



International Master in Plant Breeding

XXII Edition
(September 2018 - June 2020)



Universitat de Lleida

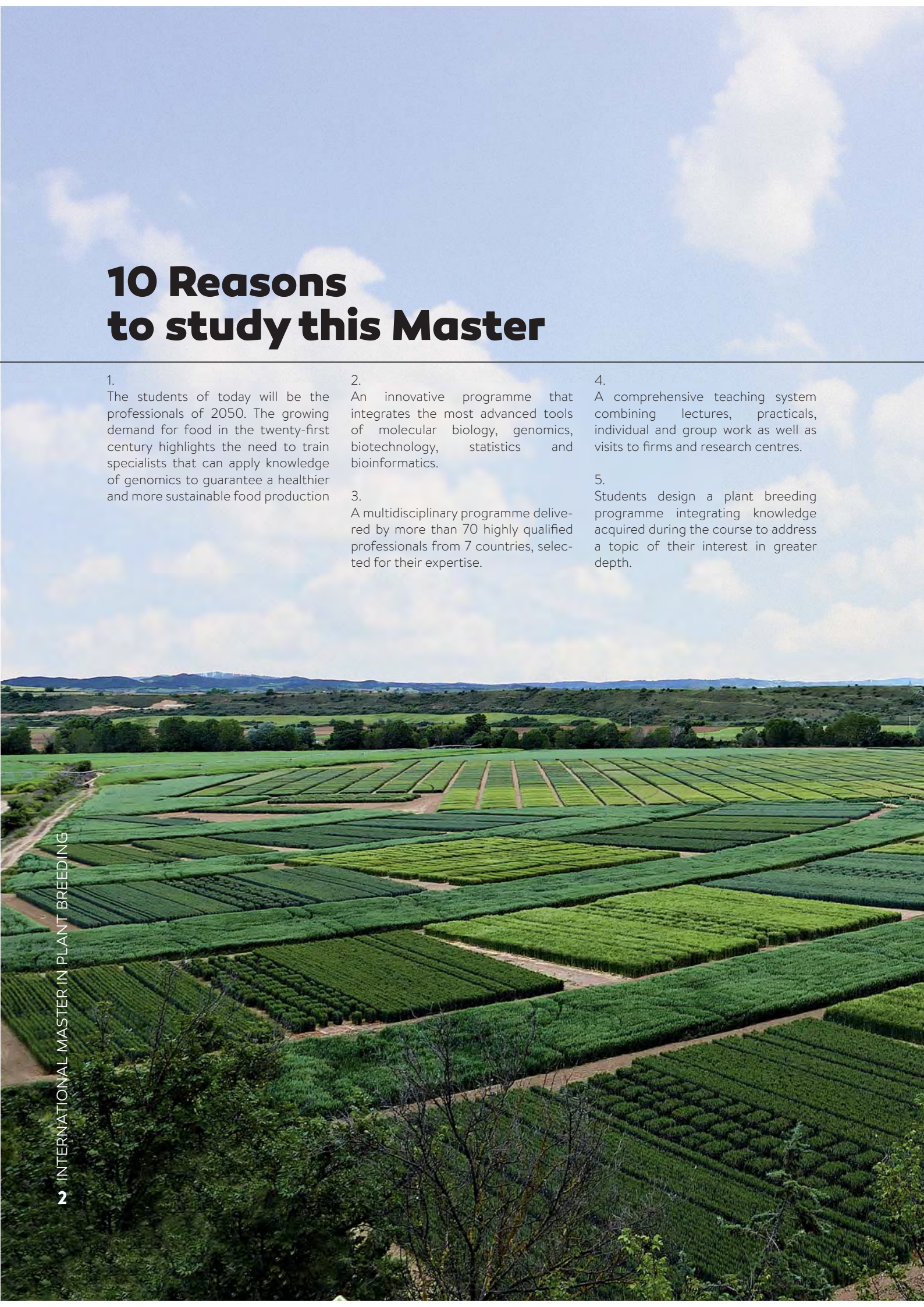
Official Master: RUCT 50012190



CIHEAM
IAM ZARAGOZA

10 Reasons to study this Master

1. The students of today will be the professionals of 2050. The growing demand for food in the twenty-first century highlights the need to train specialists that can apply knowledge of genomics to guarantee a healthier and more sustainable food production
2. An innovative programme that integrates the most advanced tools of molecular biology, genomics, biotechnology, statistics and bioinformatics.
3. A multidisciplinary programme delivered by more than 70 highly qualified professionals from 7 countries, selected for their expertise.
4. A comprehensive teaching system combining lectures, practicals, individual and group work as well as visits to firms and research centres.
5. Students design a plant breeding programme integrating knowledge acquired during the course to address a topic of their interest in greater depth.



6. The possibility of conducting a second year, of introduction to research at a university, research centre or firm in Spain or abroad.

7. The majority of students graduated from recent editions of this Master are now employed in related topics or are preparing their doctoral thesis.

8. A multicultural environment shared with students and lecturers from over 30 countries.

9. An opportunity to establish a network of contacts and collaboration, a clear differentiating advantage in the professional field.

10. A double degree qualification awarded by CIHEAM and UdL, accredited as excellent by the Catalan University Quality Assurance Agency (AQU) and recognized as an International Master Programme by the Agency for Management of University and Research Grants (AGAUR)





Who we are

IAMZ-CIHEAM

The Mediterranean Agronomic Institute of Zaragoza (IAMZ) is one of the four Institutes of the International Centre for Advanced Agronomic Mediterranean Studies (CIHEAM), together with Bari in Italy, Montpellier in France and Chania in Greece.

