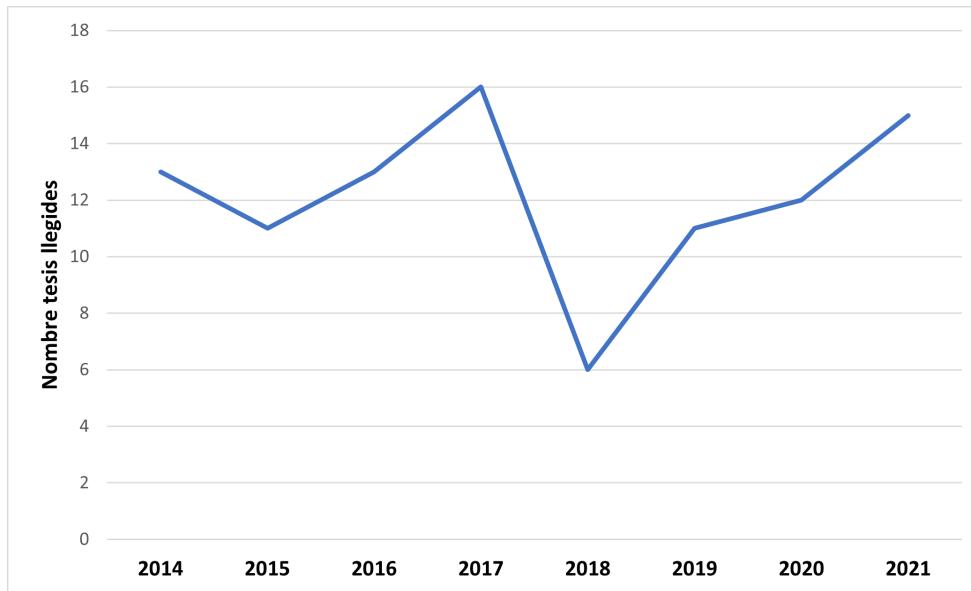




Tesis

El compromís del Departament amb la recerca es posa de manifest, també, en la formació del personal investigador mitjançant la direcció de tesis doctorals. Des de 1992 s'han dirigit o presentat al departament més d'un centenar de tesis.



Les tesis llegides en els últims anys (que es poden consultar a la web [tesisenred](https://www.tesisenred.net/handle/10803/284) [<https://www.tesisenred.net/handle/10803/284>]) han estat les següents:

Any 2014

- **Mechanistic investigations of carotenoid and ketocarotenoid biosynthesis in rice.**
- **Movement of predators in arable crop systems.**
- **Control biológico en cultivos hortícolas: Efecto de los alimentos suplementarios en depredadores y parásitoides.**
- **Enhancing biological control in apple orchards.**
- **Las atmósferas modificadas integradas con otras tecnologías como alternativas sostenibles para el control de plagas en productos alimentarios almacenados.**
- **Safety assessment and efficacy investigations of genetically engineered corn accumulating high levels of carotenoids.**
- **Molecular identification and feeding ecology of arthropod generalist predators present in Mediterranean lettuce crops.**
- **Contribución al conocimiento de la expresión fenotípica de variantes alélicas para los genes mayores Ppd-A1 y Ppd-B1 en trigo duro.**
- **Response of yield and physiological attributes to nitrogen availability and heat in maize.**
- **Rice endosperm as a production platform for third-generation HIV microbicides.**
- **The generation of biofortified and weevil-resistant cereal plants through genetic engineering.**
- **Respuesta de cultivares de patata a la salinidad y potencial efecto protector del metil jasmonato frente al estrés salino.**

