**PhD PROGRAM IN “PLANT AND ANIMAL SCIENCES”**

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<tr>
<th>Coordinator</th>
<th>Prof. Roberta BERNINI</th>
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<tr>
<td>Department</td>
<td>Department of Agriculture and Forest Sciences (DAFNE)</td>
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<tr>
<td>Partner institutions</td>
<td>None</td>
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| Program duration     | 3 years: 1\(^{st}\) November 2021 - 31\(^{st}\) October 2024  
                       Thesis Defence: within July 2025 |

**Program objectives**

The PhD program aims to train researchers of high scientific qualification able of addressing the various aspects of research in the agricultural sciences, from planning a research project to its implementation, from the interpretation of data to the presentation of results, the writing of articles in scientific journals and, where possible, patents.

Over the course of the three years, the PhD students develop research topics and carry out training activities with an innovative and interdisciplinary approach thanks to the different scientific skills of the members of the Academic Board in the fields of agricultural, biological and chemical sciences and the possibility of carrying out internships and periods of research and study abroad at Universities and research institutes of high scientific qualification.

Research topics are agronomy, animal husbandry, biotechnologies, plant breeding, plant protection, soil science, applications of nanomaterials in agriculture, natural organic compounds, valorisation of agro-industrial wastes, project and development of methodologies for the synthesis of bioactive molecules, production of recombinant products of high added value from plant materials, biosensors for the environmental monitoring and the production chain, study of the role of the environmental factors on the agricultural productions, landscape planning, aspects of technological and nutritional quality of products, food and production safety, models for product, process and organizational innovation of the agro-food system.

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<tr>
<th>Number of positions</th>
<th>Total positions</th>
<th>14</th>
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<tr>
<td></td>
<td>with fellowship</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>without fellowship</td>
<td>2</td>
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**Positions with fellowship**

1. Position with fellowship co-funded by the University of Tuscia, the research agreement with the Lazio Region (Agriculture Department) and DAFNE research funds.  
   Reference: Prof. Giorgio Mariano BALESTRA.  
   Research topic: “Containment and diagnosis of the Kiwifruit Early Decline Syndrome (KEDS) in Lazio Region”.

2. Position with fellowship co-funded by the University of Tuscia and the research agreement OSMOTINA (DAFNE).  
   Referente: Prof. Valerio CRISTOFORI.  
   Research topic: “Enhancement of the temperate fruit germplasm using in vitro technologies and subsequent detection of bioactive substances in different plant organs”.

3. Position with fellowship co-funded by the University of Tuscia and the research project POR FESR LAZIO 2014-2020 (DAFNE).  
   Reference: Prof. Katia LIBURDI.
Research topic: “Development of sustainable enzymatic methodologies applied to food processes”.

(4) Position with fellowship co-funded by the University of Tuscia and the research project H2020 InnoVar (DAFNE).
Reference: Prof. Roberto MANCINELLI.
Research topic: “Next generation variety testing for improved cropping on European farmland; Carbon flux analysis in crop systems with different soil tillage and fertilization”.

(5) Position with fellowship co-funded by the University of Tuscia and the research project H2020 HARNESSTOM (DAFNE).
Reference: Prof. Andrea MAZZUCATO.
Research topic: “Conventional and biotechnological strategies for fresh market tomato breeding; selection of novel varieties diversified for fruit color and composition”.

(6) Position with fellowship co-funded by the University of Tuscia and the research project LIOO MIUR-FISR.
Reference: Prof. Rosario MULEO
Research topic: “Molecular genetic study of fruit development and accumulation of metabolic compounds in olive oil cultivar drupes from both table olives and oil for the definition of predictive models and identity traceability of cultivars”.

(7) Position with fellowship co-funded by the University of Tuscia, the research agreement with the Lazio Region (Agriculture Department) and DAFNE research funds.
Reference: Prof. Stefano SPERANZA.
Research topic: “Biological control of new alien insects recently introduced in Italy; the case study Toumeyella parvicornis (Cockerell)”.

(8) Position with fellowship co-funded by the University of Tuscia and the SIAL Group Srl Company.
Reference: Prof. Stefania MASCI, Dr. Eugenio BENVENUTO.
Research topic: “Use of plant cells as building blocks with high-added value of new generation foods derived from three-dimensional printing (3DP)”.

(9) Position with fellowship co-funded by the Departments of Excellence project SAFE-Med (DAFNE) and research project CIRCE, PSR Sicily Region 2014-2020 (DAFNE).
Reference: Prof. Stefania MASCI.
Research project: “Valorization of the local cereal varieties supply chain through the definition of the technological and nutritional profiles, and genetic certification of Sicilian wheats”.

