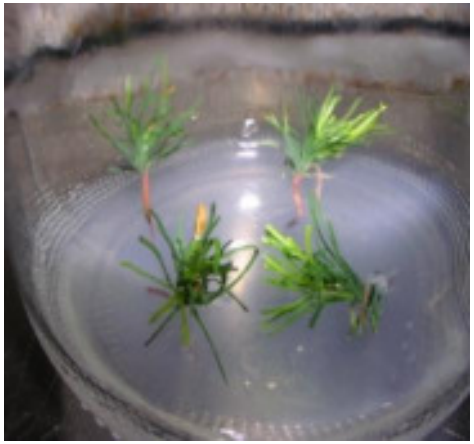




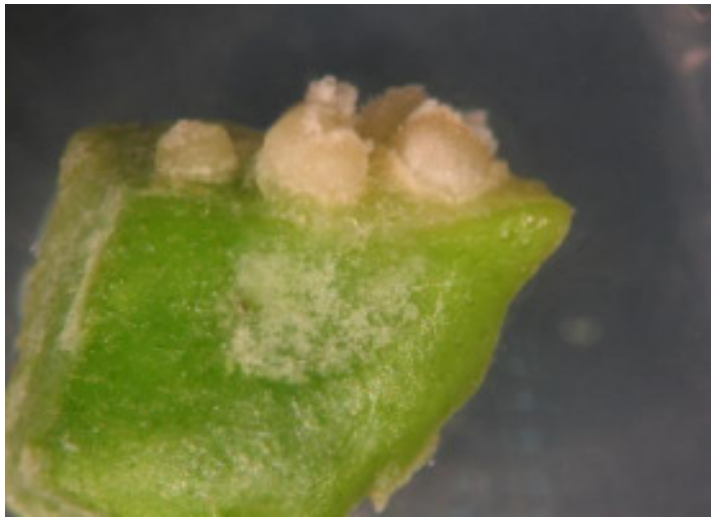




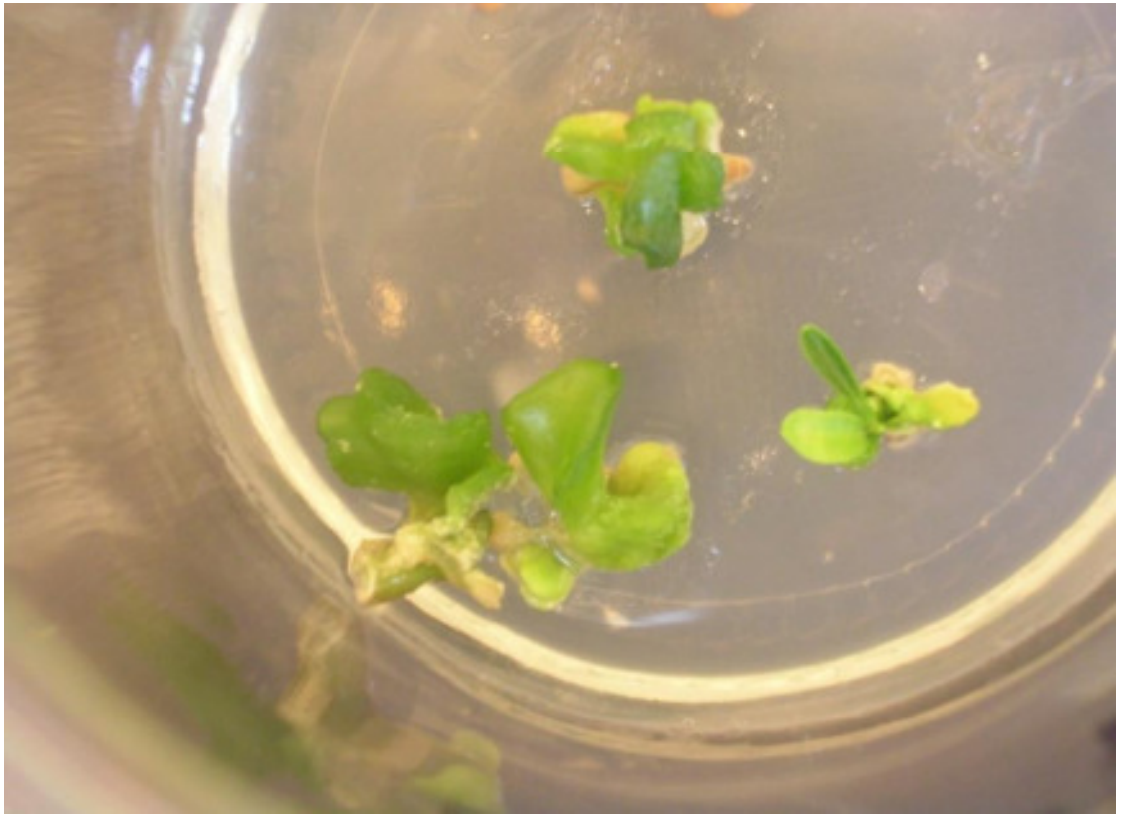


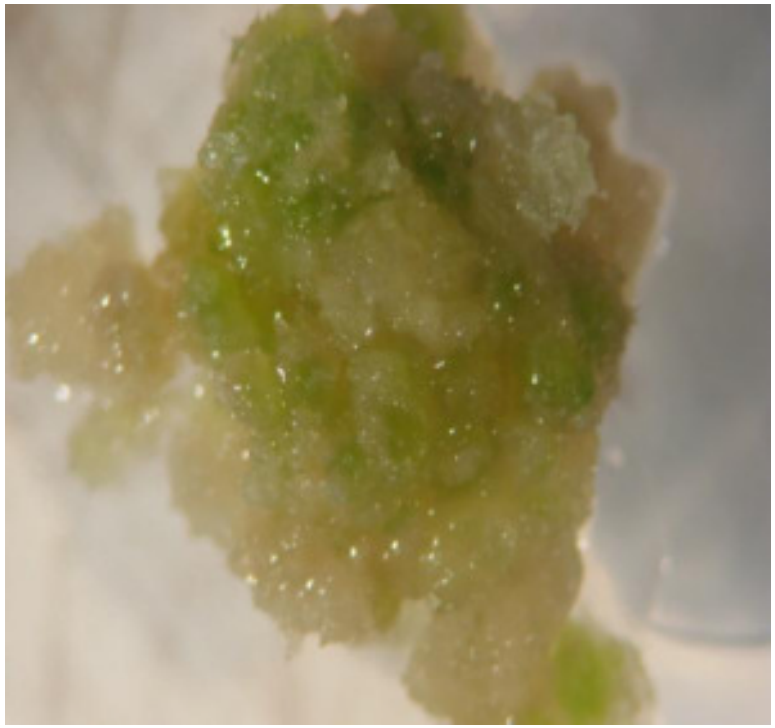
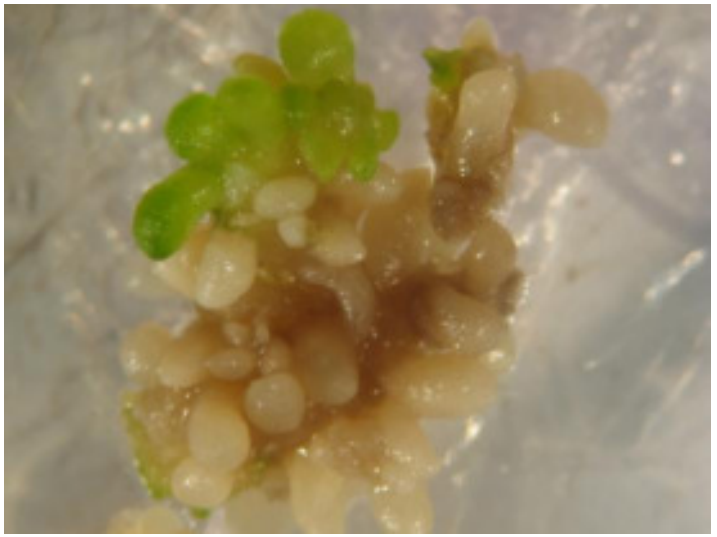


