

PhD PROGRAMME IN "PLANT AND ANIMAL SCIENCES"			
Coordinator	Prof. Rosario Muleo		
Department	Department of Agriculture and Forest Sciences (DAFNE)		
Program duration	Three years: 1 st November 2026 - 31 st October 2028 Thesis defence: within July 2030		
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 agrifood system.		
Number of positions	Total positions	15	whose
	(A) Positions with scholarship	13	
	(B) Positions without scholarship	2	
Period abroad	PhD students are required to spend a period of study and research abroad at international universities, companies, or research institutions. The total duration of these stays abroad for each PhD student must be at least 6 months, which don't have to be continuous. PhD students, with and without scholarship - with the exception of the positions mentioned in Article 9, paragraph 6 of Ministerial Decree 226/2021 - are entitled to an additional budget of at least 50% of the scholarship amount. This is for periods abroad that don't exceed the duration above mentioned, subject to any further available funds. In any case, the scholarship increase is only granted for continuous periods of no less than thirty days.		

(B) Positions with fellowship cofunded by the University of Tuscia, external institutions and Department

N.13 positions with fellowship for the following thematic of research:

(A1) "Genetic improvement of durum wheat resistance to *Fusarium* spp. under climate change through chromosome engineering and the exploitation of genetic variability from wild relatives"

Supervisor: Prof.ssa Ljiljana Kuzmanovic

Funding: 50% Contratto di ricerca USASK-CDC-Ceoloni (U.P.B. DAFNE.CTUSASK-CDC) - 50% FFO Ateneo

(A2) "Development of innovative and sustainable strategies for the containment and management of olive knot (*Pseudomonas savastanoi* pv. *savastanoi*) through the integrated use of biocontrol agents, low environmental impact substances, and 'soft chemistry' approaches, in synergy with biostimulants aimed at improving plant fitness and resilience"

Supervisor: Prof. Giorgio Mariano Balestra

Funding: 60% DIACHEM S.p.A. (Albano Sant'Alessandro, BG) - 40% FFO di Ateneo

(A3) "Use of Compost as a Biostimulant in Nursery Production for Enhancing Plant Growth, Quality, and Resilience through Hormetic Effects".

Supervisors: Prof.ssa Mariateresa Cardarelli e Dott.ssa Silvia Turco

Funding: 50% Agenzia nazionale per l'attrazione degli investimenti e lo sviluppo d'impresa (INVITALIA) - 50% FFO di Ateneo

(A4) "Study on breeding, feeding and nutrition, effects of exposition in insects of economic interest and quality of the related products"

Supervisors: Prof. Pierpaolo Danieli e Prof. Mario Contarini

Funding: 50% a valere sulle Convenzioni DAFNE.CVAPISDA4, DAFNE.CVAPISDA5, DAFNE.CVAPISDA6, DAFNE.CVCATTOLICA, DAFNE.CVMAMMAGIALLA e DAFNE.CVMIIHELLO25 (Responsabile Prof. P. Danieli) - 50% FFO di Ateneo

(A5) "Use of innovative technologies for wildlife monitoring and the assessment of ecosystem resilience."

Supervisor: Prof. Andrea Vitali e Prof. Nicola Lacetera

Co-supervisor: Prof. Riccardo Primi

Funding: 50% Progetti DAFNE.PGSHEEPMEAT e DAFNE.CVZOOTECPRI - 50% FFO di Ateneo

(A6) "Editing of key genes involved in brassinosteroid modulation in durum wheat"

