

SCHEDA DELLE ATTIVITÀ SVOLTE NEL CORSO DI DOTTORATO DI RICERCA/
ACTIVITIES SHEET CARRIED OUT DURING THE PHD COURSE

(1) INFORMAZIONI GENERALI DEL DOTTORANDO/GENERAL INFORMATION OF THE PhD STUDENT	
Cognome e nome/Surname and name	FENJAN Saleh Falih
Corso di Dottorato/PhD course	Dottorato in Scienze delle Produzioni Vegetali e Animali (SPVA)
Codice del Corso di Dottorato/PhD code	
Ciclo/Cycle	Academic year 2016/2017 Cycle XXXII
Posizione/Position	<input type="checkbox"/> con borsa di studio/with scholarship <input type="checkbox"/> senza borsa di studio/without scholarship <input checked="" type="checkbox"/> altro/other

(2) ATTIVITA' DI RICERCA/RESEARCH ACTIVITY	
Cognome e nome del tutor (o dei tutor)/ Supervisor(s) surname and name	SPERANZA STEFANO
Università, Ente di Ricerca, Azienda/ University, Research institution, Company	The Ministry of Agriculture in Iraq
Titolo dell'attività di ricerca/Research title	STUDY ON THE EFFECT OF CALCIUM CARBONATE NANOPARTICLES AS A NEW STRATEGY TO CONTROL THE OLIVE FRUIT FLY <i>Bactrocera oleae</i> (Rossi) IN OLIVE ORCHARDS
Breve descrizione dell'attività di ricerca/Short description of the research activity (Max 2500 caratteri, esclusi gli spazi/Max 2500 characters, excluded spaces)	
<p>The research activities were started by doing a sort of survey related to my PhD research study, to have an idea about the olive key pests and diseases in Iraq, and to have information about the common olive varieties cultivated as well as the main strategies used to control those pests in Iraq. The research was conducted in Iraq in collaboration with The Iraqi Ministry of Agriculture. The collected data were displayed in poster presentations at two different conferences. Field activities were started on July 24th 2018 to assess the presence of the olive fruit fly <i>Bactrocera oleae</i> in olive orchards, and to</p>	

evaluate the population dynamics and infestation rate. Fruit-samples collection was started at the end of July 2018 and continued periodically every week to evaluate the development of infestation levels. The fruit samples were transferred to the University laboratory for examination under the microscope to detect and record the number of immature stages based on collection date. Later, Calcium carbonate nanoparticles (CaCO_3) and colloidal calcium (CaCol) suspensions were prepared in the laboratory for field application. Part of the orchard was divided into three blocks (A1), (A2) and (A3), that were treated with: Calcium carbonate NPs, colloidal Ca and tap water as control, respectively. The treated olive fruits were collected from each treated block and were placed in special boxes in the laboratory to evaluate the effect of both treatments on the development of immature stages and adult's emergence. Rearing of *B. oleae* was done in the laboratory by collecting randomly a number of infested olive fruits from orchards, and placing them into rearing cages with a suitable diet. The newly emerged insects were used for laboratory bioassays to test the effectiveness of the Calcium carbonate formulas on insect viability, female flies productivity and their development. The ultimate research activity was to detect and quantify the abundance of the bacterial endosymbiont *Candidatus* Erwinia dacicola, present in all life stages of wild olive fruit flies. For that, laboratory rearing was carried out and a number of reared insects were used and transferred into three experimental cages, that were exposed to the different Ca carbonate formulas incorporated into insect diets. An equal number of exposed female insects (4), was extracted weekly from each treatment replicate, then insects were killed by exposing them to a low temperature degree, transferred into Eppendorf tubes and stored at 20°C until DNA extraction process. Conventional PCR amplification was done on the extracted DNA to confirm the presence of target bacterium within insect samples. Later on, Real-time PCR was performed for each replicate in a sample, to quantify the bacterial DNA abundance in female head samples previously exposed to the tested products (NPs and colloidal calcium) throughout different intervals (1, 2 weeks and 3 weeks) of the experiment period. DNA quantification was based on the Ct value for each sample replicate involved in this assay. The obtained data from both field and laboratory trials were statistically analyzed and final results were discussed in the doctoral dissertation.

(3) PRINCIPALI ATTIVITÀ FORMATIVE SVOLTE/MAIN 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 requested data)			
Partecipazione a seminari, corsi, convegni, workshop, scuole/ Participation in seminars, courses, conferences, workshop, schools	Titolo/Title	Località/Location	Data, ore o giorni/ Date, hours or days
Seminar	"Machine vision systems for non-destructive evaluation of fruit and vegetables. application techniques and case studies". Dr. Roberto Romaniello. University of Foggia-Italy.	IAMB – Bari, Italy	26 January 2017
Course	Statistics analysis course with MSc students Dr. Michele RINALDI, Agricultural Research Council - Cereal Research Centre (CRA-CER), Foggia-Italy.	IAMB-Bari, Italy	30 January-03 February 2017
Seminar	"Registration of plant protection products, the case-study of microorganisms". Dr. Roberto KRON MORELLI. Agrifutur SRL (BS)-Italy.	IAMB-Bari, Italy	15 March 2017.
Course	Italian language courses. Organized by Language Services Unit A1 level.	Università Degli Studi Della Tuscia Via Santa Maria in Gradi, Viterbo-Italy.	The course included classes of 50 hours and lasted from March 2017.
Seminar	L'accesso aperto per la disseminazione dei risultati della ricerca in Horizon 2020 e la piattaforma OpenAIRE.	Università Degli Studi Della Tuscia (DAFNE) via S. Camillo de Lellis Viterbo-Italy	23 febbraio 2017
Conference	"Euro-Mediterranean meeting - Enhancing international cooperation in agriculture in the Mediterranean region". CIHEAM-Mediterranean Agronomic Institute of Bari (MAIB) in	IAMB-Bari, Valenzano- Italy	20 February 2017.