CIHEAM is an intergovernmental organization created **more than 50 years** ago under the aegis of the **Council of Europe** and the **OECD** with the mission to develop cooperation between the countries of the Mediterranean through postgraduate training and promotion of cooperative research in the agro-food, fisheries and natural resources sector.

IAMZ was founded in **1969**, offering complementary quality and excellence in international training and cooperation through research project management based on IAMZ's five fields of study: Environment, Fisheries and Aquaculture, Animal Production, Plant Production and Food Technology and Agro-food Marketing.

IAMZ has become consolidated as a point of reference for specialized international training in the agro-food sector. It is located on the Campus of Aula Dei, one of the largest and most prestigious agricultural science complexes in Spain, strengthening synergies between the scientific community, firms and students.

IAMZ offers two lines of training: Master programmes and advanced courses. IAMZ's training activities have great international repercussion, and each year more than 450 university graduates attend our programmes delivered by over 250 guest lecturers from approximately 80 countries. This is an enriching multicultural experience and a unique opportunity to build international professional and collaborative networks.

UdL

The University of Lleida (UdL) as it stands today, is a legacy of the Institution «Estudi General de Lleida» founded by Jaime II de Aragón in 1297, and combines a longstanding and fruitful university tradition with a fresh and dynamic structure to achieve quality in research and excellence in training through advanced teaching methods.

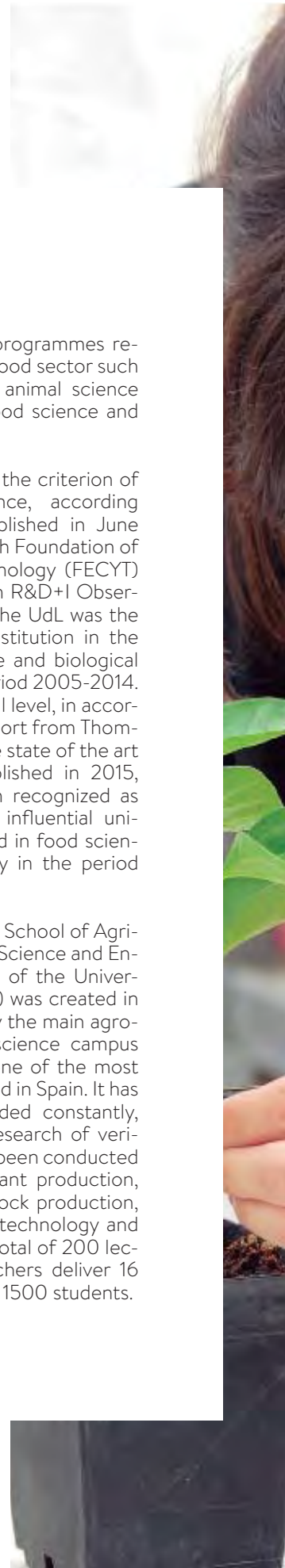
Distinguished with the "Campus of International Excellence" for the Iberus project shared with the universities of Zaragoza, La Rioja and the Public University of Navarre, UdL's mission is to generate, spread and apply knowledge.

With more than 11,000 students, the UdL is the only university in Catalonia and one of the few in Spain to include agricultural and forestry engineering and veterinary science among its offer of degree courses, besides other

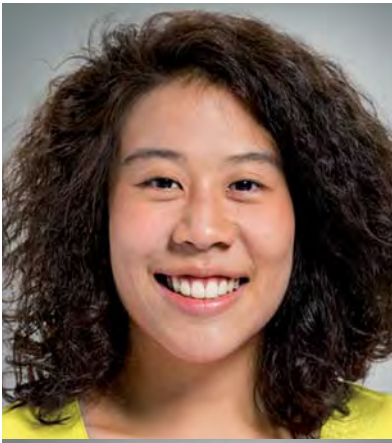
graduate degree programmes related to the agro-food sector such as biotechnology, animal science and health, and food science and technology.

In coherence with the criterion of scientific excellence, according to the report published in June 2016 by the Spanish Foundation of Science and Technology (FECYT) and by the Spanish R&D+I Observatory (ICONO), the UdL was the leading Spanish institution in the area of agriculture and biological science for the period 2005-2014. On an international level, in accordance with the report from Thomson Reuters on the state of the art of innovation published in 2015, the UdL has been recognized as the second most influential university in the world in food science and technology in the period 2004-2014.

The campus of the School of Agro-food and Forestry Science and Engineering (ETSEA) of the University of Lleida (UdL) was created in 1972. It is currently the main agro-food and forest science campus in Catalonia and one of the most important of its kind in Spain. It has grown and expanded constantly, and studies and research of verifiable quality have been conducted in the fields of plant production, forestry and livestock production, food science and technology and biotechnology. A total of 200 lecturers and researchers deliver 16 degrees to around 1500 students.