Any 2015



- Caracterización de *Phytophthora infestans* y mejora genética para la resistencia en patata.
- Ecology, metereology and simulation of large wildland fires.
- Process of colonization of the host plant by *Sesamia nonagrioides* gravid females.
- Tree-species diversification in Sub-Mediterranean pine forests: drivers, consequences and management options .
- Desarrollo y transferibilidad de los microsatélites en *Prunus* y su aplicación en estudios de variabilidad.
- Efectos de los sistemas de labranza de los cereales sobre los organismos perjudiciales y beneficos del suelo en el sudeste bonaerense (Argentina).
- Bread and durum wheat performance under a wide range of environmental conditions.
- Mineral nitrogen fertilization and stover management effects on maize production under Irrigated Mediterranean conditions. Simulation of yields.
- Grain yield determinants in a traditional and a modern wheat cultivar under a wide range of conditions in a Mediterranean region. Source-sink relationships, components, resource capture and use efficiencies.
- Spatio-temporal modelling of stable isotopes in tree Mediterranean species (*Quercus ilex* L. and *Pinus halepensis* Mill.): a climatic and ecophysiological view.
- Physiological and molecular responses to salicylic acid in potato virus X-infected tomato and maize dwarf mosaic virus-infected maize.

Any 2016

- Unravelling herbicide resistance in corn poppy (*Papaver rhoeas* L.) to improve integrated weed management strategies.
- Fallow lands as a tool for farmland biodiversity conservation.
- Adapting the Decision Support System CPOWeeds to optimize weed control in northern Spanish conditions.
- A trait-based approach to disentangle the success of alien weeds in irrigated crops.
- Caracterización mecánica del abeto (*Abies alba* Mill.) procedente de la cordillera pirenaica.
- Selección in vitro para resistencia a boro y deoxinivalenol en cebada: marcadores asociados.
- Towards vitamin biofortification in maize through multigene engineering.
- Epidemiología dels fitoplasmes dels fruiters de fruita dolça de la vinya a la Península Ibèrica: identitat genètica, hostes, vectors, cicles i control.
- Mechanisms controlling the selective iron and zinc biofortification of rice.
- Evaluación agroambiental de la fertilización y nutrición fosfatada en el cultivo de papa (*Solanum tuberosum* L.).
- Towards engineering of photosynthesis in rice.
- Physiological determinants of fertile florets in wheat: variation between elite cultivars and effects of Ppd and Eps genes.

Any 2017

- Assessing the effect of global change on plant functional structure, greenhouse gases, and soil functions in grasslands.
- Plant diversity and ecosystem services in agricultural landscapes along different spatial scales.
- Changes in soil biodiversity and activity along management and climatic gradients.
- Spatio-temporal analysis of human-caused fire occurrence patterns in Spain.
- High carotenoid corn: agronomic evaluation and interactions with insect pests.
- Improvement of the nitrogen fertilization in irrigated Mediterranean environments.



- Social capital in rural areas and governance of economic instruments for Non-Wood Forest Products: the case of mushrooms in Catalonia.
- Dissecting genetic changes on wheat adaptation, yield formation and grain quality in Mediterranean environments.
- A trophic chain as indicator of agricultural practice change in maize.
- Water use patterns and physiological interactions in Submediterranean mixed forests: methodological challenges and implications for ecohydrology.
- Epidemiología de la Podredumbre Parda en fruta de hueso durante los principales procesos de postcosecha en centrales frutícolas.
- Effects of organic and mineral nitrogen fertilization of maize in irrigated Mediterranean environments.
- Evaluación de alternativas para el análisis estadístico y de aspectos del diseño en ensayos de larga duración para estudios agronómicos.
- Detoxification and sublethal effects of neurotoxic insecticides in tortricid moths.
- Caracterización de la respuesta a sequía e identificación de genes asociados al uso eficiente del agua (UEA) en portainjertos *Prunus* spp.
- Diversidad y extensión de los mecanismos de resistencia a insecticidas en poblaciones españolas de carpocapsa (*Cydia pomonella* (L.) Lepidoptera Tortricidae) y estudio de sus posibilidades de manejo.