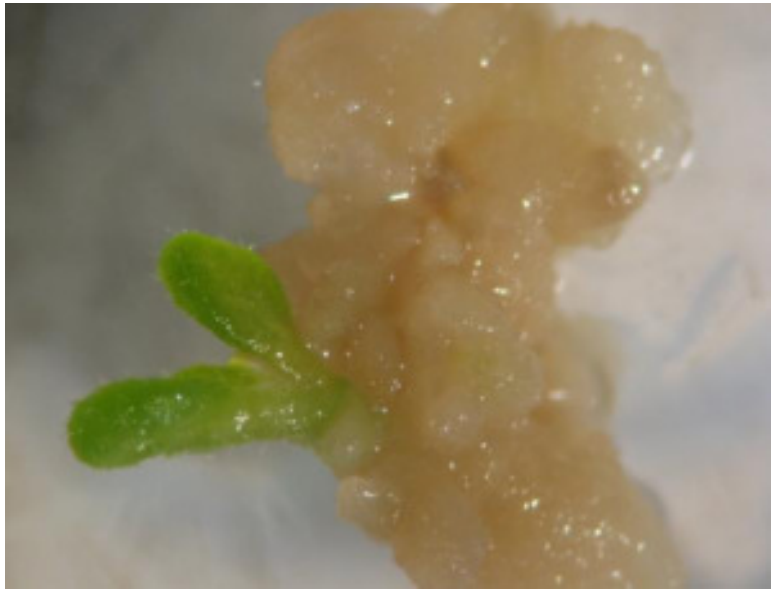
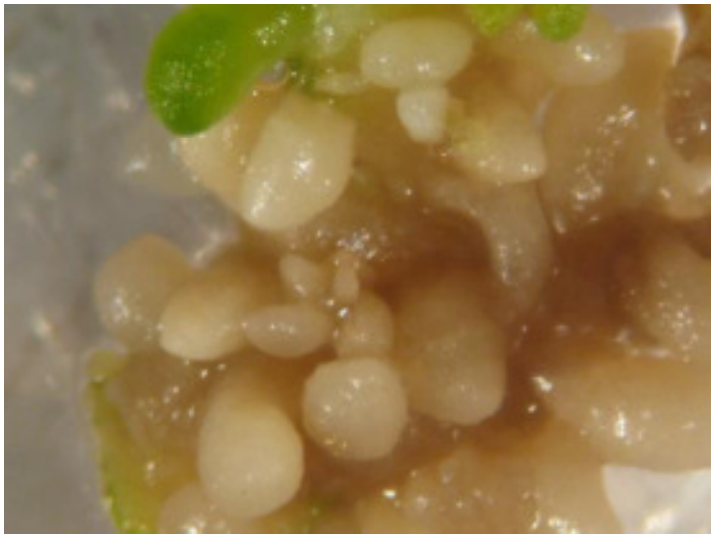
Le micro bouturage permet de **gagner du temps**, et il affiche un **taux de réussite plus important** que le bouturage classique.

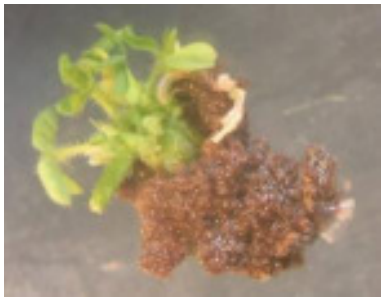








Germination

Chêne liège

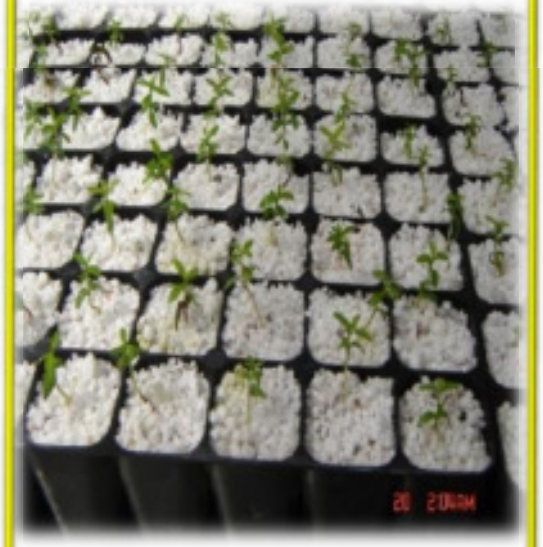
Myrte

Caroubier

Kenaf

Eucalyptus

Lentisque



Pins

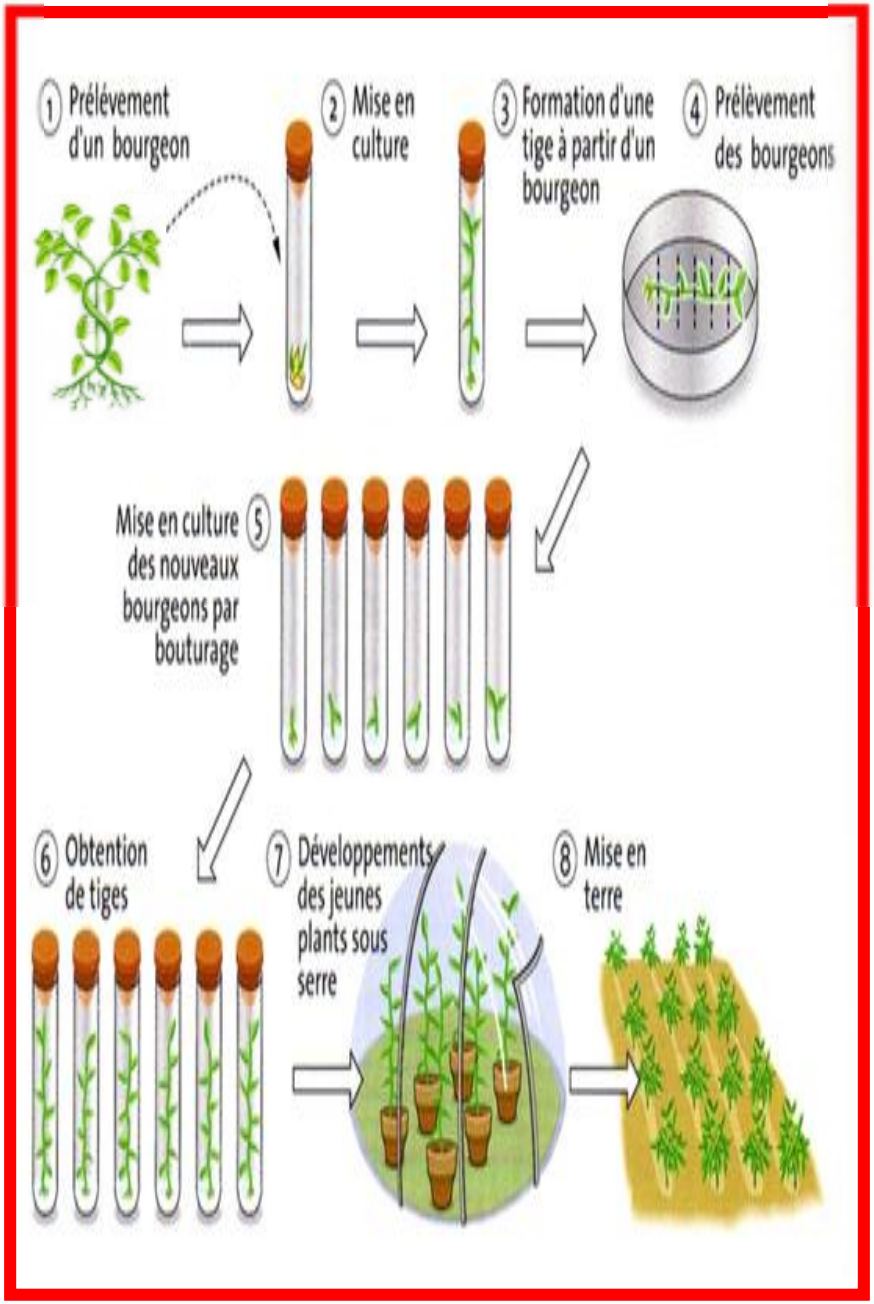
Cyprès

Arganier

Arbousier

Arbousier	Kenaf	Cyprès	Eucalyptus	Arganier	Jatropha	Jojoba	Myrte
Lentisque	Câprier	Pistachier	Pins	Mûrier	Chêne liège	Rue	Caroubier

Microbouturage



MULTIPLICATION DES ESPÈCES FORESTIÈRES

Caroubier

- Microbouturage : 97%
- Culture de méristème : 14%

Eucalyptus

- Germination *ex vitro*
  - *Eu.gomphocephala* : 20%
  - *Eu.maidenï* : 18%
  - *Eu.camaldulensis* : 4%
- Germination *in vitro*
  - *Eu.gomphocephala* : 76%
  - *Eu.maidenï* : 90%
- *Eu.camaldulensis* : 3%

Cyprès

- Microbouturage : 92%
- Acclimatation : 100%

Pin

- Microbouturage : 95%
- Acclimatation : réussite

Chêne liège

- Microbouturage : 16,67%
- Acclimatation : 12,5%

Saule

- Microbouturage : 86,66%
- Acclimatation : 83,33%

Multiplication des espèces aromatiques et médicinales spontanées

Eglantier

- Survie : **75%**
- Enracinement : **94,44%**

Romarin

- Microbouturage : **67%**
- Bouturage : **98,5%**
- Acclimatation : **68,98%**

Thym

- Germination in vitro : **85,34%**
- Microbouturage : **67%**
- Bouturage : **97,45%**
- Acclimatation : **57,32%**

Myrte

- Germination in vitro : **100%**
- Germination ex vitro : **98,33%**
- Microbouturage : **89%**
- Acclimatation : **91%**

Lentisque

- Microbouturage : **61,9%**
- Germination *in vitro* et *ex vitro* : faible

Nigelle

- Survie : **86%**
- Enracinement : **100%**

Arbousier

- Germination in vitro : **87%**
- Germination ex vitro : **56%**
- Bouturage : **98%**
- Microbouturage : **100%**

