FIELD
FOREST
FOOD

DEPARTMENT OF AGRICULTURAL FOREST AND FOOD SCIENCES

F3

DISAFA

UNIVERSITA'
DEGLI STUDI
DI TORINO

1935
The Department of Agricultural Science is established at the University of Turin

1940-45
The Department is transferred to the town of Alba due to the dangers of WWII

1962
Acquisition of an experimental fruit cultivation farm in the town of Chieri

1974
Further incorporation of facilities for agronomy and livestock experimentations in Carmagnola

1979
Teaching commences in the subjects of Forestry and Environmental Sciences

1980
Viticulture and Enology are added to the list of degree programs

1998
The Department is moved to the current Grugliasco Campus

2000
Agrofood Science and Technology is offered as a degree option

2005
Degree options in Plant Biotechnology and Green Area Landscape Design become available in collaboration with other departments

2012
The five former Departments of Agricultural Sciences merged into one, becoming the Department of Agricultural, Forest and Food Sciences (DISAFA)

F3 DISAFA

114 LECTURERS AND RESEARCHERS

77 PHD STUDENTS

43 RESEARCH TECHNICIANS

100 SCHOLARSHIP/YEAR

40 NATIONAL & INTERNATIONAL COLLABORATIONS IN TEACHING AND RESEARCH

25 HECTARES OF FIELD AND RESEARCH FACILITIES AT THE GRUGLIASCO CAMPUS

3 EXPERIMENTAL FARMS

EDUCATION

DISAFA equips students with the necessary analytical skills and hands-on experience to manage complex forest, food and eld issues and apply their knowledge to real world situations.
Students address key issues by working in groups to pursue collaborative research outcomes.

Our faculty comprises of over 100 distinguished scholars and practitioners who are available to share expertise and practical lessons with students. The Department is continually seeking to innovate in the following ways:

- Offering high-level training programs in the subjects of agricultural, forest and food sciences.
- Providing a powerful network of related businesses and organizations which students can benefit from by applying their acquired skills from a range of both curricula and extracurricular internships.

The **DISAFA** curriculum covers key areas of Agricultural Science and Technology, Forestry and Environmental Sciences, Food Technology, Viticulture and Enology, and Animal Science. Students may also take advantage of dual degree programs in Plant Biotechnology, Green Areas and Landscape Design, Viticulture and Enology Sciences.

For more information: **www.disafa.unito.it**

PhD PROGRAM

The PhD **Program in Agriculture, Forest and Food Sciences at the School of Science and Innovative Technologies** is designed to provide rigorous scientific training that develops doctoral candidates with a deep understanding of critical issues related to agriculture, forests and food systems. The program also provides skills in planning and the ability to create research projects individually following criteria set out by the international scientific community.

The professional expertise obtained by the program is characterized by the ability to manage and critically analyze new and complex concepts. The degree leads to exciting career prospects in national and international public, private and nonprofit organizations.
The PhD Program embodies **DISAFA**'s commitment to the growth of each student through rewarding opportunities for international collaboration with leading experts in the field, as well as providing professional development through a range of management and research projects.

For more information: **dott-safa.campusnet.unito.it/do/home.pl**

The campus includes cutting-edge research labs equipped with advanced instruments for the analysis of complex and structured matrices for specific topics (e.g. microbiology, food technologies, physiology and plant genetics, plant pathology, soil, wood technology, etc.)

It is also equipped with an Open Access Laboratory SIQuAN (Scale Imaging for Quality in Agrifood Chain) represented by a set of 3 platforms (PhenoPlant, LandSensor, AgriData) equipped with tools able to analyze the spectral response of the cultivated areas, key element for the upscaling and global quality research in the context of precision farming.

RESEARCH

Considering the current projections of human population growth and its impact on our natural resources, together with the necessity to improve the quality of life, it is imperative that new and innovative approaches are created to mitigate these rising challenges.

The Department of Agricultural, Forest and Food Sciences (**DISAFA**) is a leading academic institution that undertakes strategic research at the forefront of tackling the most pressing challenges in agricultural, forest and food systems. **Particular emphasis is on applying cutting-edge strategies in sustainability, quality and innovation.**

The strength of **DISAFA**'s research lies in its multidisciplinary approach to the most relevant and critical aspects of sustainable development. We bring together scientific expertise necessary to consider agricultural, food and natural systems as one. It is this holistic approach that allows us to evaluate future scenarios and develop sustainable solutions that safeguard natural resources.