	coordination with the European Commission, Valenzano-Italy.		
Conference	Attending conference PROSPETTIVE SULL'IMPIEGO DI APPROCCI MODELLISTICI NELL'ATTUAZIONE DELLA DIRETTIVA EUROPA SULL'USO SOSTENIBILE DEI PRODOTTI SANITARI	Univrsita degli studi di Brescia-Italy	13-14 December 2017
International workshop	Attending workshop on the detection of <i>Xylella fastidiosa</i> , (international workshop).	France	16- 19 January 2018
International Conference	Poster participation in 8th IOBC-WPRS meeting on Integrated Protection of Olive Crops, 4-7 July- 2018, Florence-Italy (international). Poster title (Olives cultivation and the main strategies to control olive key pests in Iraq) Saleh Fenjan ¹ , Mario Contarini ¹ , Stefano Speranza ¹ .	Florence- Italy	4-7 July- 2018
International Conference	Poster participation in XI European Congress of Entomology (international). Poster title (Olives cultivation and the main strategies to control olive key pests in Iraq) Saleh Fenjan ¹ , Mario Contarini ¹ , Stefano Speranza ¹ .	Napoli, Italy	2nd-6th July 2018
Course	Attending Italian course/ A2 at the second semester of academic year 2017-2018, at the University of Tuscia in Viterbo	University of Tuscia - Viterbo	54 hours 2018
Seminars	Robot, energie alternative e big data.	University of Tuscia – Viterbo, Via S.M. in Gradi, 4	5 november 2018
Conference	Attending the Biocontrol 2019 Symposium held at the Department for Agriculture and Forest Sciences (DAFNE)	University of Tuscia - Viterbo	9-11 July 2019
Conference	Attending the 6 th International Entomophagous Insects conference (IEIC 6)	Perugia- Italy	9-13 September 2019
Course	Attending Italian course/ B1 at the second semester of academic year 2017-2018, at the University of Tuscia in Viterbo	University of Tuscia - Viterbo	54 hours 2019

(4) ATTIVITÀ DI DIDATTICA E DI RICERCA/TEACHING AND RESEARCH ACTIVITIES (Elencare tutte le attività svolte e, per ognuna, indicare i dati richiesti/List all activities and specify for each of them the requested data)	
Attività di tutoraggio e didattico-integrative/Tutorship activities (Specificare/Specify)	
Seminari/Seminars (Indicare il titolo, la località, la data/Specify the title, the location and the date)	
Pubblicazioni scientifiche/Scientific publications (Indicare tutte le informazioni bibliografiche dei lavori pubblicati e sottomessi/Indicate all references of published and submitted papers)	<ul style="list-style-type: none"> - Working on an article on ‘the effect of Calcium carbonate nanoparticles as a new strategy to control the olive fruit fly <i>Bactrocera oleae</i> in olive orchards’. - Working on an article for recording the first report of olive fruit fly <i>Bactrocera oleae</i> in Iraq.
Comunicazioni a congressi/Conferences communications (Specificare se comunicazioni poster o comunicazioni orali/Specify if poster or oral communications)	<ul style="list-style-type: none"> - Poster participation in XI European Congress of Entomology (international). Poster title (Olives cultivation and the main strategies to control olive key pests in Iraq) Saleh Fenjan¹, Mario Contarini¹, Stefano Speranza¹. - Poster participation in 8th IOBC-WPRS meeting on Integrated Protection of Olive Crops, 4-7 July- 2018, Florence- Italy (international). Poster title (Olives cultivation and the main strategies to control olive key pests in Iraq) Saleh Fenjan¹, Mario Contarini¹, Stefano Speranza¹. - poster participation at the Convegno - Prospettive sull’impiego di approcci modellistici nell’attuazione della Direttiva Europea sull’uso sostenibile dei prodotti fitosanitari, 13-14 December 2017, Brescia- Italy. Poster title. Use of ROOT to build a software optimized for parameter estimation and simulations with Distributed Delay Model Luca Rossini, Mario Contarini, Saleh Fenjan, Adalgisa Guglielmino and Stefano Speranza - poster participation at the Convegno - Prospettive sull’impiego di approcci modellistici nell’attuazione della Direttiva Europea sull’uso sostenibile dei prodotti fitosanitari, 13-14 December 2017, Brescia- Italy. poster title. Different modeling approaches to describe the development rate function of <i>Anthonomus eugenii</i> (Cano). Luca Rossini, Mario Contarini, Saleh Fenjan, Adalgisa Guglielmino and Stefano Speranza.
Altre tipologie di pubblicazioni/Other publications (Specificare/Specify)	



Partecipazione a progetti di ricerca/ Participation in research project (Indicare il titolo e la tipologia/Indicate the title and type)	
Stage in Italia e/o all'estero/ Internship in Itali and/or abroad (Indicare la località e descrivere brevemente il tipo di attività svolta/Indicate the location and describe briefly the activity carried ou)	
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)	

Data/Date 3/07/2020

Firma/Signature
