Synergies between research and training in front of the challenges of climate change: The example of Montpellier Sup Agro – INRA

5th Israeli wine convention in Rosh-Pina
25th of May 2014

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Montpellier’s research network
One of the most important centers in Agronomy in the world

Agriculture, food, biodiversity, ecology, environment
A cluster of research and higher education institutes in agricultural sciences...

- 2300 scientific fellows
- 1263 PhD students
- 80 research units
Vine & wine research

- Genetics
- Ecophysiology
- Pests biology
- Soil sciences
- Agro-ecology
- Biochemistry
- Bio-processing
- Agronomy
- Enology
- Economics
- Social sciences

- 11 research units
- 3 technology units
- 3 exp. estates

Total fellows for vine & wine
Researchers = 102
Ph. D = 25
Vine & wine research

LACCAVE : Metaproject 2012-2015 :
23 French Research Units
7 Work packages :
- Literature review
- Eco-physiology
- Innovation
- Local strategies
- Economic strategies
- Database
- Prospective
Vine & wine research

LACCAVE: Metaproject 2012-2015: Literature review: 564 articles

Copublications V&V entre centres INRA
2008 à 2012
Montpellier SupAgro

International Center for Higher Education in Agricultural Sciences
1600 students (including 220 PhD students), 90 teacher-researchers and 320 staff members.

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<th>Program</th>
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<td>Biology, Ecology &amp; Biodiversity</td>
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<td>Agronomy &amp; Crop Production</td>
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<td>Animal Sciences</td>
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<td>Water Sciences</td>
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<td>Computing, Bio-Statistic &amp; Precision Farming</td>
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IHEV
Institute for Higher Education in Vine and Wine
IHEV : Missions

Founded in 2004, (on a base of 150 years!) IHEV includes all courses offered within Montpellier SupAgro in the areas of Vine and Wine

(Staff: 8 - Teachers-Researchers: 30 people)

Actions
- Training courses
- Support and promotion of research activities
- Transfer of scientific knowledge and technology
IHEV supports and promotes research activities

The Institute works in cooperation with:

- 11 research units (Agap, CBGP, Diade, Eco&Sols, Innovation, Itap, Lepse, Lisah, Moisa, SPO, System)

- 3 technology units (consortium : Research Units and French Institute of Wine and Vine) : GENO-VIGNE, QUALINNOV & ECOTECH-VITI

- 3 experimental vineyard estates (Domaine du Chapitre, EU Pech Rouge, Domaine de Vassal)

   to coordinate research activities and transfer of scientific knowledge to professionals
Transfer of scientific knowledge and technology

The IHEV plays an important role and leads various activities in close cooperation with:

- international organizations (OIV, AUIV, GiESCO ...)
- national organizations (FranceAgrimer. ..)
- local authorities
- professional organizations (international, national and regional)

And a specific action in « foresight and strategy » for the wine sector (in link with UMR Moisa)
IHEV : Training programmes (LMD)

- Phd
- Bachelor's degree
- Master's degree
- Bachelor's degree

French Baccalaureat
Master of Sciences (M. Sc.)
of Viticulture & Enology

2007-2009 (P1)
2008-2010 (P2)
2009-2011 (P3)
2010-2012 (P4): Noam Resheef
2011-2013 (P5): Omri Ram
2012-2014 (Pinot Noir): Shaul Barkali
2013-2015 (Blanc de Noir): 33 students, 23 countries: Dor Amsalen
2014-2016: Kosto Noga
A consortium developing higher educational programs at international level?

- Lisbonne Porto
- Montpellier Bordeaux
- Geisenheim
- Udine Padou Verone
- Turin Milan Palerme
- Madrid
Master of Science of Viticulture & Oenology

University of Stellenbosch, South Africa
University of Cuyo, Mendoza, Argentina
INTA de Mendoza, Argentina
University of California, Davis, USA
University of Cornell, USA
Michigan State University, USA
State University of Fresno, USA
Institut National d’Agronomie de Tunis, Tunisia
Charles Sturt University, Wagga Wagga, Australia
University of Gyöngyös, Hungary
University of NWAFU, China
Horticulture Research Center of Marlborough, New Zealand
Brock University of St Catharines, Ontario, Canada
Embrapa Bento Gonçales, Brazil
Ecole d'ingénieur de Changins de Nyon, Swiss
Unité Expérimentale INRA Pech Rouge, France

> Extended partnership

www.vinifera-euromaster.eu
1. Full program

Master 1 - 60 ECTS – Common Core

M1 in France (English lessons)
- Montpellier SupAgro
- Bordeaux Sciences Agro

* Optional Master Thesis abroad (30 ECTS)
- North America, Asia, South America, Australia, Africa
- Under the supervision of one of the 12 associate partner