Mélia

- Survie : **76%**
- Enracinement : **79%**

Santoline

- Survie : **66%**
- Enracinement : **52%**

Lavande

- Survie : **56%**
- Enracinement : **50%**

Marjolaine

- Survie : **60%**
- Enracinement : **50%**

Laurier

- Germination : **36%**
- Microbouturage : **52,87%**
- Bouturage : **13,2%**

Cactus

- Germination *in vitro* : **87,43%**
- Germination *ex vitro* : **12, 34%**

Mûrier

- Microbouturage **63%**
- Acclimatation : **46%**

MULTIPLICATION DES ESPÈCES OLÉAGINEUSES ET ÉNERGÉTIQUES

- Microbouturgae : 66,67%
- Acclimatation : 24,39%

Arganier

- Microbouturage : 87%
- Acclimatation : 49,67%

Jatropha

- Microbouturage : 78%
- Acclimatation : 73,12%

Ricin

- * Micropropagation par microgreffage sur caroubier : 41% de réussite

Pistachier

- Germination et micropropagation 100%
- Acclimatation 100%

Kenaf

Multiplication et Régénération d'Eucalyptus

Germination ex vitro

- *Eu.gomphocephala* : 20%
- *Eu.maidenï* : 18%
- *Eu.camaldulensis* : 4%

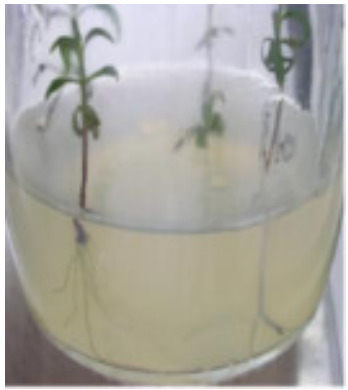
Germination in vitro

- *Eu.gomphocephala* : 76%
- *Eu.maidenï* : 90%

Organogenèse

Eu. camaldulensis

E. maideni



E. gomphocephala

E. maideni

E. camaldulensis

E. gomphocephala

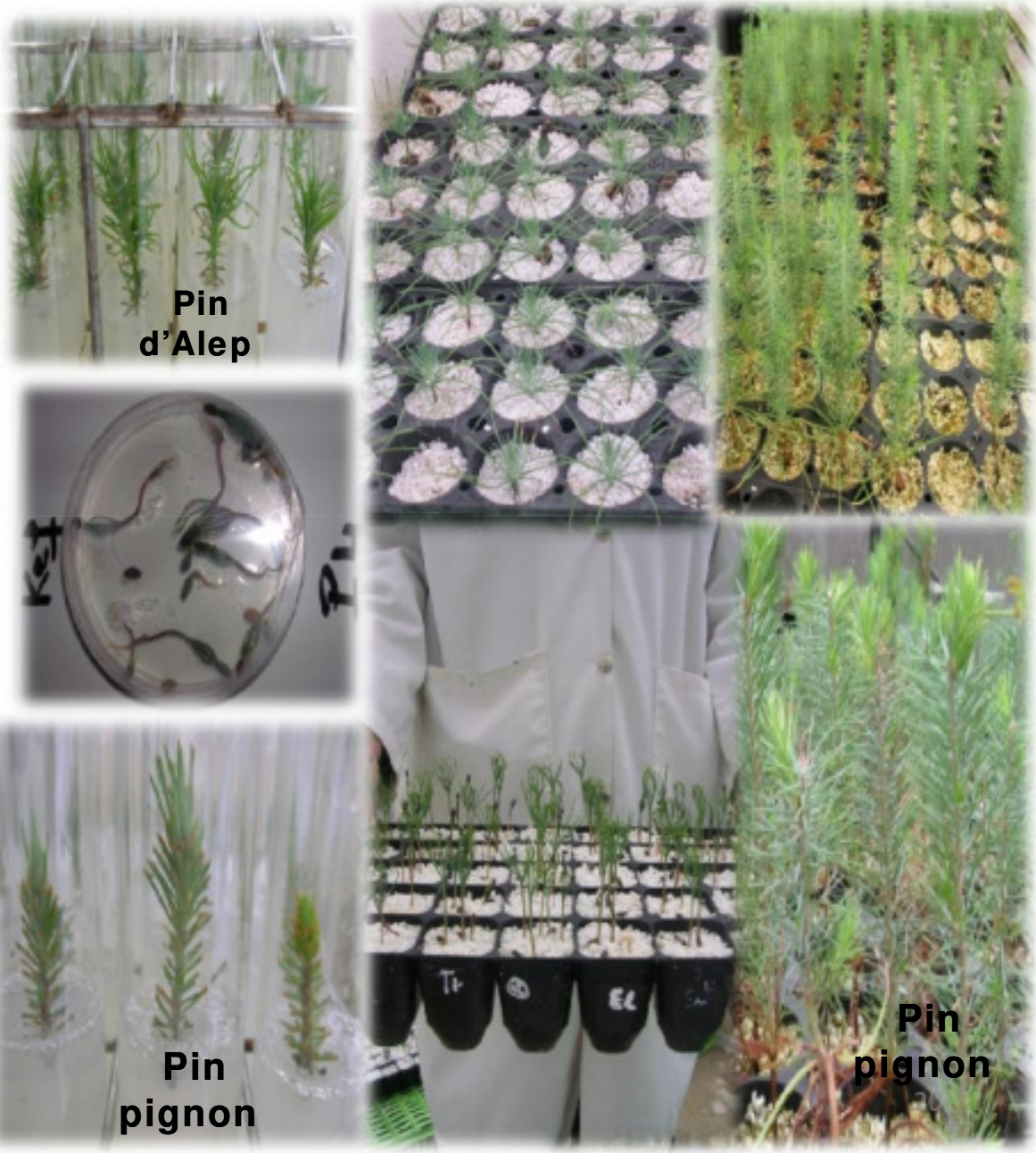
Multiplication et Régénération des pins

Microbouturage

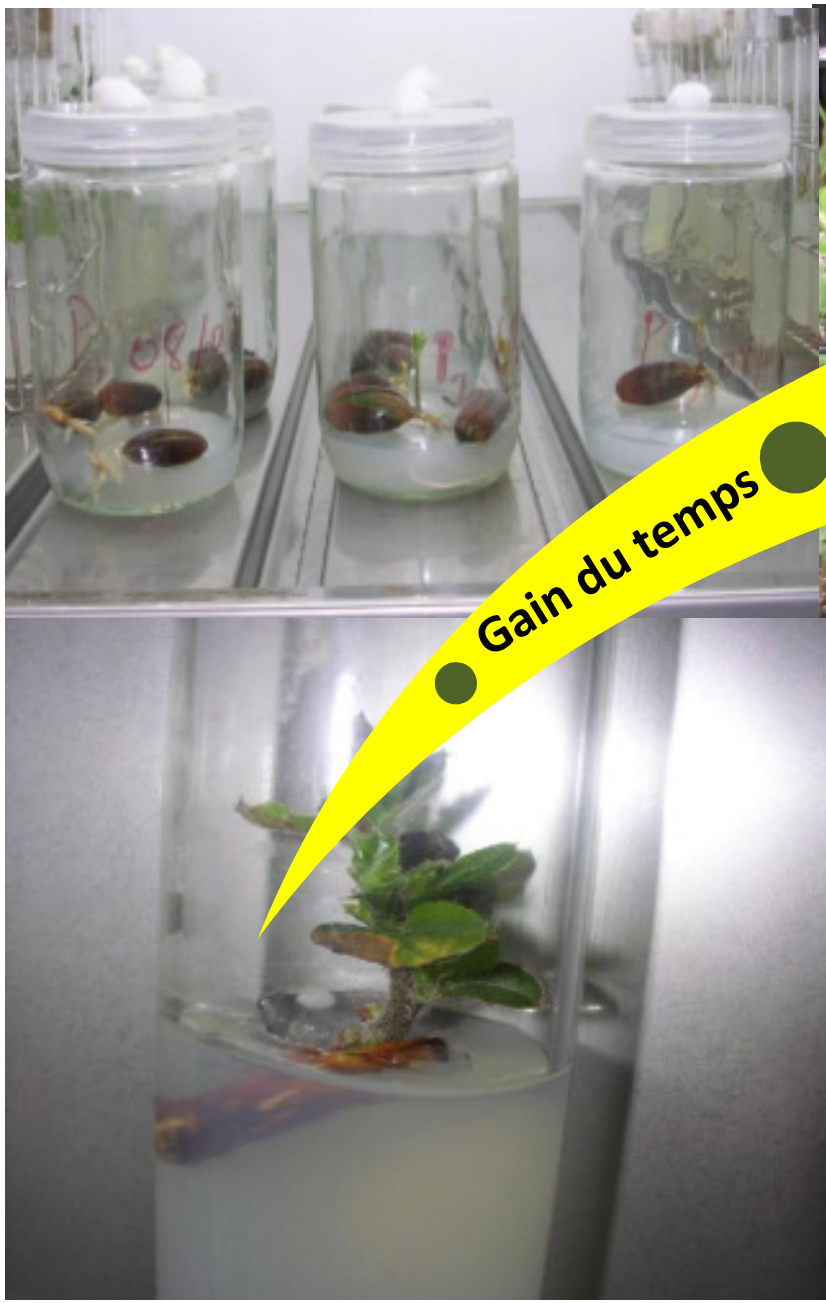
- Pin d'Alep 95%
- Pin pignon 75%
- Pin maritime 72%