15000
students



170
publications



140
nationalities
among lecturers
and students



50
years of
experience



60
agreements with
national and
international
organizations





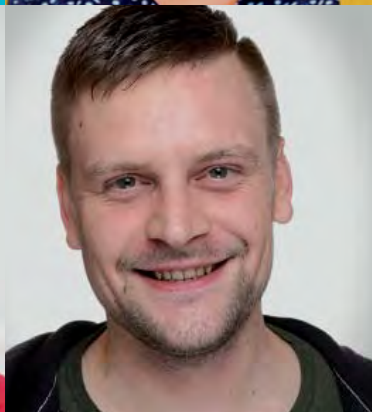
10000
guest lecturers



6700
scholarships



40
research projects
and networks



9
MSc programmes

400
courses for
professionals





Organization

The Master in Plant Breeding is an official Master of two years' duration (120 ECTS), jointly organized by **IAMZ-CIHEAM** and **UdL (Universitat de Lleida)**.



**Scientific coordinator
Ignacio Romagosa**

UdL, Dept. de Producció Vegetal
i Ciència Forestal
infomaster@ugc-etsea.udl.cat



**Technical coordinator
Ramzi Belkhdja**

IAMZ-CIHEAM
belkodja@iamz.ciheam.org

The Master's Webpage: www.masterplantbreeding.com

Programme

The Master has a duration of two years and is designed to train professionals in the field of plant breeding by integrating the tools of cell biology, molecular biology, genomics, biotechnology and bioinformatics into classical selection methods. The **first year (60 ECTS)** is professionally oriented and comprises lectures, field and laboratory practicals, personal and group work and study, and visits to leading companies. Technical experts from Limagrain, Syngenta, Monsanto, Pioneer or Ramiro Arnedo have participated in past editions. Throughout the first year, students have the opportunity to design a breeding programme for a plant species of their choice, applied to specific environmental and socio-economic conditions and following objectives.

This project enables students to:

- 1.** Apply the principles and methodology presented during the course.
- 2.** Gain experience in finding technical and scientific information, and in the selective treatment of such information.
- 3.** Make a critical assessment of different breeding alternatives
- 4.** Learn how to define and integrate the different components of a breeding programme.
- 5.** Acquire experience in the preparation and presentation of oral communications and their public defence.

Syllabus

First year

Introduction to plant breeding and genetics

5 ECTS

Experimental design and analysis for plant breeding

6 ECTS

Population and quantitative genetics

6 ECTS

Molecular markers and QTL mapping

5 ECTS

Gene, genomics and GM technologies

6 ECTS

Variety development and deployment

7 ECTS

Other breeding technologies

4 ECTS

Trait breeding

7 ECTS

Review of applied breeding programmes

7 ECTS

Design of a plant breeding programme

7 ECTS

Second year

Introduction to research



Final Master Project (Master Thesis)





Plant breeding programmes designed by students



Hicham Benthami:
“Breeding for seedlessness in oranges (*Citrus sinensis*): Genetic basis and strategy of selection”.
2008/2009 edition.



Santiago Ostengo:
“Sugar cane (*Saccharum* spp.) breeding: Development of high sugar yielding varieties for Tucuman in Argentina”.
2008/2009 edition.



Christian Alfaro Jara:
“Breeding for Durum wheat (*Triticum turgidum* L. spp. *Durum*) adaptation to south central Chile”.
2010/2011 edition.



Apolinar Saldaña Tafur:
“Eucalyptus breeding through interspecific hybrid lines”.
2010/2011 edition.



Erica Fadón Adrián:
“Cherry (*Prunus avium* L.) breeding programme in Aragon: extension of the ripening period and self compatibility”.
2010/2011 edition.



Arantxa Monteagudo Gálvez:
“Breeding *Triticum aestivum* through genetic transformation. Development of reduced toxicity varieties for coeliacs”.
2012/2013 edition.



Ramón Botet Vaca:
“Breeding olive (*Olea europaea*) varieties for tolerance to *Verticillium dahliae* and higher oil stability”.
2012/2013 edition.



Lara Pereira García:
“Pyramidalization of resistance genes to powdery mildew in barley”.
2012/2013 edition.



Francisco Carlos Balas Torres:
“Fruit quality traits improvement in Carambola (*Averrhoa carambola* L.) in the Canary Islands”.
2014/2015 edition.



Sergio Francisco Pérez Navarro:
“Breeding *Pelargonium zonale* for resistance to *Xanthomonas hortorum* pv. *Pelargonii* through somatic hybridization”.
2014/2015 edition.



Miriam FernándezCalleja:
“Development of a lodging-resistant variety of Teff [*Eragrostis tef* (zucc.) Trotter]”.
2016/2017 edition.