2. Direct M2 admission

Master 2 - 60 ECTS* – Countries’ choice

M2 in Germany (English lessons)
M2 in Portugal (English lessons)
M2 in Italy: Udine or Turino (English lessons)
M2 in Spain (Spanish lessons)

www.vinifera-euromaster.eu
1. Full program

Master 1 - 60 ECTS – Common Core

M1 in France (English lessons)

- Montpellier SupAgro
- Bordeaux Sciences Agro

i) « Cultural Intelligence »: how to find synergies between people with different backgrounds - think global / act local

ii) Ecophysiology: impact of climate change on grapevine, genetic improvement

iii) Viticulture: pruning, canopy system, harvest selection, irrigation, reduction of radiation…

iv) Enology: yeast selection, desalcoolisation, control of temperature…

v) Integrative study case: terroir auditing

www.vinifera-euromaster.eu
Master of Science of Viticulture & Œnology

2. Direct M2 admission

Master 2 - 60 ECTS* – Countries’ choice

- M2 in **Germany**: Cold climate viticulture, Climate change research unit (Prof. Hans Schultz)
- M2 in **Portugal** (Viticulture in tropical conditions / EMBRAPA Brazil)
- M2 in **Italy**: Udine (economic impact of climate change) or Torino (canopy management, innovation in viticulture)
- M2 in **Spain** (viticulture in dry conditions, innovation in enology)

www.vinifera-euromaster.eu
2. Master Thesis:

1 semester M2 Germany, Italy, Spain, Portugal or ...

* Optional Master Thesis abroad (30 ECTS)

- Relationship between climate indices, Phenology and **berry composition** of Touriga nacional in the Dao Wine region
- **The assessment of water stress for irrigation management** in Tempranillo grown in Southern Oregon
- Effect of **irrigation on berry quality** and skin cell wall composition in the grape varieties Touriga Nacional and Trincadeira
- **Influence of the row orientation on the berry temperature and the berry compounds**
- Managing carbohydrate balance during berry development to **optimise berry composition and wine quality** in a changing climate
- Alcohol Management - **Reducing the Alcohol Content of Wine**
- Evaluation of Nanofiltration membranes for the production of a **de-alcoholized beverage**
- **Influence of climate change on cost structure of two simulated wineries in Germany**

**North America, Asia, South America, Australia, Africa**

**Under the supervision of one of the 12 associate partner**

www.vinifera-euromaster.eu
IHEV : PhD

Years after the baccalaureat:

+ 8
+ 7
+ 6
+ 5
+ 4
+ 3
+ 2
+ 1

French Baccalaureat

Phd

Master's degree
Bachelor's degree

Bachelor

French engineering diploma V.O

DNCE MSc V.O Vinifera EuroMaster OIV MSc
PhD study at Montpellier SupAgro

SupAgro is: approx. 220 PhD students, attached to 4 schools/centres in 21 Research Units (UMR)

Ecoles doctorales

SIBAGHE systèmes intégrés en biologie, agronomie, géosciences, hydrosciences, environnement

TTSD territoires, temps, sociétés et développement

SP-SA Sciences des Procédés - Sciences des Aliments

EDEG Economie Gestion
PhD study and climate change

- Noam Resheef (Vinifera graduates 2012):
  rootstock-scion interaction in grapevine, the impact on the berry's developmental processes and final chemical composition in dried semi-arid climate (University of the Negev)

- Markus Rienht (Vinifera graduates 2012):
  impact of temperature on berry development and physiology (Montpellier SupAgro)

- James Boyer
  The role of the research and the innovation in the competitiveness of the French vineyards and their adaptation to climate change (Montpellier SupAgro)
Opportunities of collaboration between UE and Israel

i) Context: European Commission Programme for Research and innovation *Horizon 2020*

ii) Budget: 80 billion euros for ITN (initial training network) projects, fellowships, specific call for research project …

iii) Duration: 2014-2020

*One of the main focus is Climate Change as a Societal challenge*

*Israel is eligible as Associate country*

Opportunities of collaboration between UE and Israel

i) **Context** European Educational Programme Key Action 2: Cooperation and innovation for good practices

ii) **For who?** Universities, public or private institution, association, companies … from UE or other countries (Israel included)

iii) **Budget** 14.7 billion euros, for strategic project, scholarships for students and scholars …

iv) **Duration** 2014-2020

v) **Main activities:**

   • Strengthened cross-sectoral cooperation between organisations for exchanges of practice

   • Development, testing and/or implementation of innovative practices in the field of education and training

http://ec.europa.eu/programmes/erasmus-plus/
We are pleased to welcome you to IHEV

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michel.calleja@supagro.inra.fr