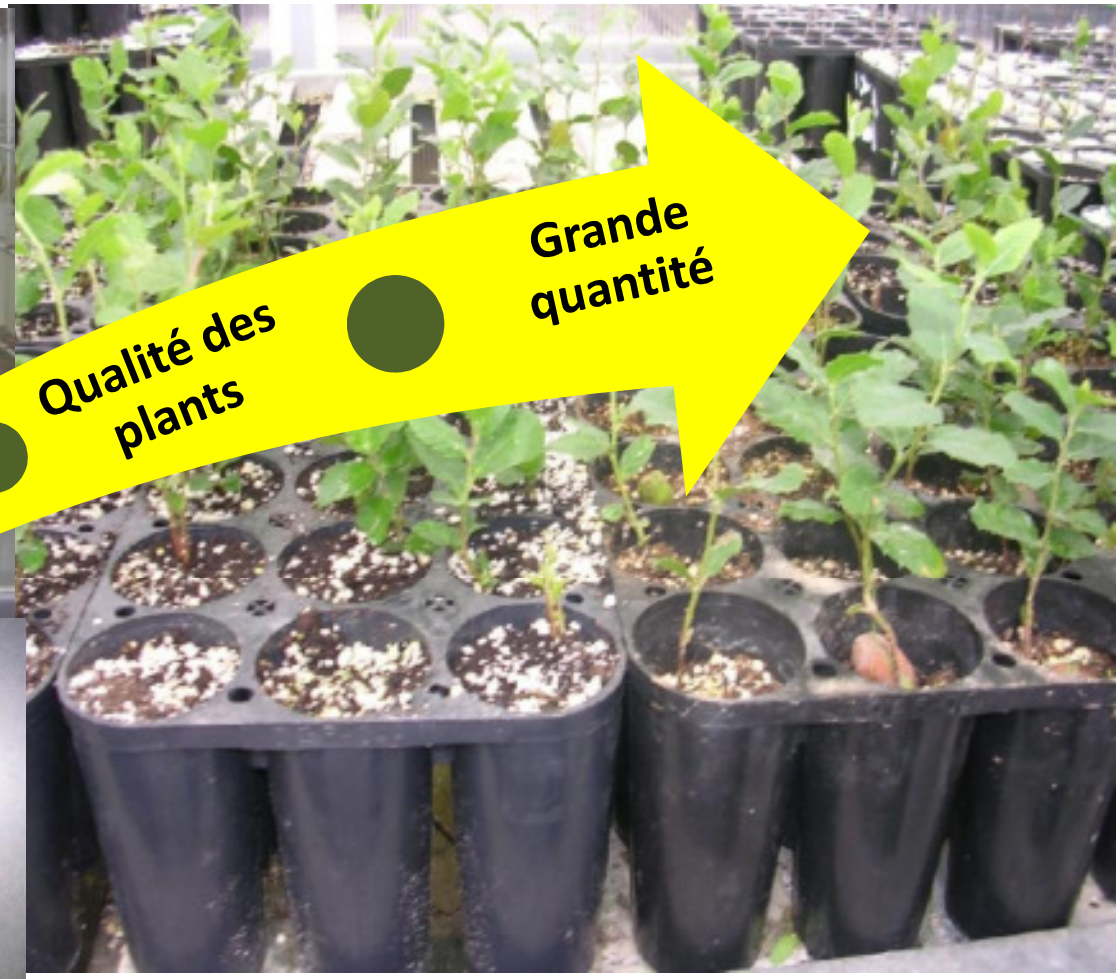
Germination in vitro et ex vitro

- Pin d'Alep 63.5%
- Pin pignon 45%
- Pin maritime 67%



Multiplication et Régénération du chêne liège





Gain du temps

Qualité des plants

Grande quantité

Microbouturage : 16,67%

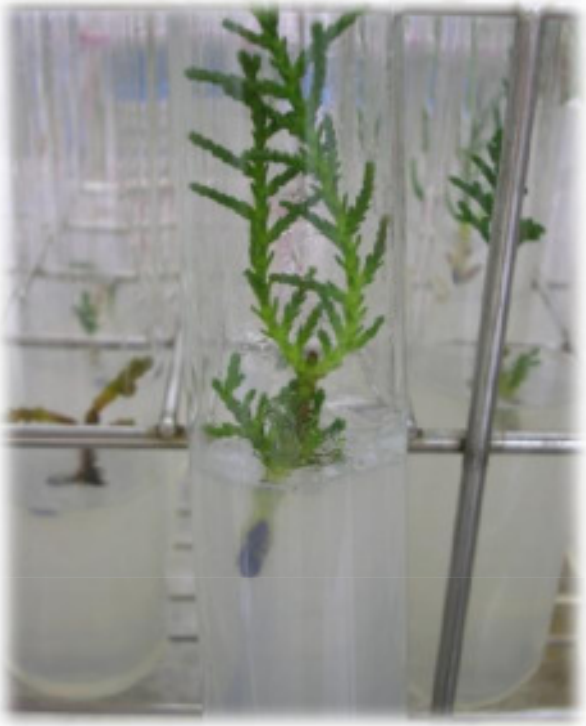
Acclimatation : 12,5%

Germination ex vitro : 100%

Germination in vitro 24.36%

Acclimatation : 12,5%

Multiplication et Régénération du cyprès



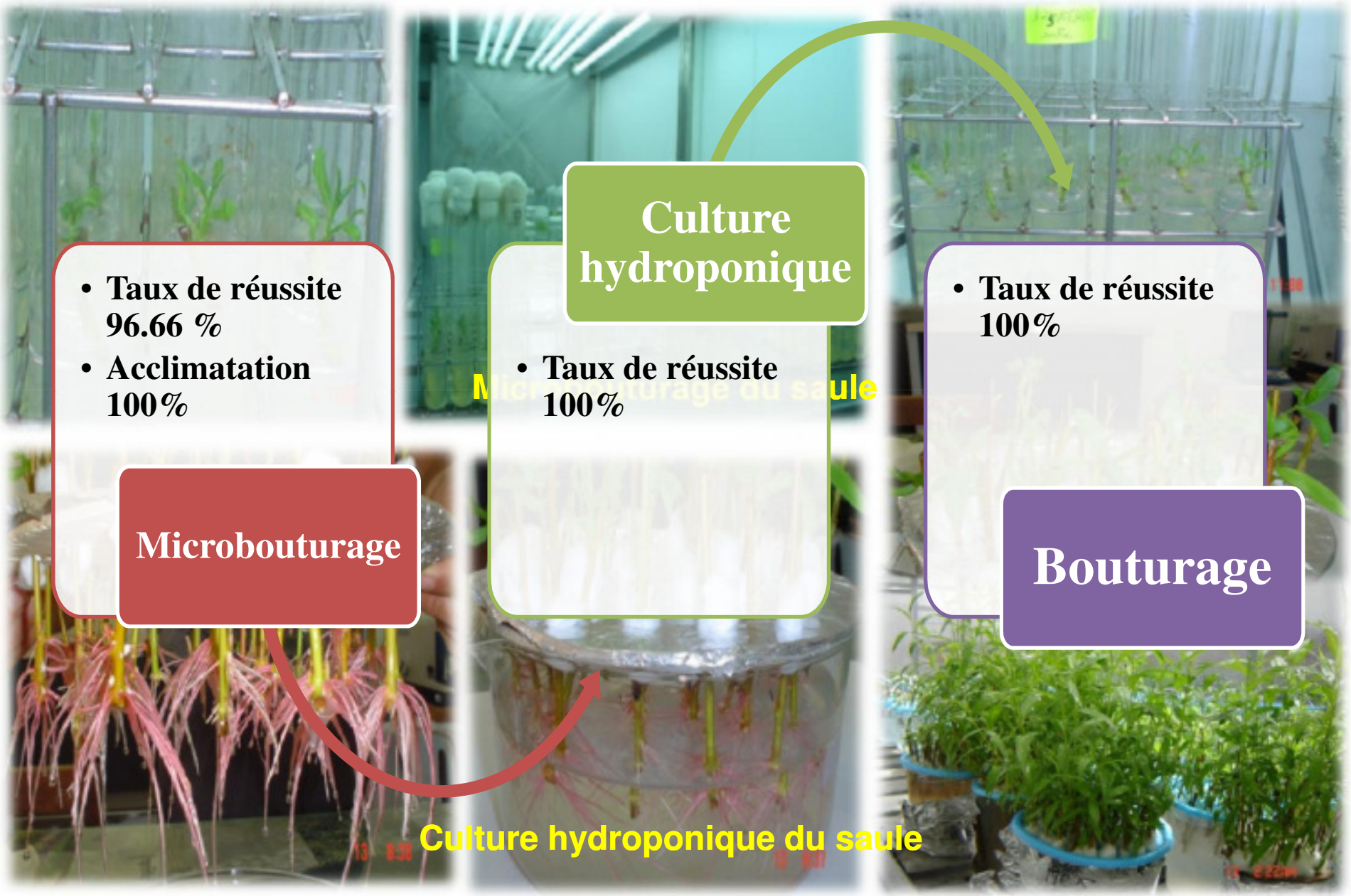
Germination ex vitro : 57%

Germination in vitro 58.32%

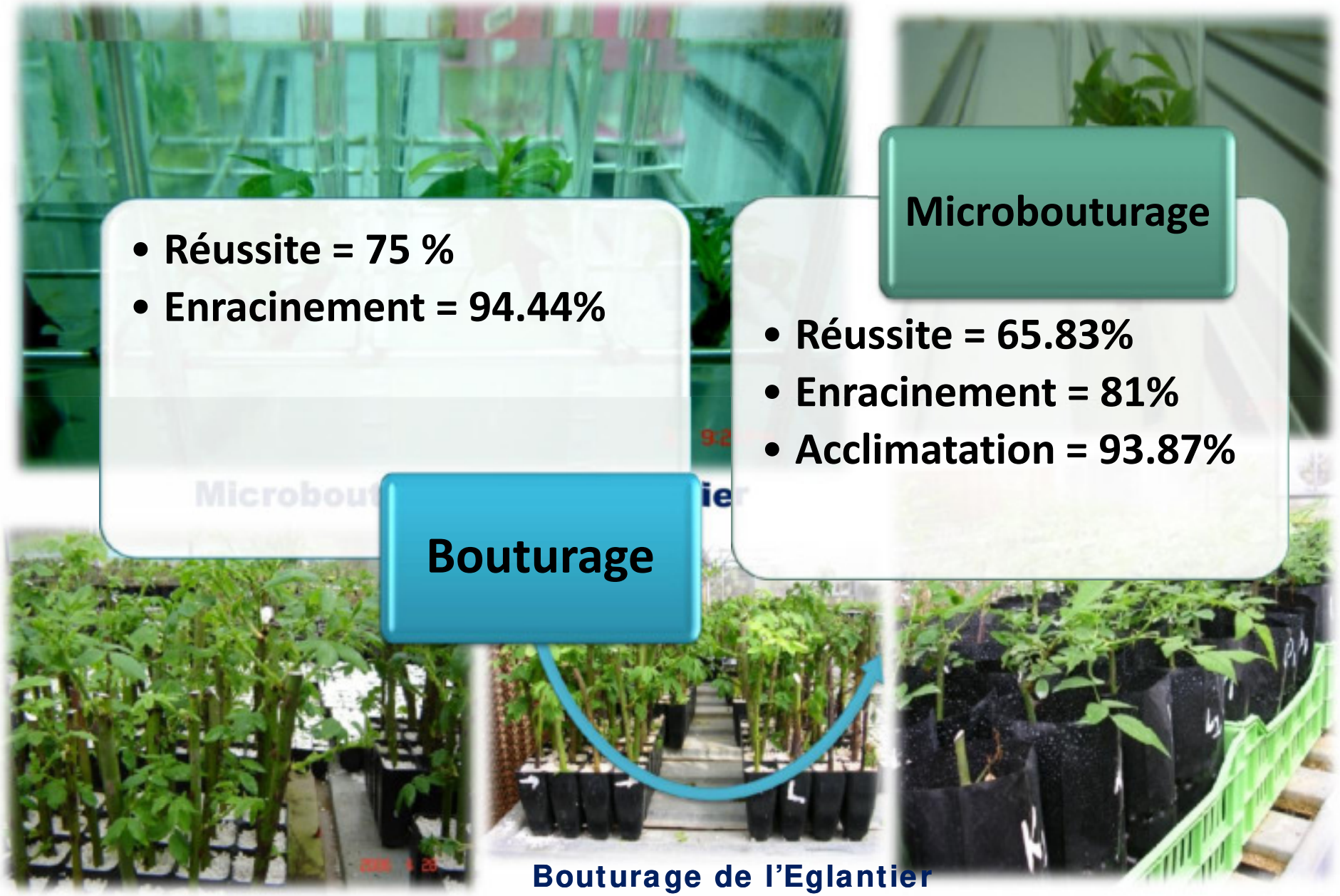
Microbouturage : 82%

Acclimatation : 100%

Multiplication et Régénération du *Salix alba* (Saule blanc)