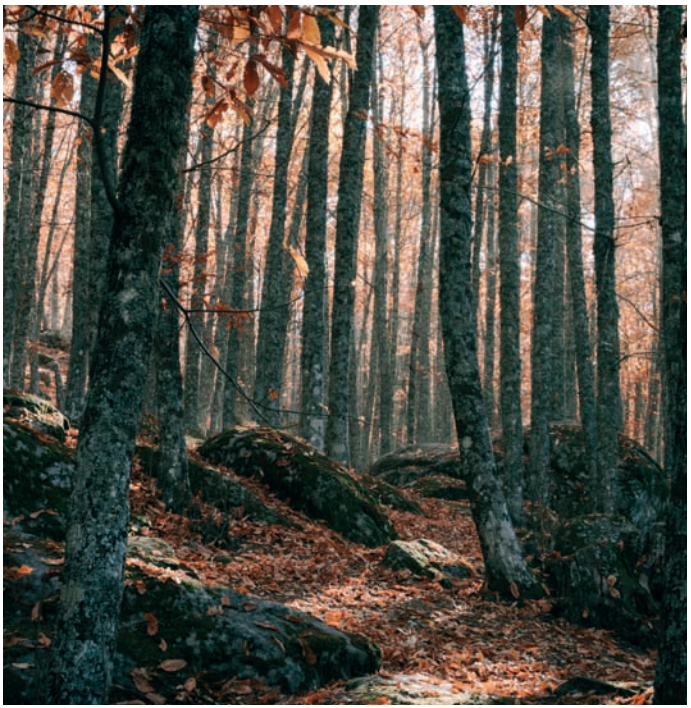
DISAFA is home to a wide variety of acclaimed research facilities, from well-equipped laboratories and greenhouses to our network of experimental farms and field research sites. These facilities support **DISAFA**'s excellence in both fundamental and applied research, as well as our capability to effectively tackle the environment's most important challenges.

RESEARCH

Our research environment also attracts numerous leading international scientists who have chosen to carry out their research on our campus. **DISAFA** has an excellent track record in securing research funding through our participation in various national and international projects. This success of our scientific production and impact is also strongly linked to our capacity in building productive collaborations and partnerships with other Italian, EU and global research institutes.

DISAFA is committed to engaging with end-users, policy makers and other key stakeholders at local, national and international levels. **Our relevance in innovation and knowledge transfer is promoted through the registration of patents and the establishment of various spin-off companies.**

For more information: **www.disafa.unito.it**



FIELD

F3 DISAFA

THE CHALLENGE:

FUTURE AGRICULTURAL SYSTEMS NEED TO INCREASE BOTH EFFICIENCY AND SUSTAINABILITY

DISAFA's approach to the future of agriculture touches upon several key points that question the ability to grow and produce effectively while maintaining output quantity and quality. Modern agriculture should enhance biodiversity and the quality of natural resources.
For this reason, primary production is not only viewed as a value chain ranging from producer to consumer, but more importantly as a living and working environment where different actors interact efficiently for sustainable resource use and crop and animal production quality. **Thus, production can be analyzed through complex scenarios that show the limitations in growth rates and the need for more sustainable practices and quality control.**

Tackling these issues requires collaboration across multiple academic disciplines and at different hierarchical levels. I**mproving the resilience of production and breeding requires wide-spread understanding of cellular processes, field scales, engineering applications, agricultural business strategies and agroecosystems.**

Key research activities:

- Efficient use of natural resources (water, soil, biodiversity)in production and breeding
- Practical skills and sustainable management of crop protection
- Genetic enhancements in both crop cultivation and animals
- Efficiency in agricultural business
- Precision technology in agriculture management
- Clear and attainable results in production quality and safe chain production systems

Key research outcomes:

- Support of agricultural communities and companies in order to provide resilience to the unpredictable vulnerabilities of climate change, the market and the use of resources
- Technology that allows research partners to achieve production objectives in efficiency and quality
- Agricultural plans of action, systems, products and risk management services
- Methods tested for reducing the impacts of external forces on agro-ecosystems
- Decision-based support, automation and control systems, technology and process in agriculture and breeding.

FIELD

FOREST

THE CHALLENGE:

PROMOTING THE SUSTAINABLE USE OF NATURAL CAPITAL

Our research in forest science focuses on the sustainable use of natural and cultural resources. Our research activities bring together trans-disciplinary expertise on the performance of land, forest and pastoral systems, which are characterized by complex biology and socio-economics structure. **We study how land-use and climate change influence ecosystem function and service, as well as natural hazards and associated risks in order to predict future scenarios and developing innovative management strategies.** Our research initiatives are carried out at different levels, in collaboration with public institutions and private companies, and benefit from a variety of national and international collaborations.