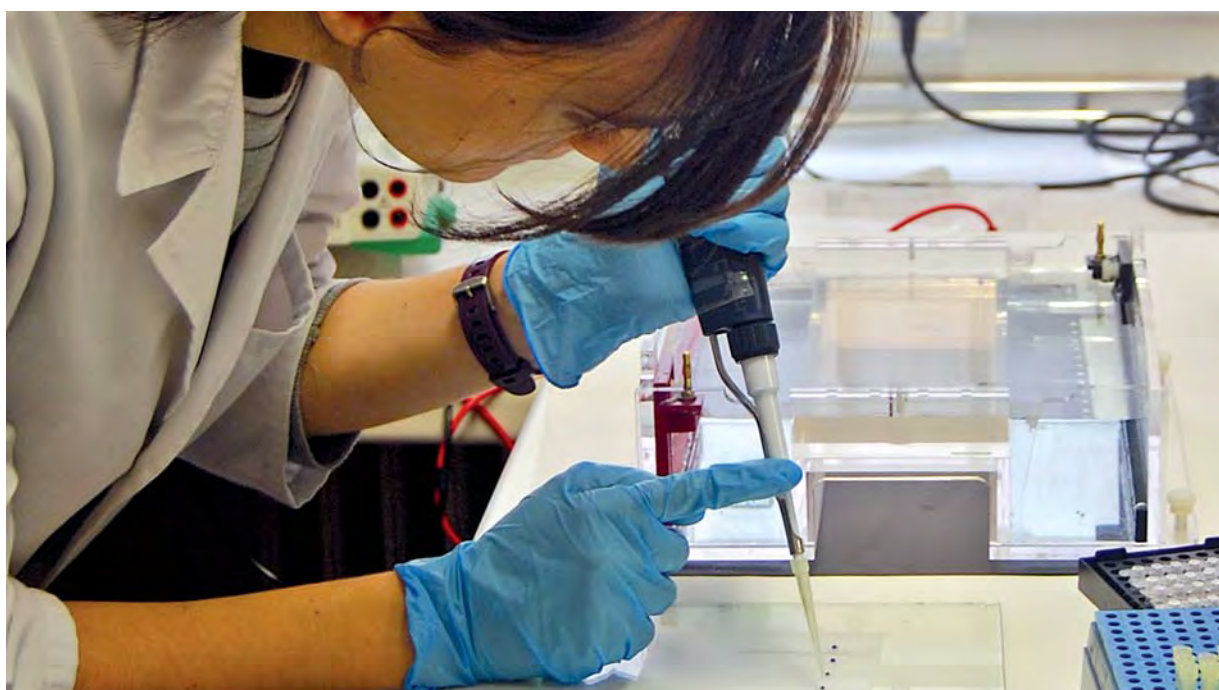
Amri Rihab:
“Breeding for self-compatibility in almond cultivars with low chilling requirements in Tunisia”.
2016/2017 edition.

The **second year** of the programme (**60 ECTS**) is oriented towards initiation to research, applying knowledge, skills and competencies acquired during the first year to address real problems related to plant breeding. Second-year Master students carry out the **Practicum and Final Master Project (Master Thesis)** at the **UdL** or at universities, research centres or in national and international firms.

The flexibility of the Master permits students to take separate modules on a

specific topic of their choice. The lectures are delivered in English and Spanish with **simultaneous interpretation.**

Furthermore, for those students that do not have basic knowledge of Spanish, a preliminary language course is offered to facilitate adaptation to the IAMZ experience.



The Master prepares students to reach the following objectives:

1. To understand the basics and principles of modern plant breeding, including molecular, genomic and biotechnological techniques.
2. To be acquainted with the different selection and breeding processes and assess the advantages and disadvantages of each according to crop features, breeding objectives and environmental conditions.
3. To acquire the necessary skills to integrate the conventional and most up-to-date techniques, that increase efficacy in the selection processes and improve the development of new varieties in a breeding programme.
4. To design breeding programmes for a specific crop species under particular conditions of a country or region according to certain objectives.
5. To be introduced into research, and apply knowledge, skills and competencies to the critical treatment of plant breeding problems.



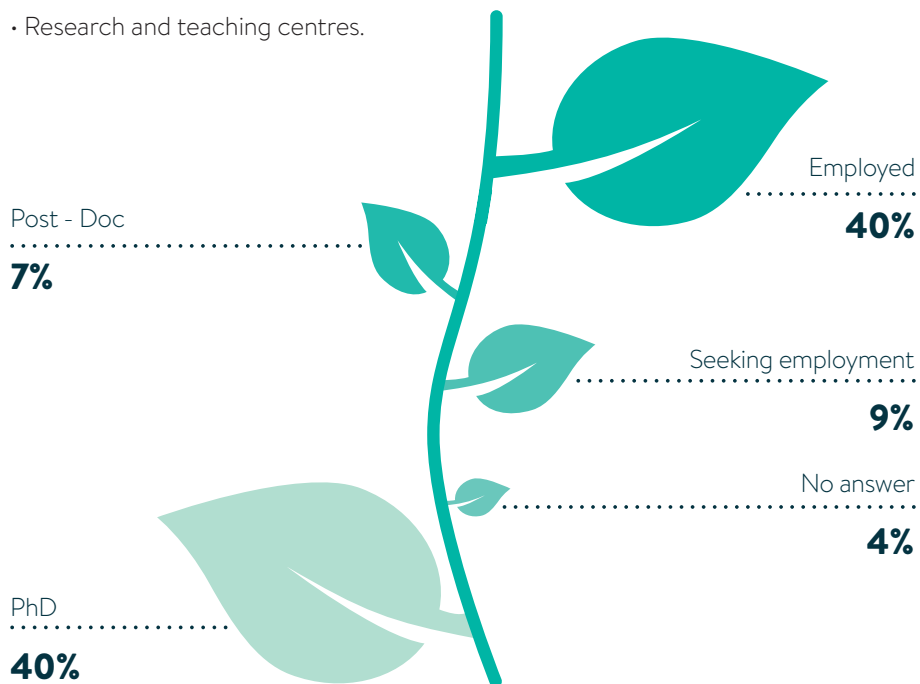
Career opportunities

The Master in Plant Breeding opens up a wide range of employment opportunities. The specialization profile of the Master degree prepares alumni to take on technical responsibilities and conduct high level scientific research. They can also pursue professional careers in the following sectors:

- Plant biotechnology firms, seed and plant companies, etc.
- Public bodies in control of seeds and variety certification.
- Research and teaching centres.