Multiplication et Régénération de l'Eglantier



- Réussite = 75 %
- Enracinement = 94.44%

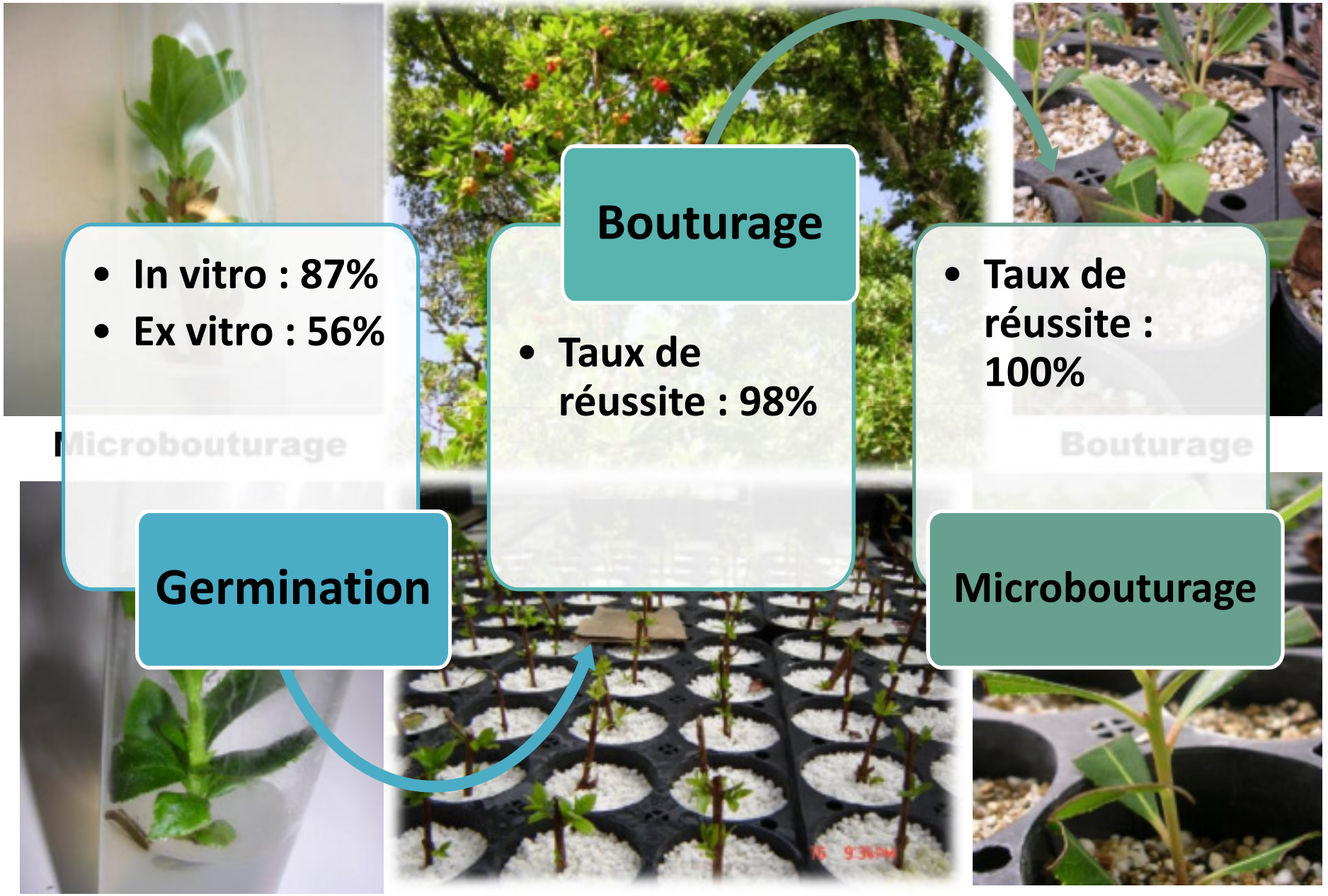
Microbouturage

- Réussite = 65.83%
- Enracinement = 81%
- Acclimatation = 93.87%

Bouturage

Bouturage de l'Eglantier

Multiplication de l'Arbousier



- In vitro : 87%
- Ex vitro : 56%

Microbouturage

Bouturage

- Taux de réussite : 98%

- Taux de réussite : 100%

Bouturage

Germination

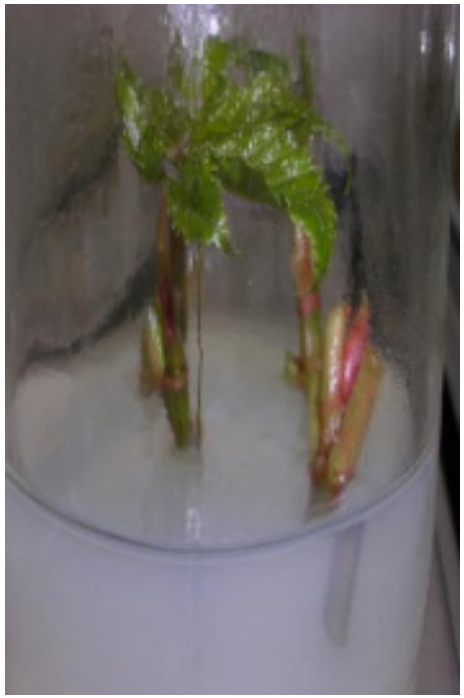
Microbouturage

Multiplication de Camomille

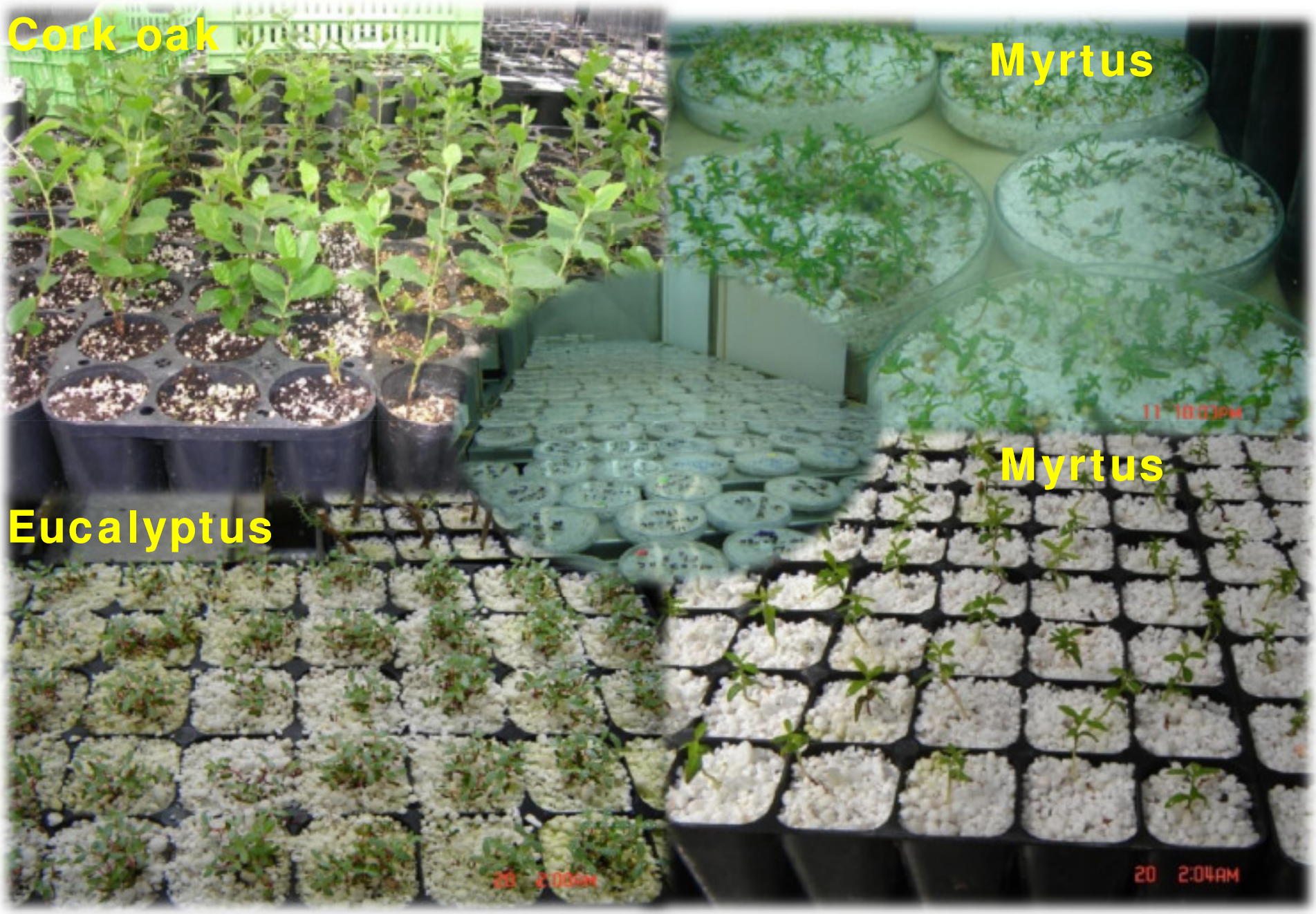
