



Dottorato di Ricerca in Scienze delle Produzioni Vegetali e Animali
PhD Programme in Plant and Animal Science
Codice del Corso di Dottorato/PhD code: DOT1335834
Coordinatore/Coordinator: Prof. Roberta BERNINI

Scheda delle attività svolte/Form activities carried out

Informazioni generali/General information

Ciclo/Cycle XXXVIII

Dottorando/PhD student Angelo Rossini

Posizione/Position

- Con borsa di studio/With scholarship
 Senza borsa di studio/Without scholarship
 Riservata a dipendenti di enti di ricerca/Reserved for research center employees
 Dottorato industriale/Industrial PhD
 Altra tipologia/Other typology

Tutor/Supervisor

Roberto Ruggeri

Affiliazione/Affiliation Università degli studi della Tuscia

Co-tutor

Roberto Ercolani

Affiliazione/Affiliation ISLA srl

Attività di ricerca/Research activity

Sede prevalente dell'attività di ricerca/Main place of research Viterbo, Tarquinia

Breve descrizione dell'attività di ricerca/Short description of the research activity

(Max 5000 caratteri, inclusi gli spazi/Max 5000 characters, included spaces)

The research activity is mainly based on the application of new biostimulants on the main crops of the region, to develop a more sustainable and profitable fertilization and defence program for every crop. In the last year, we have been focused on durum wheat and tomato, trying to enhance their agronomic performance starting from germination and concluding with yield and production quality. One of the main objectives was to improve both germination percentage and seedlings vigour, to guarantee a perfect in-field establishment of the crop. Several germination trials were performed for durum wheat and tomato, applying different biostimulants at different dose directly in the seed coating. Some of the biostimulants significantly enhanced the germination performances and seedlings vigour in both durum wheat and tomato seeds, also in saline conditions. Additionally, we performed some durum wheat field trails at the experimental farm of the University of Tuscia and under real farm conditions as well. The main result we found was that two foliar applications of a combination of different kinds of biostimulants could gain good yield with a reduction of nitrogen input. Regarding the industrial tomato, we performed two different field trails: one focused on a possible fertilization strategy to control the broomrape without the use of chemicals, and the second one based on the application of PGPR to enhance the yield, but without reducing the quality of the fruit. We have observed that the applications of metals as copper, iron, zinc and manganese significantly reduced the degree of infestation compared with the untreated tomato and the one treated with the herbicide, the same effect has been found in two different locations. Finally, the application of a PGPR significantly improved the tomato yield, increasing the fruit size, but without affecting the quality.



<p>From this first year of PhD activity we can prudently state that the biostimulants application could be a useful instrument to help the farmers to face the new agricultural issues due to the climate change and to the continuous market volatility.</p>			
<p>Publicazioni scientifiche/Scientific publications (Indicare tutte le informazioni bibliografiche dei lavori pubblicati e sottomessi/Indicate all references of published and submitted papers)</p>		<ul style="list-style-type: none"> - Rossini A., Ruggeri R., Mzid N., Rossini F., Di Miceli G., 2023. Algae-based biostimulant positively affects germination and seedling vigour in durum wheat under salt stress conditions. Under review. - Rossini A., Ruggeri R., Mzid N., Rossini F., 2023. Foliar application of biostimulants enhances sustainability and agronomic performances of wheat: preliminary results from central Italy. Atti del 52° Convegno Nazionale della Società Italiana di Agronomia, Portici 25 - 27 settembre 2023. 	
<p>Comunicazioni a congressi/Conferences communications (Specificare se comunicazioni poster o comunicazioni orali/Specify if poster or oral communications)</p>		<ul style="list-style-type: none"> - International conference ISPAMED, Innovations for Sustainable Crop Production in the Mediterranean Region. Palermo, 12th - 13th July 2023, Oral communication. - 52° Convegno Nazionale della Società Italiana di Agronomia, La Ricerca Agronomica per la Transizione Verde. Portici (NA) 25th – 27th September 2023, Poster. 	
<p>Brevetti/Patents (Specificare/Specify)</p>			
<p>Altre tipologie di pubblicazioni/Other publications (Specificare/Specify)</p>			
<p>Attività formative/Training activities (Elencare tutte le principali attività svolte e, per ciascuna di esse, indicare i dati richiesti/List the main activities and for each specify of them the data)</p>			
	<p>Titolo/Title</p>	<p>Località/Location</p>	<p>Data/Date</p>
<p>Frequenza di corsi/Partecipation in courses</p>	<ul style="list-style-type: none"> - Genetics and physiology of yield of relevant crop species and climate changes - Corso di Europrogettazione - Principi attivi delle piante - Statistica base ed avanzata con R 	<ul style="list-style-type: none"> - Viterbo - Viterbo - Viterbo - Viterbo 	<ul style="list-style-type: none"> - 13-16/06/2023 - 17-31/03/2023 - 21-23/06/2023 - 5-15/09/2023