During the second year students work towards their Master thesis at universities and national and international research centres. Not only do they improve their language skills but they also become acquainted with different cultures and working environments.

Employability since the 2006 edition



Source: Master monitoring report conducted by UdL/ IAMZ-CIHEAM Studies Commission

The IAMZ experience

Testimonials from our students



Samir Kerfal

(Morocco) Academic year 2002/2003
Syngenta, Madrid, Spain

“Doing the Master at IAMZ has enabled me to develop professionally (networking) and personally. This work has allowed me to acquire deeper knowledge of the crop and develop and implement methodologies and new innovative tools to assess varieties. Finally, defending my Final Master Project was yet another opportunity to develop professional skills such as perseverance and orientation towards results”.



José Manuel Estévez

(Spain) Academic years 2010/2011, 2012/2013, 2014/2015
Granada la Palma, Spain

“From a professional and educational standpoint, the different editions of the Master have helped me update my knowledge on genetics and new gene technologies. The programme has also been very useful for my work, helping me to learn and understand how horticultural variety breeding companies work. I have been able to contact lecturers and researchers from other centres, share opinions and ideas that have helped me refocus some aspects of my work and even establish other approaches to the lines of development and innovation pursued in the cooperative I work for. The usefulness and advantages of attending this Master are many, from research grants, training for researchers, development of breeding programmes to the pride in learning and being continuously updated on everything related to plant breeding”.



Rosa Angélica Sánchez Díaz

(Peru) Academic year 2008/2010
Director General for Genetic Resources and Biotechnology
National Institute for Agricultural Innovation-INIA, Peru

“The Master has meant a large step forward in my professional career as well as in my personal life. At a professional level, it has enabled me to consolidate my knowledge and embark upon a scientific career that I thoroughly enjoy; it has been a very good Master as it offered us the possibility of learning together with a great group of staff and lecturers at IAMZ. On a personal level it has allowed me to establish links of friendship with colleagues from different countries and during my time in Zaragoza, IAMZ became home for international students, for which I am very grateful”.



Najla Ksouri

(Tunisia) Academic year 2014/2015
PhD student CSIC-EEAD, Zaragoza, Spain

“Attending this Plant Breeding Master programme is one of the best decisions I have ever made for my professional training and personal development. It was a very fulfilling experience which afforded me great knowledge and opened many doors for me. The scientific contents of the Master’s and the combination of lectures with team work and workshops were very useful to help me acquire new knowledge and provided me with many connections, work offers and references. The opportunity I had to conduct research during the second year was very useful to guide my first steps in my scientific career”.



Guest lecturers

More than 60 international experts sharing knowledge



Fred van Eeuwijk

(Wageningen UR, the Netherlands)

The phenomenon of genotype by environment interaction (GxE) occurs when genotypes react differently to changes in their growing environment. Modelling of GxE is important for understanding adaptedness, adaptability and stability of genotypes. Simultaneously, understanding GxE allows breeders to design efficient breeding programmes. In the course, students will learn about various classes of statistical models to tackle problems related to GxE.



Chris Carolin Schön

(Technische Universität München, Freising, Germany)

Prediction of complex traits from DNA profiles has revolutionized plant breeding. Getting to know the underlying data and statistical methods is exciting and at the end of the course quantitative genetics and genomics will be your friends.



David Marshall

(The James Hutton Institute, Dundee, UK)

With rapid advances in the generation of genome sequence for most crop plants and high throughput technologies for genotyping and phenotyping bioinformatics has grown to play a central role in many public and private sector breeding programmes. Bioinformatics bridges the gap between molecular technologies for data generation and the application of the resulting information in the decision making processes which underpin modern plant breeding



Ignacio Romagosa

(Agrotecnio, UdL, Lleida, Spain)

Experimental Design and Analysis is a fundamental tool for all scientific disciplines, but it is particularly relevant in Plant Breeding as it is a powerful instrument for studying quantitative traits.

Patrick Hayes

(Oregon State University, Corvallis, USA)

Barley is the world's oldest crop, an ideal genetic model system, and a crop of increasing economic importance in this time of climate change. Barley breeding and genetics are fascinating, engaging, and relevant: it is an honor to present them in the context of the IAMZ-CIHEAM Master in Plant Breeding course.



Pere Arús

(CRAG, IRTA-CSIC-UAB-UB, Barcelona, Spain)

One of the most decisive elements of the new breeding techniques is the incorporation of molecular markers as a selection tool. Markers enable the integration of a new dimension, linkage, to the breeding methodology and to the study of trait inheritance, whether it be simple or complex. To become acquainted with the fundamentals of linkage, how to measure it and how to use it when building genetic maps and how to apply such maps, which is the part of the course that I deliver, is essential for training modern breeders.



Paul Christou

(Agrotecnio, ICREA-UdL, Lleida, Spain)

The set of lectures on Applied Plant Biotechnology provides comprehensive insight on the current state of the art in the field. The lectures include the latest developments on the topic and cover biotic and abiotic stresses in crop plants, the mechanistic basis of transgene integration in cereal crops, the production of recombinant pharmaceuticals, synthetic biology in plants, and aspects of intellectual property, regulation and public perception of plant biotechnology. The course has been updated to include coverage of the latest developments of genome editing in plants.



José Esquinas

(UPM, Madrid, Spain)

Genetic resources are a treasure inherited from our ancestors and it is our duty to transmit them to future generations. They are essential to guarantee food security and face the challenges of climate change because without diversity there is no possible selection. The course analyses the importance of genetic resources, their growing erosion and the interdependence of genetic resources between countries. Furthermore, the socio-economic, political and ethical implications related to their conservation and sustainable use are analysed as well as the development of legal instruments negotiated and approved by all countries.