- In vitro : 100%
- Ex vitro : 100%

Germination

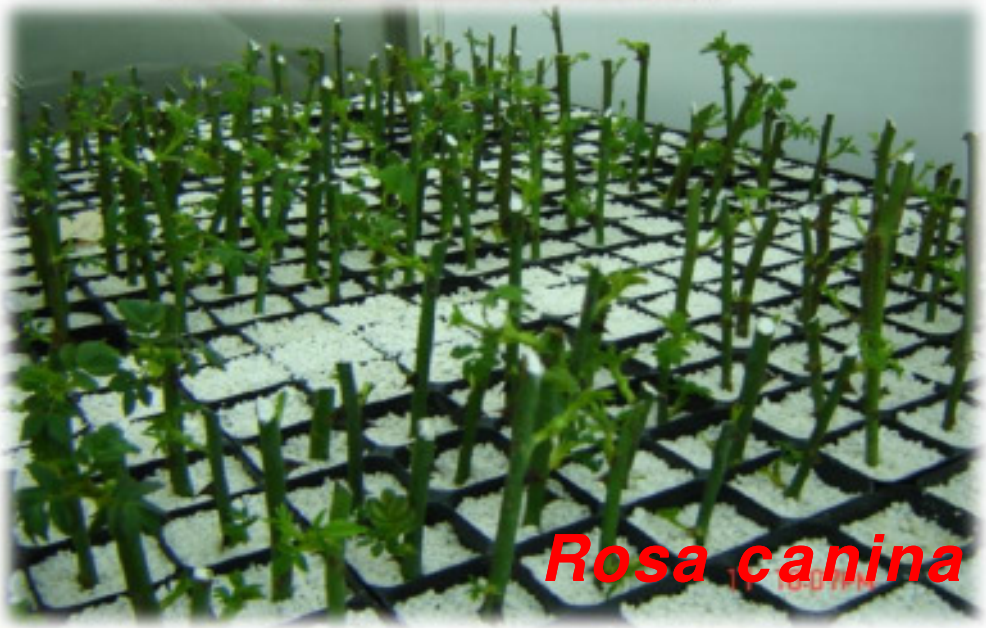
Ricin : *Ricinus communis*



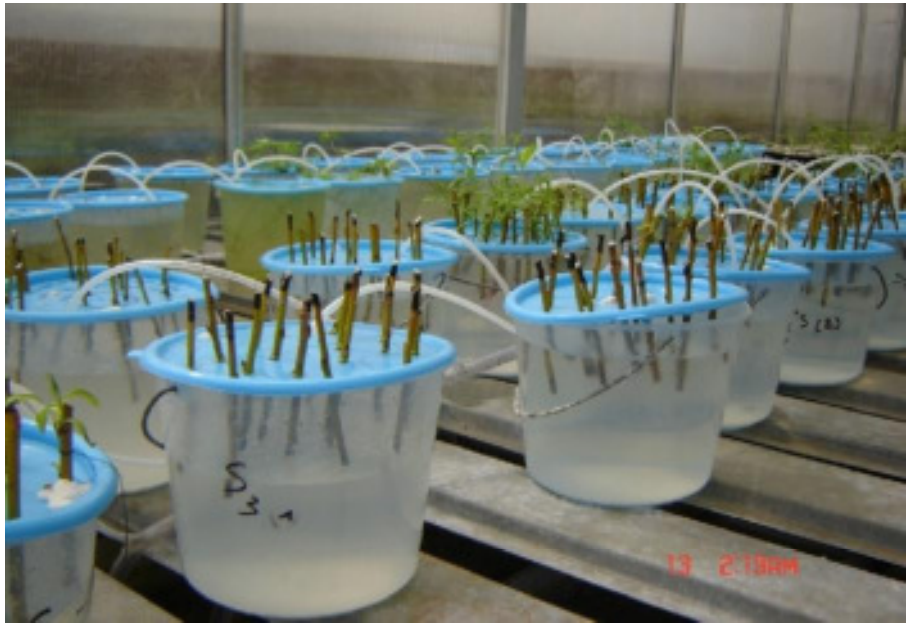
GERMINATION

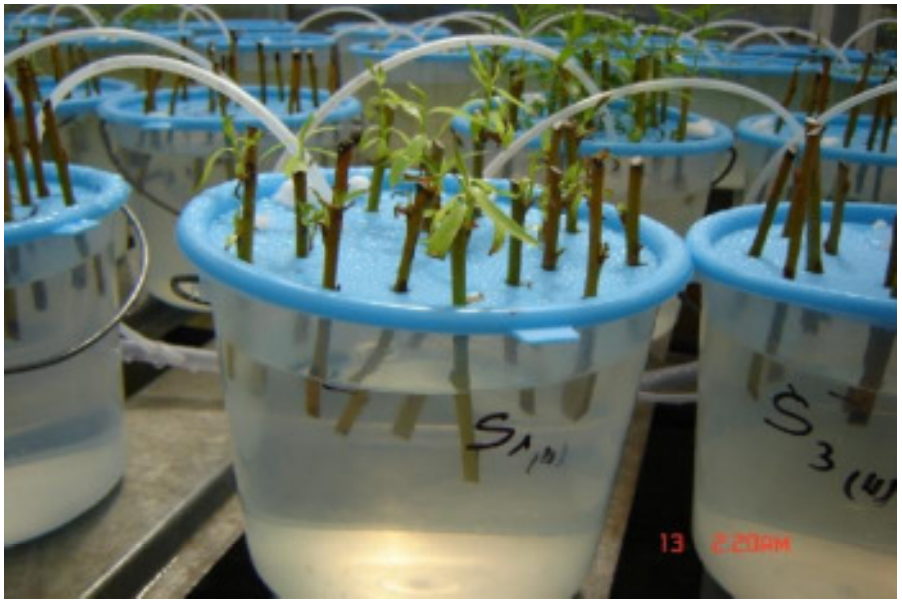


BOUTURAGE

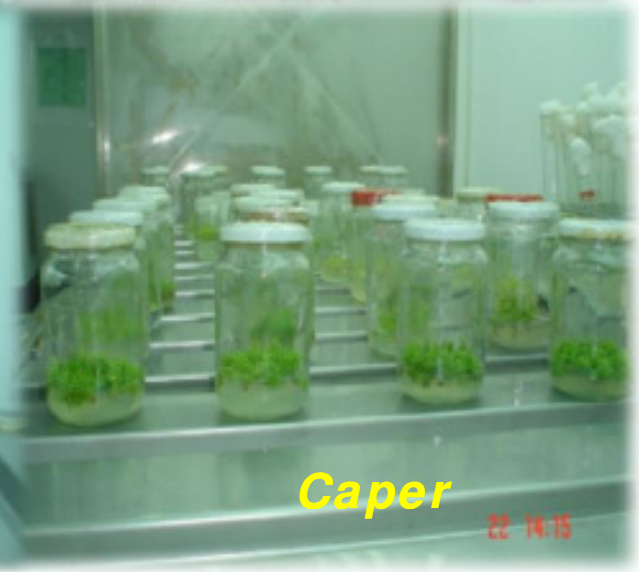


CULTURE HYDROPONIQUE





MICROBOUTURAGE

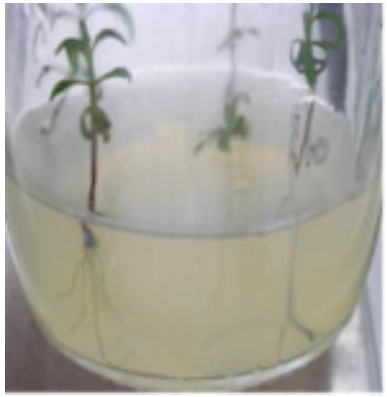


ORGANOGENESE

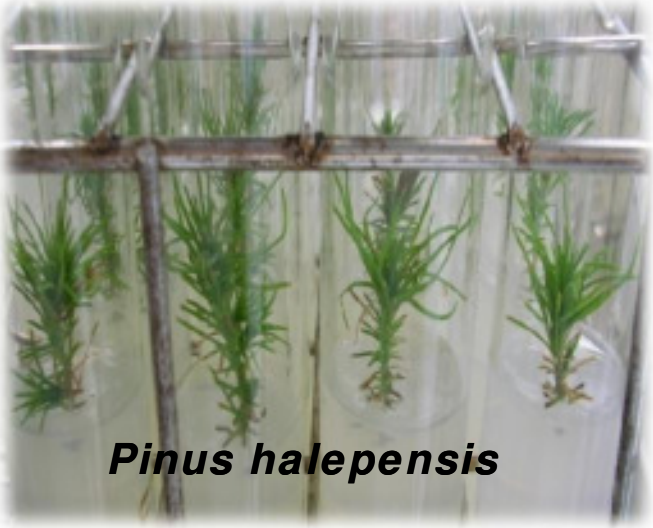
Propagation of *Eucalyptus*



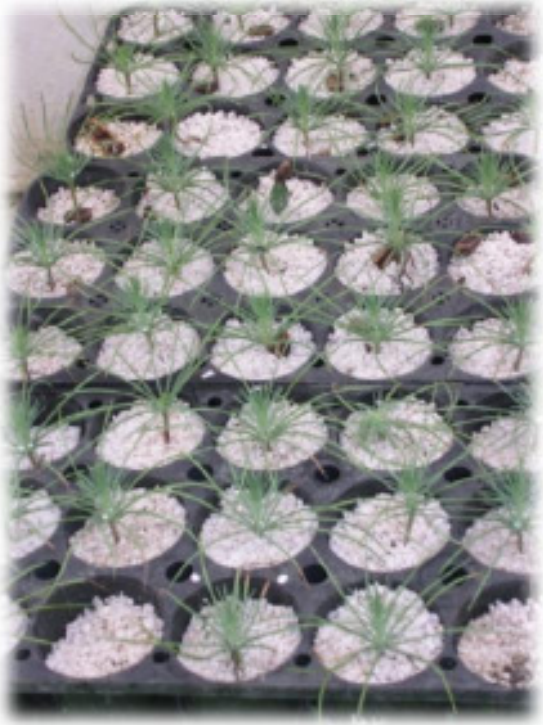





Propagation of *Pinus*