<p>Partecipazione seminari/ Partecipazione seminars</p>	<p>a in</p> <ul style="list-style-type: none"> - Serbian Entomofauna: what we find and what we eat? - Scenario of protected cultivation in India. - EUROPEAN GREEN DEAL AND FARM TO FORK STRATEGY. WHAT SHORT-TERM IMPACTS FOR ITALIAN FARMS, AND WHAT STRATEGIES IN THE MEDIUM-LONG TERM? - THE ROLE OF ENDOGENOUS ENZYMES IN THE EVOLUTION OF SENSORIAL CHARACTERISTICS OF PLANT-BASED FOODS. - MODELLING PEST AND DISEASES: AN OVERVIEW FROM THEORETICAL TO PRACTICAL ASPECTS. - Point-of-care tools for plant pathogens detection. - PROTOPLAST TECHNOLOGY FOR DNA-FREE GENOME EDITING. - ENHANCING THE NUTRITIONAL QUALITY OF MAJOR FOOD CROPS THROUGH CLASSICAL AND NEW BREEDING TECHNIQUES. - MICROBIOME-BASED APPROACHES FOR A SUSTAINABLE AGRICULTURE. - PLANT CELL CULTURES: BACK TO THE FUTURE. - THE TWO-FACED PLANT VIRUSES: FROM PLANT PATHOGEN TO SMART NANOPARTICLES. - HIGH PERFORMANCE MOLECULAR DYNAMICS SIMULATIONS TO ASSESS THE IMPACT OF THE ENVIRONMENT ON HUMAN HEALTH AND FOR THE 	<ul style="list-style-type: none"> - Viterbo - Viterbo - Online - Online - Online - Online - Online - Online - Online - Online - Online - Online - Online - Online 	<ul style="list-style-type: none"> - 27/02/2023 - 20/03/2023 - 14/04/2023 - 17/04/2023 - 19/04/2023 - 21/04/2023 - 27/04/2023 - 28/04/2023 - 8/05/2023 - 10/05/2023 - 15/05/2023 - 17/05/2023 - 22/05/2023 - 24/05/2023

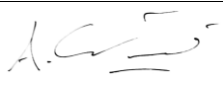


	DESIGNING OF NEW THERAPEUTIC APPROACHES. - PLANT-BASED PRODUCTION OF VETERINARY VACCINES AND DIAGNOSTICS. - PRECLINICAL RESEARCH MODELS AND THEIR APPLICATIONS IN DRUG DISCOVERY.		
Partecipazione a convegni, workshop, scuole/Partecipation in workshop, schools	- New approaches to enhance crop resilience and sustainable production under a changing climate.	- Viterbo	- 22/06/2023
Stage in Italia e/o all'estero/Internship in Italy and/or abroad (Indicare la località e descrivere brevemente il tipo di attività svolta/Indicate the location and describe briefly the activity carried out)			
Altre attività formative/Further educational activities (Indicare la località e descrivere brevemente il tipo di attività svolta/Indicate the location and describe briefly the activity carried out)			
Attività di didattica integrativa/Teaching activity (Elencare tutte le attività svolte e, per ognuna, indicare i dati richiesti/List all activities and specify for each of them the data)			
Attività di tutoraggio e didattico-integrative/Tutorship activities	Titolo/Title	Località/Location	Data/Date
Seminari in corsi di laurea/Seminars in master degrees	Laboratorio di produzione sementiera delle colture erbacee (cod. 119398)	Viterbo	11/10/2023 18/10/2023



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E FORESTALI

(Indicare il titolo, la località, la data/Specify the title, the location and the date)			
Data/Date	19/10/2023		
Firma Dottorando/Signature PhD student			
Firma Tutor/Signature Supervisor	