Any 2018

- Desarrollo de métodos de predicción de la incidencia de 'bitter pit' en plantaciones de manzanas 'Golden Smoothee' (*Malus domestica*, L. Borkh.).
- Wheat developmental processes as affected by *Ppd* and *Eps* alleles and genetic variation within elite cultivars.
- Forest management and abiotic parameters effect on soil fungal communities inhabiting Mediterranean forest ecosystems.
- Species distribution models for birds: How useful are their outcomes for conservation applications?
- Innovación en técnicas de plantación forestal contra la sequía y la vegetación competitiva en condiciones mediterráneas.
- Metabolic engineering and genome editing in rice.

Any 2019

- Acolchados y su efecto sobre el control y la biología de la juncia (*Cyperus rotundus* L.) o Mulches and their effect on control and biology of purple nutsedge (*Cyperus rotundus* L.).
- Metamitrona, una nueva herramienta para optimizar el aclareo químico en manzano.
- Assessing soil and canopy spatial variability in fruit orchards to improve management and sampling by using auxiliary information provided by proximal and remote sensors.
- Forest resilience and post-disturbance dynamics: the role of species composition and structure.
- Wildfire risk management in southern European landscapes: Towards a longterm comprehensive strategy.
- Biofortification and Plant Stress: the Role of *Azospirillum brasilense* Sp7.
- The role of sustainable agricultural practices to mitigate greenhouse gases and to sequester soil carbon under newly irrigated Mediterranean agroecosystems.
- Isoprenoid and flavonoid biosynthesis and regulation in higher plants.



- Photoperiod response as a driver of flowering time in spring durum wheat and its influence on productivity, and environmental adaptability.
- New insights to durum wheat breeding in the genomics era through the exploration of a diversity panel of Mediterranean landraces.
- Habitat management in Mediterranean fruit orchards to foster pollinator and natural enemy communities.

Any 2020

- Vegetation drives greenhouse gas exchange, and carbon and nitrogen cycling in grassland ecosystems.
- Ground vegetation covers as a tool for weed management in vineyards.
- Fruit detection and 3D location using optical sensors and computer visión.
- Advances on spray drift assessment in 3d crops.
- Phenological adaptation and its genetic mechanisms in barley (*Hordeum vulgare L.*).
- Characterization of capacitance soil moisture sensors for the automated scheduling of drip irrigation in orchards.
- Towards the characterisation of adaptive syndromes of Mediterranean pines: insights through innovative tree phenotyping techniques.
- Impacto del manejo del suelo y del sistema de riego y su gestión sobre las emisiones de gases de efecto invernadero bajo condiciones mediterráneas.
- Integrated Pest Management in Maize at the Landscape Scale.
- Increasing the feasibility of General Surveillance of Genetically Modified maize.
- Towards an integrated control of peach powdery mildew (*Podosphaera pannosa*) through the application of molecular tools in epidemiological and genetic resistance studies.
- Understanding developmental processes responsible for adaptation- and yield- related traits in elite wheat germplasm.

Any 2021

- Elucidating the plant growth-promoting effects of three microorganisms on deciduous fruit tree plants using in vitro culture conditions.
- Effect of compounds from agricultural biodegradable plastics on the environment and on plant development.
- Pesticide dose adjustment in 3D crops.
- Procesos subyacentes a la mortalidad arbórea tras incendio.
- Effects of forest management, tree growth and climate on fungal communities.
- Molecular methods to study the movement of predatory arthropods between elements of the landscape: from topical marking to metagenomics.
- Unraveling biotic and environmental factors driving fungal dynamics.
- Sense and Sensitivity: on the biology and neuroethology of two tortricid moths.
- Redesigning rice for environmental sustainability, enhanced productivity and specialty uses.
- Plant-produced microbicides against the human immunodeficiency and severe acute respiratory symptom viruses.
- Hull-less and coloured-grain barley as a source of valuable healthy bioactive compounds.
- Bases ecològiques per a una gestió pastoral.
- Repoblación y gestión forestal en España desde el siglo XIX hasta la actualidad. Estudio de su desarrollo, fases históricas y resultados.



- **Assessment of genomic and high-throughput phenotyping tools in a diversity panel of Mediterranean landraces and cultivars for wheat breeding under rainfed environments.**
- **Factores ecológicos y de gestión que afectan la producción trufera.**