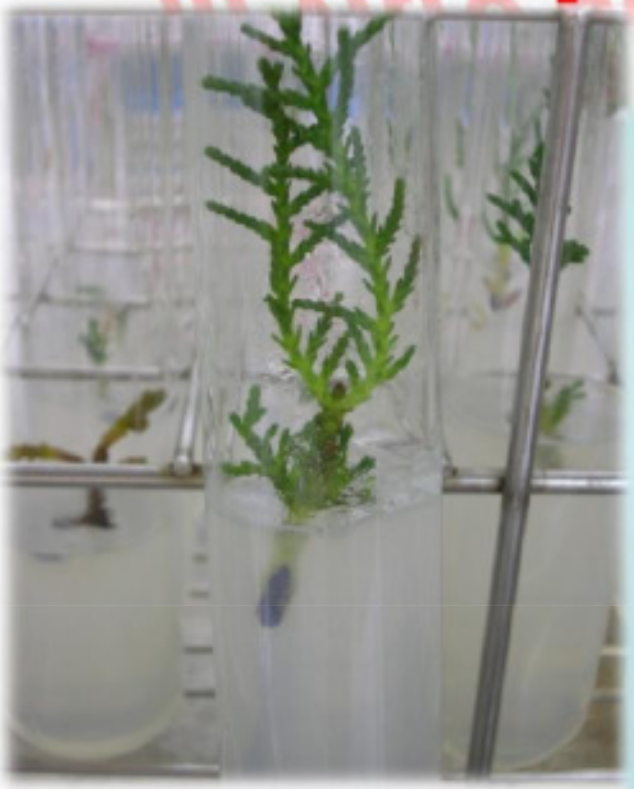
Pinus halepensis



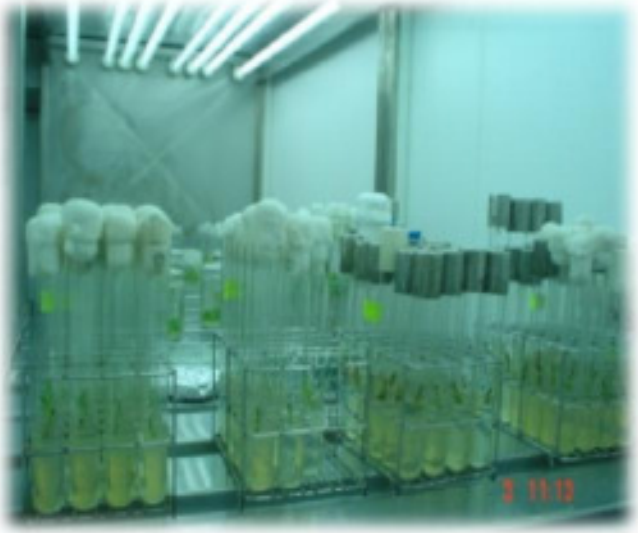
Pinus pinea

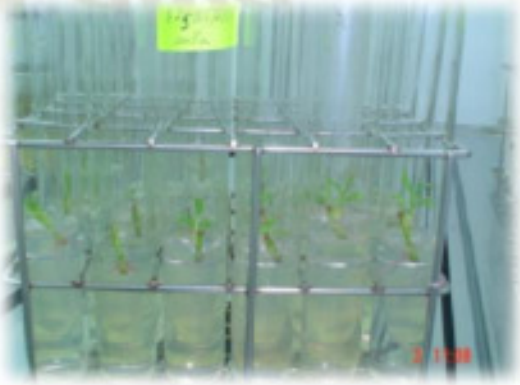
In vitro propagation of *cork oak*

in vitro propagation of *Cupressus*

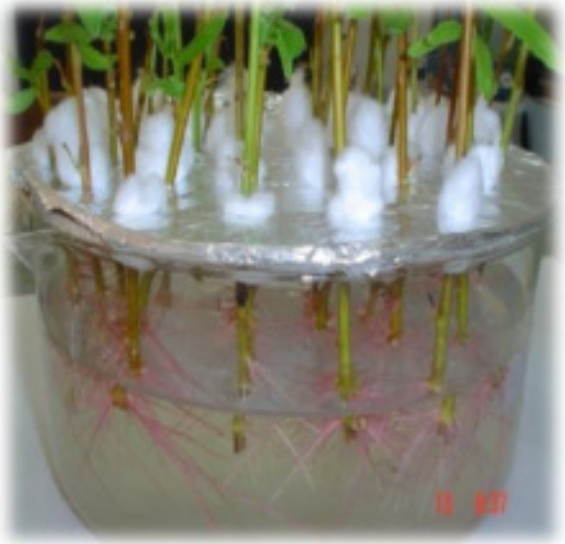


Propagation of *Salix alba*



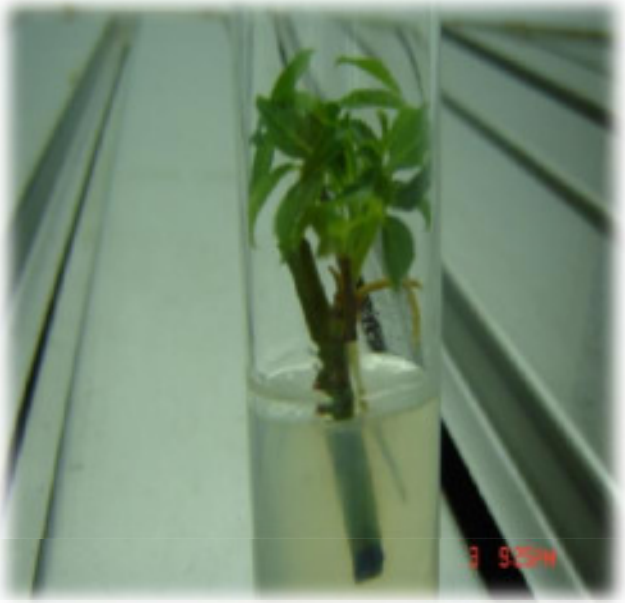


Microcuttings



Hydroponics culture

Propagation of *Rosa canina*



Microcuttings

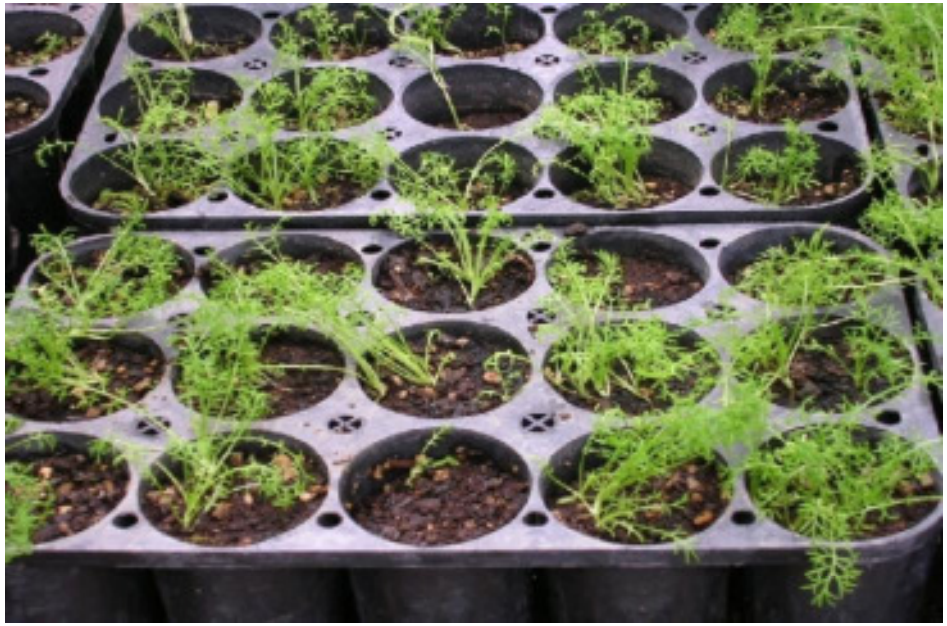
Cuttings

Propagation of *Arbustus unedo*

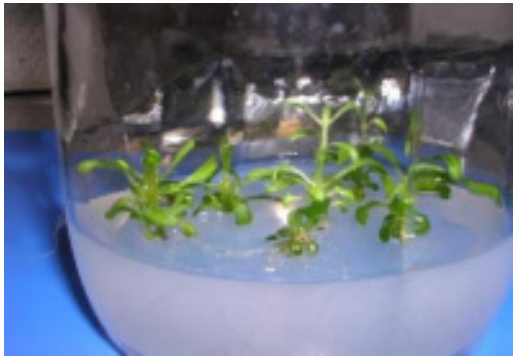
