



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: XXXVII PhD program cycle in Plant and Animal Science
Dottorando/PhD student: MARIAM ATAIT
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 Prof. Roberto Mancinelli
Affiliazione/Affiliation UNITUS
Co-tutor Prof Emanuele Radicetti Affiliazione/Affiliation UNITUS
Attività di ricerca/Research activity Efficacy of sustainable agronomic practices in the Durum Wheat / Potato crop rotation system and next generation varietal selection of wheat for VCU
Sede prevalente dell'attività di ricerca/Main place of research Italy
Breve descrizione dell'attività di ricerca/Short description of the research activity (Max 5000 caratteri, inclusi gli spazi/Max 5000 characters, included spaces) Crop production methods are the key elements to determine the role of agriculture in combating global farming and achieving sustainable development goals. The two most popular methods for crop production are: conventional agriculture and sustainable agriculture. The agricultural sustainability is defined as the ability of a crop production system to continuously produce food without environmental degradation. Whereas, conventional agriculture is the traditional crop production method in which there is no consideration given to the environmental degradation. Studies show that sustainable agriculture practices (zero tillage, organic farming, effective irrigation system) have less negative effects on the environment and produce good quality food crops that are environmentally, socially and economically viable. Whereas, conventional agriculture has more negative effects on the ecosystem because of the use of fertilizers, pesticides, herbicides and soil tillage practices. All conventional practices produce high GHG's and also contribute in land and water pollution but at the same time produce high crop yield than sustainable ones. As a result, the sustainable agriculture is under consideration of agriculture policy makers, researchers and farmers to be adopted as the mass crop production method on commercial level. But unfortunately, till date, the conventional methods of crop production are being widely adopted by the farmers throughout the world due to the lack of information and guidance provided to the farmers. At University of Tuscia a couple of different studies are under process to examine the effects of sustainable and conventional agronomic practices on different wheat (<i>Triticum aestivum</i> and <i>Triticum durum</i>) varieties. The first current research activity is based on the testing and evaluation of next generation wheat varieties under different cropping systems. The objective of the study is to select and propose best sustainable agronomic practices and wheat varieties to be used in future on European farmlands for sustainable agriculture.



The field experiment includes different agronomic practices as treatments: drought, organic management, and fungicide application. The experiment includes 45 durum wheat varieties and 30 bread wheat varieties. Crop data will be collected periodically to evaluate the effect of cropping system on growth of each wheat variety. The results obtained will help us in identifying the best wheat varieties under best sustainable cropping systems to be used in future.

The second research is related to a two year crop rotation with three different soil tillage methods and two different fertilizer types. Crop and soil data will be collected periodically to evaluate the effect of treatments on growth of each crop, and soil characteristics (chemical and biological components).

Pubblicazioni scientifiche/Scientific publications (Indicare tutte le informazioni bibliografiche dei lavori pubblicati e sottomessi/Indicate all references of published and submitted papers)	Mancinelli, R.; Marinari, S.; Atait, M.; Petroselli, V.; Chilosi, G.; Jasarevic, M.; Catalani, A.; Abideen, Z.; Mirzaei, M.; Allam M.; Radicetti, E., 2023. Durum Wheat Potato Crop Rotation, Soil Tillage, and Fertilization Source Affect Soil CO₂ Emission and C Storage in the Mediterranean Environment. <i>Land</i> 2023,12(2),326. Mancinelli, R.; Allam, M.; Petroselli, V.; Atait, M.; Jasarevic, M.; Catalani, A.; Marinari, S.; Radicetti, E.; Jamal, A.; Abideen, Z.; Chilosi, G., 2023. Durum wheat production as affected by soil tillage and fertilization management in a Mediterranean environment. <i>Agriculture</i> 2023
Comunicazioni a congressi/Conferences communications (Specificare se comunicazioni poster o comunicazioni orali/Specify if poster or oral communications)	Posters for Congresso Società Italiana di Agronomia, SIA, 2022 and 2023 Atait M., Mancinelli R., Allam M., Petroselli V., Quintarelli V., Radicetti E., 2022. Carbon Flux as Affected by Different Winter Cover Crops. 19-21 september 2022 Allam M, Mancinelli R, Petroselli V, Atait M, Quintarelli V, Radicetti E., 2022. Fertilizer source affects crop yield under different tillage practices: a meta-analysis. 19-21 settembre 2022 Petroselli V, Radicetti E, Palomba I, Allam M, Atait M, Quintarelli V, Mancinelli R., 2022. Processing tomato has affected by Barrier and Curzate in different soil fertilization. 19-21 settembre 2022 Roberto Mancinelli¹, Mohamed Allam¹, Mariam Atait¹, Verdiana Petroselli¹, Emanuele



		Radicetti ² Effects of different agronomic conditions on eight bread wheat varieties production. September 2023	
Brevetti/Patents (Specificare/Specify)			
Altre tipologie di pubblicazioni/Other publications (Specificare/Specify)			
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)			
Frequenza di corsi/Partecipation in courses	Titolo/Title	Località/Location	Data/Date
Partecipazione a seminari/ Partecipation in seminars	1-MICROBIOME-BASED APPROACHES FOR A SUSTAINABLE AGRICULTURE Dott.ssa Annamaria Bevivino	Viterbo	8-may-2023
	2-PLANT CELL CULTURES: BACK TO THE FUTURE Dott.ssa Silvia Massa	Viterbo	10-May-2023
	3-THE TWO-FACED PLANT VIRUSES: FROM PLANT PATHOGEN TO SMART NANOPARTICLES Dott.ssa Chiara Lico	Viterbo	15-May-2023
	4-HIGH PERFORMANCE MOLECULAR DYNAMICS SIMULATIONS TO ASSESS THE IMPACT OF THE ENVIRONMENT ON HUMAN HEALTH AND FOR THE DESIGNING OF NEW THERAPEUTIC APPROACHES Dott.ssa Caterina Arcangeli	Viterbo	17-May-2023
	5- PLANT-BASED PRODUCTION OF	Viterbo	22-May-2023

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DI SCIENZE AGRARIE
E FORESTALI

	2-Tecniche molecolari innovative per lo studio del microbioma del latte e del formaggio Prof.ssa Francesca Luizatelli 3-Tecniche di ingegneria genetica e proteica abbinata alle produzioni animali e vegetali Prof.ssa Laura Bertini 4-Approccio metabolomic per la caratterizzazione e la valorizzazione dei prodotti agroalimentari Prof.ssa Federica Gevi	Viterbo Viterbo	14-06-2023 to 23-06-2023 13-06-2023 to 21-06-2023
Data/Date 24-1-2024			
Firma Dottorando/Signature PhD student			
Firma Tutor/Signature Supervisor			