(10) Position with fellowship co-funded by the Departments of Excellence project SAFE-Med (DAFNE), the research agreement with the Lazio Region (Agriculture Department) and DAFNE research funds.
Reference: Prof. Maria Nicolina RIPA.
Research topic: “Analysis of the Regional Agricultural Plan, implications for the agricultural sector and interactions with territorial and infrastructural planning”.

(11) Position with fellowship co-funded by the Departments of Excellence project SAFE-Med (DAFNE), the research agreement with the Lazio Region (Agriculture Department) and DAFNE
research funds.  
Reference: Prof. Andrea VITALI.  
Research topic: “Studies and analysis of wildlife presence, including the implications with agricultural activities and development of damage-preventing strategies and good practices”.  
(12) Position with fellowship co-funded by ENEA and MP3 S.r.l. Company.  
Reference: Prof. Roberta BERNINI, Dr. Eugenio BENVENUTO.  
Research topic: “Evaluation of the microbiological shelf-life of fruit and vegetable products, ready to use, stored in innovative biodegradable, active and compostable packaging”.

| Positions without fellowships | Position without fellowship to carry out research activity at DAFNE and CNR-IBBC (Rome).  
Reference: Prof. Roberta BERNINI/Dr. Felice TIRONE.  
Research topic: “In vivo studies using mouse models of the biological and therapeutic effects of polyphenols present in extra virgin olive oil, oil by-products and other bioactive molecules”.  
(2) Without fellowship to carry out research activity at DAFNE.  
Reference: Prof. Maria Nicolina RIPA.  
Research topic: “Innovative technologies tools and approaches for territorial planning”. |

Admission requirements

Admission is open to candidates of any nationality and age who have one of the following requirements by the deadline of the call for application:  
▪ Italian degree “Laurea Vecchio Ordinamento”  
▪ Italian degree “Laurea Specialistica” or “Magistrale”  
▪ International academic qualification (degree) awarded in a foreign University or in the context of inter-university cooperation and mobility agreements.  
Admission is also open to students who will obtain their degree within 31 October 2021.

Evaluation of candidates (Maximum score: 80/80)

The candidates are evaluated by qualifications and exam (interview).  
The maximum score assigned is 80/80.

Evaluation of the qualifications (Maximum score: 15/80)

On the basis of the University Regulations for Ph.D. programs (Art.10), the following qualifications are evaluated:  
▪ Degree thesis accompanied by an abstract in English;  
▪ University career (passed exams and graduation marks);  
▪ Publications;  
▪ Participation in research projects;  
▪ Professional experience and other qualifications held by the candidate in the *curriculum vitae et studiorum*, including any letters of introduction from university professors;  
▪ Research project proposed.  
The maximum score is 15/80.  
Before the interview, the scores assigned to the candidates will be published on the University website address: www.unitus.it >Didattica >Offerta post lauream>Dottorati di Ricerca.

Evaluation of the oral interview (Maximum score:)

The interview is aimed at ascertaining the preparation and aptitudes of candidates for scientific research and includes the assessment of knowledge of the English language.
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<th>65/80</th>
<th>The minimum score is 40/65 and the maximum is 65/80.</th>
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<td><strong>Topics of the interview</strong></td>
<td>The main topic of the interview is the research project proposed by each candidate, attached to the application for admission to the call for application. This project, described at most in 5 pages, can be written in Italian or English; it must be inherent to the objectives of the Ph.D program and may not be related to the research topics covered by the available positions; in any case, it does not constitute a constraint on the subsequent choice of the research activity to be developed in the three-year period. The interview includes the assessment of knowledge of the English language by reading and translating some paragraphs of a scientific text. After the interview, the scores will be published on the University website address: <a href="http://www.unitus.it">www.unitus.it</a> &gt;Didattica &gt;Offerta post lauream &gt;Dottorati di Ricerca.</td>
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<tr>
<td><strong>Timetable and interview location</strong></td>
<td>The interview will be conducted online for both Italian and foreign candidates. The calendar of the interview will be published on the University website address: <a href="http://www.unitus.it">www.unitus.it</a> &gt;Didattica &gt;Offerta post lauream &gt;Dottorati di Ricerca after the deadline of the call for application.</td>
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<td><strong>Contacts for information</strong></td>
<td>Prof. Roberta BERNINI E-mail: <a href="mailto:dottorato.spva@unitus.it">dottorato.spva@unitus.it</a>; <a href="mailto:roberta.bernini@unitus.it">roberta.bernini@unitus.it</a></td>
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