



Annex 7

Ph.D. in Agrobiodiversity

<http://www.santannapisa.it/en/formazione/phd-agrobiodiversity>

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| Coordinator | Prof. Mario Enrico Pè marienrico.pe@santannapisa.it | |
| Language | English | |
| Duration | 4 years | |
| Curricula | A | Plant genetic resources |
| | B | Functional biodiversity in agroecosystems |
| Reserch Areas | - Genetic variation in single genes and entire genomes of agricultural and forestry plants and their wild relatives; | |
| | - Mechanisms that control the variability in genes and/or groups of genes, as those involved in resistance to pathogens and/or pests and tolerance to environmental stresses; | |
| | - Role of functional biodiversity, including interactions between pests/pathogens/weeds and domesticated/volunteer/wild plants, to support agro ecosystem resistance, resilience and stability; | |
| | - Role of functional biodiversity at genes/species/habitat levels to support agro ecosystem services, (e.g., crop yield, produce quality, crop protection, soil quality) and multifunctional land use. | |
| | - Data-driven approaches to support breeding decisions via genomics, climate science, and participatory research | |
| Positions | n. 5 positions with scholarship funded by Scuola Sant'Anna n. 1 position with scholarship funded under Ministerial Decree n. 351/2022 – Ph.D. National Recovery and Resilience Plan On the topic: Agroecological approaches to agricultural systems to contribute to ecological transition | |
| Scholarship | Euro 16,243.00 gross beneficiary paid in deferred monthly instalments. The amount is inclusive of social security charges. In addition, students can take advantage of: <ul style="list-style-type: none"> • 26 free monthly meals at the school canteen excluding academic holiday periods, • an increase of € 4.060 gross beneficiary for the period of study and research abroad, subject to the authorization of the Faculty Board, • a budget of € 4.873 to be allocated to cover expenses related to research activity, | |



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| | <ul style="list-style-type: none"> • an additional contribution of € 2,200/year as reimbursement for accommodation costs reserved for off-site students to be paid based on the Equivalent Economic Status Index (ISEE). |
| <p>Application deadline</p> | <p>Candidates are requested to apply online by June 28th 2022 h. 12.00 p.m. (Noon - Italian Time)</p> |
| <p>Documents required to be attached to the online application under penalty of exclusion</p> | <p>Applicants should attach to their application:</p> <ol style="list-style-type: none"> copy of a valid identity document; <i>Curriculum Vitae et Studiorum</i>; Detailed list of classes/exams successfully attended/passed (written in one of the following languages: English, Italian, French, German, Spanish or Portuguese). This list should contain information regarding credits (or equivalent units) and marks for each course taken and should also be provided by candidates who have not yet obtained their MSc degree by the deadline. a copy of the M.Sc. thesis; candidates who have not yet obtained the qualification should attach a copy of the thesis as a final draft or an abstract of the same; only for candidates who obtained their qualification outside Italy: copy of the M.Sc. Degree Certificate or equivalent qualification translated into Italian or English. <p>Students who have not yet defended their MSc thesis by the application deadline should submit the documents above except the Master degree and the final score. If selected for a scholarship, they are required to submit this information as soon as possible and, in any case, no later than September 30th 2022. In case of failure to deliver these documents, the scholarship will be awarded to the next eligible candidate in the ranking list. For degrees obtained in Italy, please submit a signed self-declaration (<i>autocertificazione</i>);</p> <ol style="list-style-type: none"> a Research Project, about 3,500 words (in English). The Research Project should include: <ul style="list-style-type: none"> - title; - scientific background and the relevant bibliography; - aim and objectives of the research; - experimental methods which will or could be used. <p>The submitted research project is meant for evaluation purposes and should preferably address one of the following subjects:</p> <ul style="list-style-type: none"> • Improved weed/pest management in agroecosystems through increased diversity at genetic, species and/or habitat level. • Cover crops and intercropping as functional biodiversity components in arable and vegetable agroecosystems. • Optimisation of climate resilience and other agroecosystem services in diversified arable, vegetable, mixed and agroforestry systems. • (Agro)ecosystem services provided by genetic, species and habitat diversity and their management in agroecosystems. • Exploring the role of functional biodiversity in agroecosystems through modelling. • Plant biodiversity and its role in flooding/submergence tolerance. • Crop tolerance to submergence: genetic, molecular and physiological basis of differences among species. • Plant and crop fortification with iodine: identification of the molecular/physiological basis for differences between plant species. • Physiology of the synthesis of anthocyanins in plants: identification of the molecular/physiological basis for differences between plant species. • Environmental, metabolic, and hormonal regulation of plant growth. |



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| | <ul style="list-style-type: none"> • Analysis and valorisation of genetic resources in crops, including also their wild relatives, and forest tree species. • Genetic mapping of complex traits in crops and their wild relatives. • Mechanisms of gene regulation, including those mediated by non-coding RNAs in crop and/or model species. • Addressing socio-economic issues concerning maintenance and exploitation of plant genetic resources in Emerging Countries in a climate change scenario. • Postharvest stress physiology in perishable horticultural crops. • Genotype x Environment interactions in the regulation of fruit ripening and composition. • Soil fertility and plant-soil-water interactions. • Plant-microbe interactions to improve environmental stress tolerance. • Microbial biostimulants for sustainable agriculture • Climatic change mitigation through agricultural management practices improving soil carbon storage. |
| <p>Other documents, if any</p> | <ul style="list-style-type: none"> • Publications (e.g. articles on scientific journals, conference proceedings, etc); • Other Master and/or specialization degrees in subjects consistent with the research topics of this PhD programme; • Teaching experience at university level • Research and working experience • Internships • Language certificates (e.g. the Cambridge First Certificate in English (FCE), or TOEFL (at least 220 points computer-based or 500 points paper-based). The level of equivalence of English language certificates is assessed by the Selection Committee. • Mobility experience abroad (e.g. Erasmus programs or similar) • Any other document certifying the applicant's excellence (prizes, fellowships and grants) |
| <p>Selection of candidates</p> | <p>The selection will be based on the assessment of the submitted documentation. Scores will be expressed in points out of a maximum of 100. The Examination Committee will assign a score based on the CV and the submitted publications, as well as the Research Project (in terms of quality and relevance for the Ph.D. programme). Applicants should obtain at least 70/100 points in order to be included in the ranking list of eligible candidates.</p> |
| <p>Selection schedule</p> | <p>The ranking list will be published on the web site https://www.santannapisa.it/en/admissions/phd-agrobiodiversity</p> |
| <p>Information</p> | <p>info-phdlifesciences@santannapisa.it tel. +39 050882604</p> |