Key applied research activities:

- Development of management strategies and techniques (e.g. genetics) for conservation and promotion of ecosystem services in forestry and agro-pastoral systems in mountain areas
- Identification of innovative techniques and instruments (e.g. remote sensing) for the management and planning of forests and landscapes
- Identification of specific economic development models for forests and rural areas
- Development of strategies and innovative techniques for the ecological restoration of anthropogenic disturbed areas
- Understanding of soil genesis, nutrient dynamics, and pollutant fate and distribution
- Monitoring of forest insects and phytopathogenic fungi
- Development of biological, chemical and integrated defense strategies

Key applied research outcomes:

- Preserving the natural capital and green infrastructures at the local, regional and national scale
- Enhancing sustainable forest management and continuous provisions of ecosystem services
- Promoting wood as a raw material and a renewable energy source
- Supporting agro-pastoral systems and their multifunctional management
- Advancing the mitigation and prevention of natural risks in forest systems from urban to mountainous environments
- Improving the restoration of degraded areas
- Expanding soil conservation efforts and the sustainable use of natural resources in forests and rural areas

F3 DISAFA

FOREST

FOOD

THE CHALLENGE:

CREATING OPPORTUNITIES AND EFFICIENCIES IN THE FOOD VALUE CHAIN

Researching innovative solutions in production, processing and services in the food and wine industry can be a painstaking challenge.
But the impact from achieving such solutions are most rewarding, incentivizing us to guide complex social changes and inspire an evolution of consumer behavior that creates positive lifestyle choices and an enhanced understanding of the food-health relationship.

Creating opportunities and efficiencies in the food value chain also requires the matching of future consumer needs.
It is the growth of rapid technological innovation, new suppliers and consumers collaborating together across the market creating scenarios that are only answerable with strong commitments to core and applied research and a scaling-up of the private sector (large food companies, Small and Medium Enterprises, associations, consortiums).

These different approaches used by DISAFA's research teams provide a multi and inter-disciplinary view of food systems and the fulfilment of research plans for the development of new solutions to improve food supplies.

Key research activities:

- Enhancing and optimizing food processing, storage and distribution
- Innovative products and processes
- Bio-resources and the use of by-products
- ICT technology
- Food and health
- The economy and structuring of the value chain
- Consumer analyses

Key research outcomes:

- An analysis and creation of new production chains through new product implementation
- New methods and technologies in food safety
- Traceability systems
- Optimization and promotion of innovative processes linked to highly distinguished products (DOP, IGP, DOCG)
- A reduction in food loss and food waste
- Enhanced information on the issue of food and health

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FOOD

FACTS & FIGURES

DISAFA was awarded a multi-annual funding within the Ministerial program "Departments of Excellence 2018-2022".

The project received the best evaluation among those presented in the Field of Global qualty in agri food system
This result recognizes the importance of a project that aims at placing the Department within the European Research Area, by increasing the international mobility of teaching staff and students and will also provide you with new opportunities for young people.

The research themes developed by **DISAFA** are in line in the Strategic Agenda for Research and Innovation of the European Food Technology Platform (ETP): Food for Tomorrow's Consumer: industry to the benefit of a sustainable society (http://etp.fooddrinkeurope.eu/), in which **DISAFA** represents the University of Turin in the Leadership Team.

INTERNATIONAL SCIENTIFIC PAPER (2014 - 2017)

953

ACTIVE RESEARCH PROJECT 2017

266

8

RESEARCH BUDGET (Mlm Euro 2017)

DISAFA's mission is to link natural patterns and clear innovation strategies across the various agricultural production sectors and within current economic and rural sociological contexts.

In this way, the department is aligned with the University's aim of "**Creating, enhancing and dispersing knowledge in order to give back social, cultural and economic development to the land.**"

FACTS & FIGURES

500
AFFILIATED COMPANIES FOR APPRENTICESHIPS

270
CURRICULAR APPRENTICESHIPS YEAR

25
EXTRACURRICULAR APPRENTICESHIPS YEAR

7
SPIN-OFF COMPANIES

200
RESEARCH CONVENTIONS ATTENDED/YEAR

15
PATENTS (2014 - 2017)

DEPARTMENT OF AGRICULTURAL FOREST AND FOOD SCIENCES

DISAFA

F3 FIELD FOREST FOOD

The internationalization of teaching includes English courses in Master's Degrees, exchanges of teachers and students with European Universities (46 active Erasmus agreements with 15 countries) and non-European countries, exchanges of researchers and PhD students in the field of doctoral and research activities of the different groups operating in the department.

The Masters degree in Viticulture and Oenological Sciences is part of the European EMaVE consortium (European Master of Viticulture and Enology) whose partners are the universities of Udine, Padua, Verona, Bolzano, Lisbon, the Polytechnic University of Madrid, the Hochschule of University of Geisenheim (DE) and SUPAGRO of Montpellier.

The Master's Degree in Agricultural Sciences includes a semester of English courses at **DISAFA** and one at the VetAgroSup in Clermont-Ferrand. Finally, a new master's degree in Food System will be launched soon and a Summer School on "Entrepreneurship for the innovation of food products" in English.

CAMPUS

The Grugliasco Campus of the University of Turin was established in 1998 In addition to **DISAFA**, the campus also houses the Department of Veterinary Medicine and a Veterinary Hospital, as well as the offices of Agrinnova.