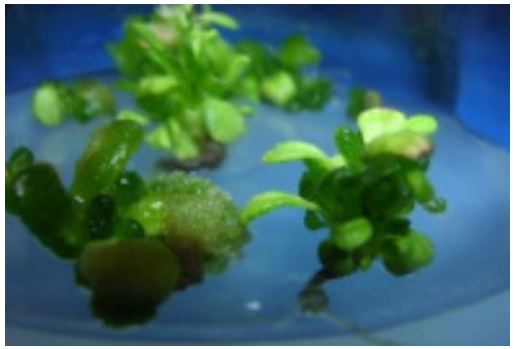
Microcuttings

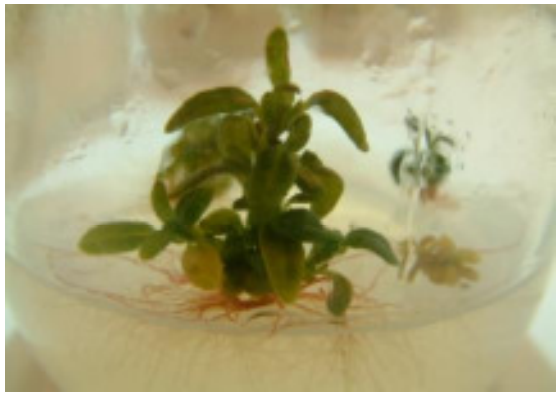
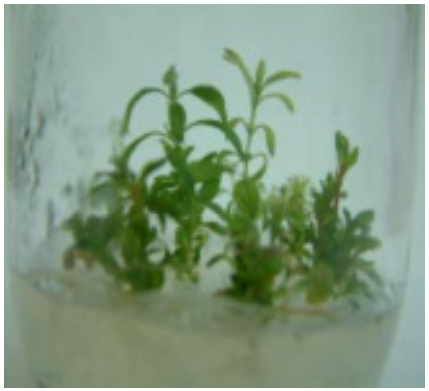
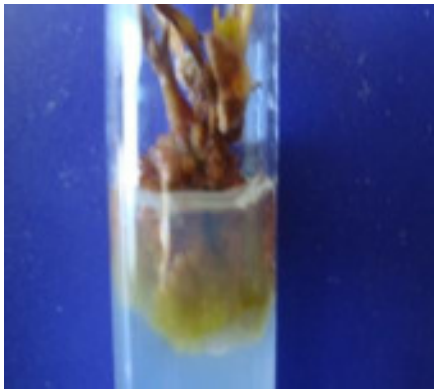
Cuttings

Propagation of *Leucanthemum parthenium*



Propagation of *Helianthemum lippii*

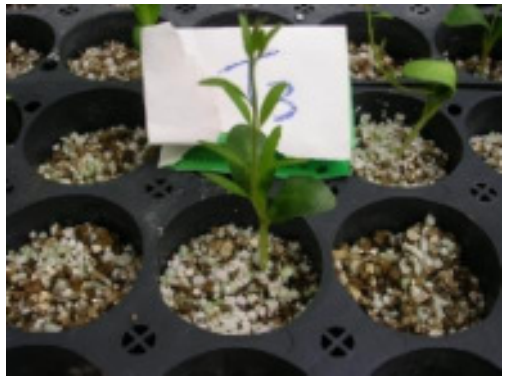






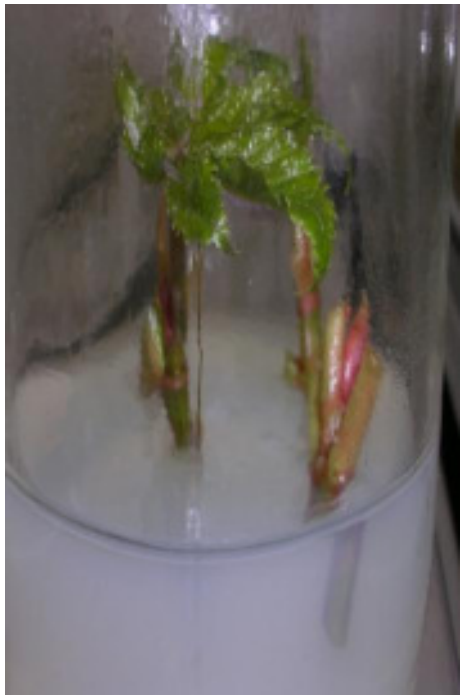
Propagation of *Nigella sativa*

Propagation of *Argania spinosa*



Jatropha : *Jatropha curcas*

Ricin : *Ricinus communis*

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