International Networking

More than 30 years building an international network of plant breeding professionals

The subjects taught on the Masters and the advanced courses for professionals are delivered by guest lecturers from **10 countries**, all leading specialists in their field of expertise.

IAMZ hires specialists in each subject to provide students with the most rigorous training and novel content. The **quality of the**

lecturers is a **guarantee of the high level** of teaching and updating of subjects.

In turn, the **diversity of provenance**, both in geographical and institutional terms, **contributes to the dynamics of the courses** and prepares students to face **different theories, methods and results.**

Lecturers participating in the 2016/2017 edition

FRANCE

J.M. AUDERGON, INRA, Montfavet
 J. BETRÁN, Syngenta, Toulouse
 M. MENZ, Syngenta, Toulouse
 L. MOREAU, INRA/Univ Paris XI/CNRS/INA PG, Gif-sur-Yvette

GERMANY

V. KORZUN, KWS LOCHOW GMBH, Einbeck
 W. LINK, Univ. Göttingen

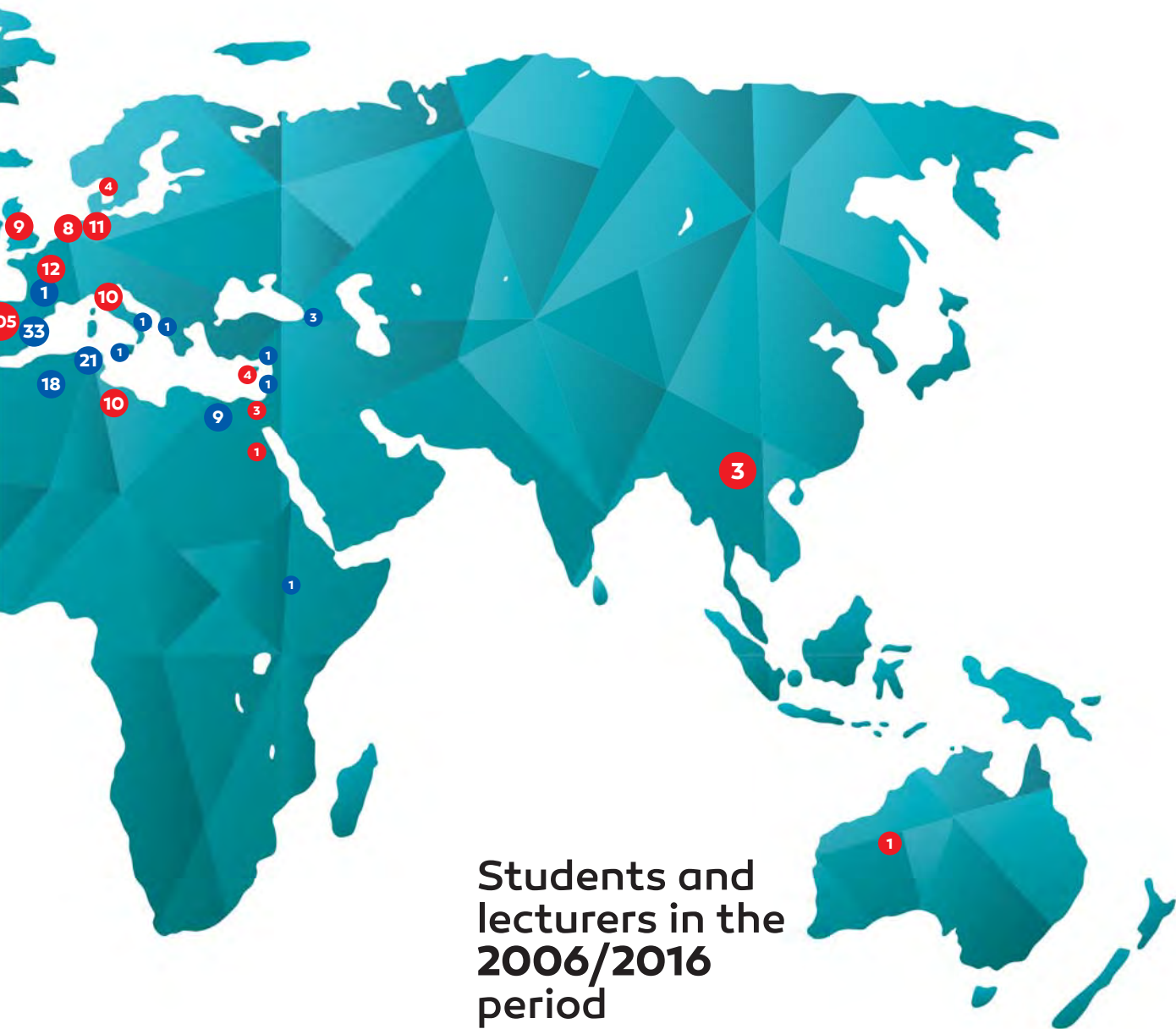
ITALY

P. ANNICHIARICO, CREA-FLC, Lodi
 S. SALVI, Univ. Bologna
 R. TUBEROSA, Univ. Bologna

SPAIN

R. ALBAJES, Agrotecnio, UdL, Lleida
 C. ALONSO-BLANCO, CNB-CSIC, Madrid
 J.M. ALONSO, CITA-GA, Zaragoza
 P. ANDREU, CSIC-EEAD, Zaragoza