Future expansion is planned through the incorporation of other Scientific Departments.

In addition to its lecture halls, administrative offices, library and study areas, a number of other modern facilities are offered to students, including 450 mq of experimental greenhouses, 3 ha of farmland, 140 mq of climatized space for the study of mid to long-term experiments in isolated conditions.

Additionally, the campus includes cutting-edge research labs equipped with advanced instruments for the analysis of plants, soil and food.

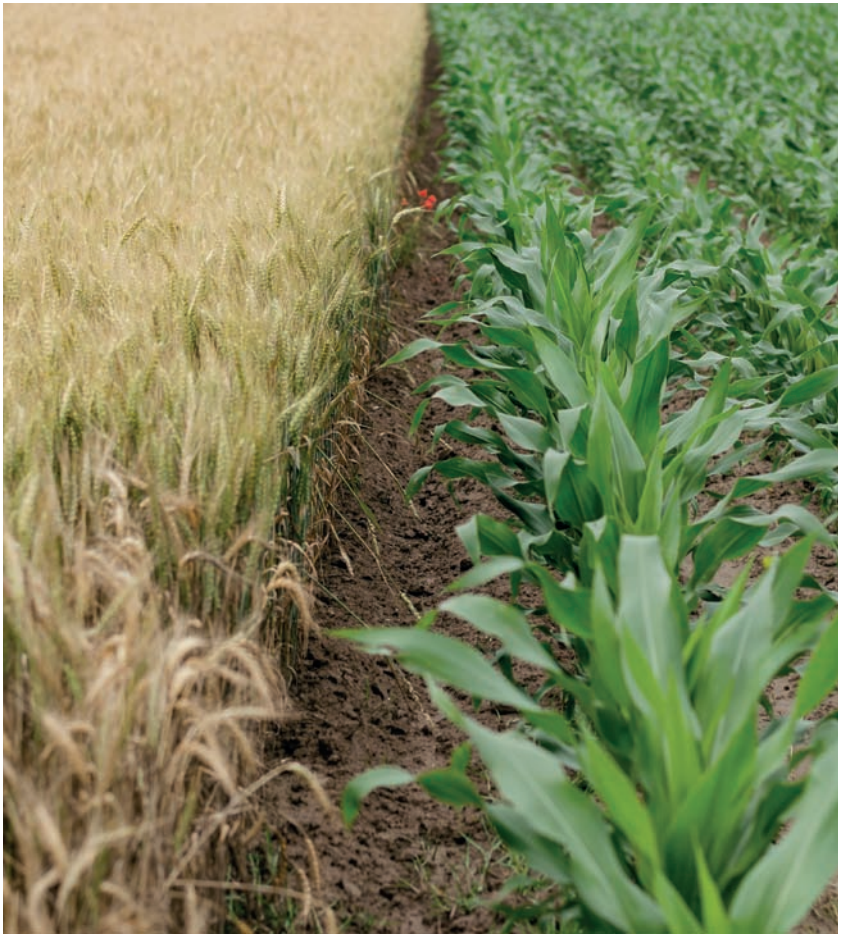
EXTERNAL LOCATIONS

DISAFA's long tradition of hands-on research comes from the use of surrounding land for experimentations and teaching.

Research has been performed with the access to a network of expert organizations throughout Piedmont with specific locations in Alba, Cuneo and Asti. The Department also has research activities on 3 experimental farms for a total of 20 ha.

Moreover, **DISAFA** collaborates with the Inter-Departmental Research Center on Natural Risks in Mountain and Hilly Environments (NatRisk), the Interdepartmental Center of Research and Technical and Scientific Cooperation with Africa (CISAO), the Crop Protection Technology Laboratory, the Beekeeper Observatory and the Bonafous experimental facilities at Chieri.

CAMPUS



CAMPUS

(1) GRUGLIASCO - ITALIA
Largo Paolo Braccini 2
Tel. +39 011 670 8760

EXTERNAL LOCATIONS

(2) CUNEO - ITALIA
Piazza Torino 3
Tel. +39 0171 690461 Fax +39 0171 453245

(3) ASTI - ITALIA
Polo universitario, Piazzale De André
Tel. +39 011 6706887 Fax +39 011 6706892

(4) ALBA (CN) - ITALIA
corso Enotria, 2/c
Tel. +39 0173 441486 Fax +39 0173 441349

EXPERIMENTAL STATION

(5) Crop production and Livestock experimental Station TETTO FRATI Carmagnola (TO)
Fruit tree experimental
(6) Station TETTI GRONDANA Chieri (TO)
Beekeeper experimental Station REAGLIE (TO)

Download Brochure

UNIVERSITA' DEGLI STUDI DI TORINO

DISAFA
Università degli studi di Torino

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