Supervisor: Prof.ssa Stefania Masci

	<i>Funding:</i> 50% MASAF Progetto TEA4IT-CER CUP C53C25000770006 - 50% FFO di Ateneo (A7) "Use of molecular tools and nanotechnologies to induce adventitious rooting and control pathogens in olive trees" <i>Supervisor:</i> Prof. Rosario Muleo <i>Funding:</i> 50% MASAF ISMEA CUP C53C25000770006 - 50% FFO di Ateneo (A8) "Development and optimization of in vitro culture systems for fruit and ornamental tree species, with particular emphasis on propagation, regeneration, and the acquisition of morphogenetic competence" <i>Supervisor:</i> Prof. Cristian Silvestri <i>Funding:</i> 50% DAFNE - Convenzione CREA Centro di ricerca Coltivazioni di olive, frutta e agrumi - 50% FFO di Ateneo (A9) "Circular valorization of waste from hazelnut and almond supply chains for the formulation and application of innovative agrochemicals for the sustainable control of the main plant diseases causing the most damage to the crop productions" <i>Supervisor:</i> Prof. Giorgio Mariano Balestra <i>Funding:</i> 100% Progetto di ricerca MASAF "FRUTTA IN GUSCIO SOSTENIBILE E CERTIFICATA" CUP B85B21007120001 (A10) "Valorization of pruning waste from the red kiwi supply chain to develop innovative agrochemicals for the control of the main plant diseases of the supply chain" <i>Supervisor:</i> Prof. Giorgio Mariano Balestra <i>Funding:</i> 100% Progetto di ricerca MASAF "VALORIZZAZIONE QUANTIQUALITATIVA DEL KIWI ROSSO IN UN OTTICA DI SOSTENIBILITA' AMBIENTALE E TRANSIZIONE ECOLOGICA" CUP B85B21007120001 (A11) "Assessment of Nitrate Vulnerability using Modeling Analysis and Field Surveys in the Lazio Region" <i>Supervisor:</i> Prof.ssa Maria Nicolina Ripa <i>Funding:</i> 50% ARSIAL Accordo di collaborazione Repertorio ARSIAL n. 72 del 01/08/2024. Prosecuzione delle attività inerenti alla redazione del Piano Agricolo Regionale (PAR) UPB DAFNE.CTARSIALPAR24 - 50% FFO di Ateneo (A12) "Integrated in vitro and in vivo approaches to identify species-specific immune biomarkers and vaccine targets in cattle and water buffalo" <i>Supervisor:</i> Prof. Loredana Basiricò <i>Funding:</i> 50% Convenzione DAFNE CREA Centro di ricerca di Zootecnia e Acquacoltura di Monterotondo RM. - 50% Fondi di dipartimento Progetto Dipartimento di Eccellenza Di.Ve.Rso.
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	(A13) “Characterization of molecular mechanisms contributing to improved adaptation to (a)biotic stresses in wheat” <i>Supervisor:</i> Prof. Daniel Valentin Savatin <i>Funding:</i> 50% Progetti Myanmar-Col (MAECI) e PGE+FEERTI&GROW (EU-ERASMUS) - 50% FFO di Ateneo
(B) Positions without scholarship	No. 2 positions without fellowship aimed at carrying out the following research topics: (B1) “Analysis of the Agricultural Production System of the Lazio Region for the Preparation of the Regional Agricultural Plan” <i>Supervisor:</i> Prof.ssa Maria Nicolina Ripa <i>Funding:</i> ARSIAL Accordo di collaborazione Repertorio ARSIAL n. 72 del 01/08/2024. Prosecuzione delle attività inerenti la redazione del Piano Agricolo Regionale (PAR) UPB DAFNE.CTARSIALPAR24 (B2) “Development of durum wheat varieties with improved nutritional, agronomic, and technological traits”, Position reserved for employees of CGS Sementi S.p.A., Acquasparta (TR)” <i>Supervisor:</i> Prof. Francesco Sestili <i>Funding:</i> Convenzione CGS Sementi S.p.A – Università degli studi della Tuscia
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 will obtain their degree within 31 October 2026.
Evaluation of candidates (Max score: 80/80)	The candidates are evaluated by qualifications and exam (interview). The maximum score given to the overall evaluation of the candidates is 80/80.
Evaluation of the qualifications (Maximum score: 15/80)	According to the University Regulations on Doctoral Research (Art. 14), the evaluable qualifications are as follows: - Research project attached to the application for admission to the competition - Dissertation accompanied by an abstract in English language - Undergraduate career (profit examinations taken and graduation grade) - Scientific publications - Participation in research projects



	Professional experience and other qualifications held by the candidate present in the <i>curriculum vitae et studiorum</i>, including any letters of recommendation from university professors The maximum score given to the evaluation of qualifications is 15/80. Before the interview, the scores awarded to the candidates will be posted on the PhD web page.
Evaluation of the interview (Minimum score: 40/80; maximum score: 65/80)	The interview is designed to ascertain the candidates' preparation and aptitude for scientific research and includes an assessment of English language proficiency. The minimum score given to the evaluation of the interview is 40/80; the maximum is 65/80.
Topics of the interview	The interview is mainly concerned with the discussion of the research project submitted by each candidate, attached to the application for admission to the competition. The project, described in a maximum of N.5 pages, can be written in Italian or English; it must be inherent to the educational objectives of the PhD Program. English proficiency will be ascertained by reading and translating a few paragraphs of a scientific text. After the interview, the results will be published on the PhD web page.
Location and dates of the interview	The examination tests will be held by September 11, 2026. The complete examinations schedule will be published on the PhD web page by the deadline of the application call.
Contacts for information	Prof. Rosario Muleo E-mail: muleo@unitus.it