J.L. ARAUS, Univ. Barcelona
 A. ARBELOA, CSIC-EEAD, Zaragoza
 M. ARNEADO, Ramiro Arnedo S.A., Almería
 P. ARÚS, CRAG, IRTA-CSIC-UAB-UB, Barcelona
 J. BARRIUSO, CITA-GA, Zaragoza
 R. BELKHODJA, CIHEAM-IAMZ, Zaragoza
 R. BLANCO, Agrotecnio, UdL, Lleida
 D. CAPARRÓS, CRAG, IRTA-CSIC-UAB-UB, Barcelona
 T. CAPELL, Agrotecnio, UdL, Lleida
 A. CASAS, CSIC-EEAD, Zaragoza
 P. CHRISTOU, Agrotecnio, ICREA-UdL, Lleida
 L. CISTUÉ, CSIC-EEAD, Zaragoza
 J. COSTA, Monsanto España S.A., Madrid
 M.A. COSTAR, CSIC-EEAD, Zaragoza
 J.I. CUBERO, Univ. Córdoba
 J. ELENA, Consultant-CPVO, Madrid
 F. ESCRIU, CITA-GA, Zaragoza
 J.T. ESQUINAS, Univ. Politécnic Madrid
 A. FARRÉ, Agrotecnio, UdL, Lleida
 A. FERNÁNDEZ, CITA-GA, Zaragoza



Students and lecturers in the 2006/2016 period

● Number of students per country

● Number of lecturers per country

J. GALCERAN, Agrotecnio, UdL, Lleida
 A. GARCÉS, CITA-GA, Zaragoza
 J. GARCÍA MAS, CRAG, IRTA-CSIC-UAB-UB, Barcelona
 Y. GOGORCENA, CSIC-EEAD, Zaragoza
 P. GRACIA, CSIC-EEAD, Zaragoza
 E. IGARTUA, CSIC-EEAD, Zaragoza
 N. JOUVE, Univ. Alcalá
 S. C. KEFAUVER, Univ. Barcelona
 J.J. LÓPEZ-MOYA, CRAG, IRTA-CSIC-UAB-UB, Barcelona
 J. MARÍN, CSIC-EEAD, Zaragoza
 J.M. MARTÍNEZ ZAPATER, ICVV, Logroño
 F. MORALES, CSIC-EEAD, Zaragoza
 M.A. MORENO, CSIC-EEAD, Zaragoza
 C. MUÑOZ, Univ. Córdoba
 R. NAVARRO, CITA-GA, Zaragoza
 S. NOGUÉS, Univ. Barcelona
 A. ORDÁS, CSIC-MBG, Pontevedra
 F. ORTEGO, CSIC-CIB, Madrid
 M. PÉREZ DE LA VEGA, Univ. León
 F. PLIEGO, Univ. Málaga

G. RODRIGO, LabFerrer, Cervera
 I. ROMAGOSA, Agrotecnio, UdL, Lleida
 C. ROYO, IRTA, Lleida
 E. SÁNCHEZ-MONGE, Limagrain Ibérica S.A., Elorz
 R. SAVIN, Agrotecnio, UdL, Lleida
 G. SLAFER, Agrotecnio, ICREA-UdL, Lleida
 J.M. VILLAÚ, Pioneer Hi-Bred Spain, S.L., Sevilla
 J. VOLTAS, Agrotecnio, UdL, Lleida

THE NETHERLANDS

Y. BAI, Wageningen UR
 W.J. DE KOGEL, PRI, Wageningen UR
 M. MALOSETTI, Wageningen UR
 F. VAN EEUWIJK, Wageningen UR

TUNISIA

M. HARRABI, INAT, Tunis

UNITED KINGDOM

J. BRADSHAW, The James Hutton Institute, Dundee

K. GARDNER, NIAB, Cambridge
 I. MACKAY, NIAB, Cambridge
 D. MARSHALL, The James Hutton Institute, Dundee
 B. SANTOS, NIAB, Cambridge



CIHEAM

INTERNATIONAL MASTER IN PLANT BREEDING

UNIVERSITÀ DI BOLOGNA

Institutional collaboration

In the second year students work on their Final Master Project (Master Thesis) at accredited institutions (universities, research centres or firms) generally in Spain or in the student's country of origin, under the supervision of a distinguished scientist. Collaboration agreements established with numerous prestigious institutions in different fields of specialization for working towards the thesis is a key

factor of the programme's success. Students are trained in an environment of team research that provides excellent resources and hands-on advice. The experience acquired during this period is not limited to knowledge and practical skills, but also offers a complete introduction to the professional environment.





Access, admission and scholarships



Dates and duration

The first part of the Master will be held from 24 September 2018 to 12 June 2019.

The second part will begin in September 2019 with a duration of 10 months.



Selection

The IAMZ-CIHEAM/UdL Selection Committee will consider applications based on CV and supporting documents.



Admission and deadlines

Complete the application form:
<http://www.admission.ciheam.org>

The dates for the presentation of applications are the following:

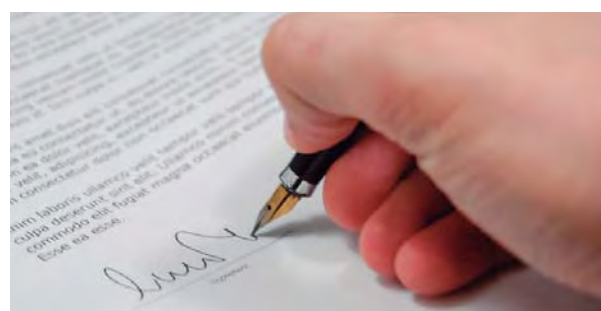
Non-Spanish candidates:

From 1 February to 4 May 2018.

Spanish or Spanish-speaking candidates*:

From 1 February to 15 September 2018

(* Non-EU candidates should consult visa deadlines.



Registration and scholarships

For candidates from any nationality, registration fees are 2950* euro per academic year.

Candidates from CIHEAM member countries may apply for a scholarship covering registration and full-board accommodation in the Hall of Residence on the Campus of Aula Dei.

Candidates from other countries who require financial support should apply directly to other national or international institutions.

*This price is indicative and may vary when official prices for credits of Master postgraduate programmes are determined at the UdL.

Spain: Leading country in the agro-food sector

Spain is the 5th largest economy in the European Union and the 13th in the world in nominal terms. Spain is the 3rd most popular tourist destination in the world.



Spain is the **8th largest exporter of agro-food products** in the world.



Spain is the **largest surface area of vineyards** in the world.



Spain is the **largest producer of olive oil**.



Spain is the **2nd largest pork producer in the EU and 4th largest** in the world.



60% of the **irrigated surface area** of Europe is in Spain.



Spain has the **largest organic farming area** in the EU.



Spain is **leader in aquaculture production** in the EU.



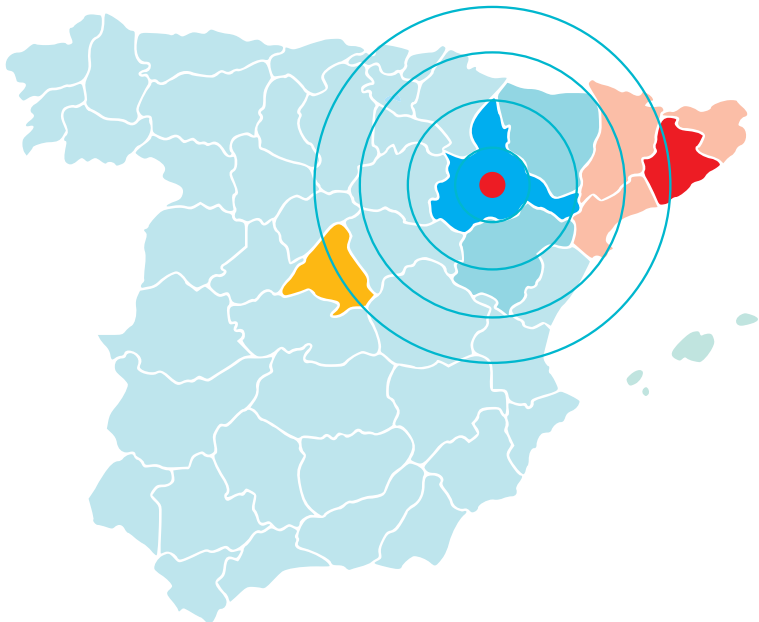
Spain is one of the **top commercial fresh fruit and vegetable operators**.



The **largest area of protected crops** in Europe is in **Almeria**.



Zaragoza, 2000 years of history in a Mediterranean country: Spain



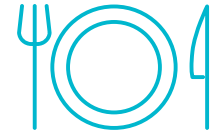
- Zaragoza
- Madrid
- Barcelona



Zaragoza has the fourth largest population in Spain after Madrid, Barcelona and Valencia with **700,000 inhabitants**. It is strategically located between **Madrid, Barcelona and Bilbao** and is a **2-3 hour drive from the Pyrenees**, bordering with neighbouring **France**. Zaragoza's two-thousand years of history offer visitors unique sightseeing opportunities and a wide gastronomic and cultural offer.

Spanish is the **second most spoken language** in the world after Mandarin Chinese, **with 416 million native Spanish speakers, and the second in international communication after English**.

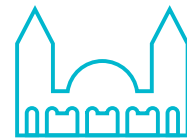
The international airport offers regular flights to Paris, London, Brussels and Milan. The high-speed train (AVE) connects Zaragoza with major cities in Spain and the French TGV network.



Zaragoza has a wide cultural and **gastronomic offer**, including the famous tapas bars in **El Tubo**.



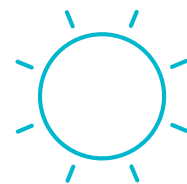
Besides the **sports facilities, parks and recreation areas**, Zaragoza has a network of cycle paths as well as a bike hire service.



The **Basilica del Pilar, La Seo Cathedral** and the **Mozarabic Palace of La Aljafería** are just some of the emblematic monuments not to be missed.



The **Aragonese people** are renowned for their **warm hospitality**.



Spain has the **most days of sunshine** in Europe.



Universitat de Lleida
 Pl. de Víctor Siurana, 1, 25003 Lleida (Spain)
Phone: +34 973 003 588 - 902 507 205
email: pdi@seu.udl.cat
Web: www.udl.cat



Mediterranean Agronomic Institute of Zaragoza
 Avenida de Montañana 1005 · 50059 Zaragoza (Spain)
Phone: +34 976 716000 – **Fax:** +34 976 716001
email: iamz@iamz.ciheam.org
Web: www.iamz.ciheam.org

