TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 5956**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia**

Scientist- in – charge: Prof. Quaglino Fabio

[Abdelhameed Moussa]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Moussa
Name	Abdelhameed

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Bachelor Degree	Organic Farming	Ain Shams University	2011
Master	Sustainable IPM technologies for Mediterranean fruit and vegetable crops	Mediterranean Agronomic Institute of Bari	2015
PhD	Agriculture, Environment and Bioenergy	State University of Milan	2021

FOREIGN LANGUAGES

Languages	level of knowledge
English	Excellent
Italian	Excellent
Arabic	Mother tongue

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2021	Best PhD award in Plant Protection from the Italian Association for Plant Protection (AIPP)

TRAINING OR RESEARCH ACTIVITY

Description of activity:

The research activity carried out covered different research areas such as

A. In-depth picture of the epidemiology and control of phytoplasma diseases. The research activities included the following:
   1. Identification of the insect vectors transmitting phytoplasmas to grapevines through different molecular techniques including PCR and molecular strain typing
   2. Use of push and pull trap plant for the containment of grapevine yellows spread within the vineyard.
   3. Use of entomopathogenic fungi and nematodes for the control of *Hyalethes obsoletus* the key insect vector of *Ca*. Pyhtoplasma.Solani.
   4. Studying the bacterial associates using the high throughput sequencing platform Illumina and the subsequent bioinformatic analysis for the identifying a possible antagonist for either phytoplasma or insect vector.
   5. Use of the recovered plant materials for grafting as a possible way for inducing recovery.
   6. Possible role of ground cover in the spread of phytoplasmas associated with BN and FD in vineyards.

B. characterization of the microbiome of European spruce bark beetle: *Ips typographus*, which threatens the conifers forest in the dolomites. The main aim of the running project is to improve the knowledge on the composition and the role of microbial fauna associated to *I. typographus*. Amplicon sequencing based on the 16S rRNA was carried out for the amplification of the bacterial associates. Moreover, fungal microbiota will be studied through a whole genome sequencing approach. Both bacterial and fungal microbiota will enhance our understanding about the epidemics of *Ips typographus* in the Dolomites.

C. Identification of the phoretic mites and nematodes associated with *I. typographus* since their incidence rate was noticeable within the studied populations. The main aim is to understand the relationship of mites and nematodes with *I. typographus*. Molecular tools such as DNA barcoding using the ~650-bp region near the 5′-end of the mitochondrial cytochrome c oxidase subunit I (COI) gene is a useful and reliable species identification marker. The results might open an avenue for a possible integrated management approach.

D. Investigations on Phytoplasma insect vectors including *Scaphoideus titanus* and Hyalesthes *obsoletus* for finding a practical solution for blocking the disease transmission route from vector to plant. Amplicon sequencing based on the 16S rRNA was carried out for the amplification of the bacterial associates was carried out to highlight the bacterial associates among the different studied locations with considerable phytoplasma infections.

E. Biological control of greenhouse tomato insect pests through the use of different microbial and botanical insecticides.

PROJECT ACTIVITY

Year	Project
2017-2020	"FERTILITY, ENVIRONMENT AND INCOME THROUGH SOIL AND BIODIVERSITY"
2021-2022	ITAT4132 —The role of bacteria and fungi in the population dynamics of the European spruce bark beetle in the Dolomites (DolomIps)
2021-2022	ITAT4153 — Distribution and population dynamics of the European spruce bark beetle in the Dolomites (DolomIPS2)

CONGRESSES AND SEMINARS

Date	Title	Place
18-23 July 2022	The XXVI International Congress of Entomology	Helsinki, Finland.
14-15 July 2022	IV Convegno AISSA#UNDER40	Bolzano, Italy
14-15 October 2021	VIII NATIONAL MEETING ON PHYTOPLASMS AND PHYTOPLASMIC DISEASES.	Catania, Italy
08-12 September 2019	4th International Phytoplasmologyst Working Group (IPWG) Meeting	Valencia, Spain

PUBLICATIONS

Articles in reviews
Moussa, Abdelhameed, Stefano Nones, Patrizia Elena Vannucchi, Guli-Rayna Shahzad, Jessica Dittmer, Erika Corretto, Martin Schebeck et al. "The bacterial community of the European spruce bark beetle in space and time." *bioRxiv* (2023): 2023-04. https://doi.org/10.1101/2023.04.28.538755.
Moussa, A., Guerrieri, E., Torcoli, S. *et al.* Identification of phytoplasmas associated with grapevine 'bois noir' and flavescence dorée in inter-row groundcover vegetation used for green manure in Franciacorta vineyards. *J Plant Pathol* (2023). https://doi.org/10.1007/s42161-023-01474-2.
Moussa, Abdelhameed, Fabio Quaglino, Monica Faccincani, Flavio Serina, Sara Torcoli, Niccolò Miotti, Alessandro Passera, Paola Casati, and Nicola Mori. "Grafting of recovered shoots reduces bois noir disease incidence in vineyard." *Crop Protection* 161 (2022). https://doi.org/10.1016/j.cropro.2022.106058.
Abdel-Razek, A.S., N.M. Abd El-Ghany, M.A. Gesraha, T.A. Elewa and A. Moussa. 2021. Susceptibility Assessment of Two Tomato Hybrids Against Tuta absoluta Infestation Under Greenhouse Conditions. Arab Journal of Plant Protection, 39(4): 317-322. https://doi.org/10.22268/AJPP-39.4.317322.
Quaglino, Fabio, Alessandro Passera, Monica Faccincani, Abdelhameed Moussa, Alberto Pozzebon, Francesco Sanna, Paola Casati, Piero Attilio Bianco, and Nicola Mori. "Molecular and spatial analyses reveal new insights on Bois noir epidemiology in Franciacorta vineyards." *Annals of Applied Biology* 179, no. 2 (2021): 151-168. https://doi.org/10.1111/aab.12687.
Moussa, A., Maixner, M., Stephan, D. *et al.* Entomopathogenic nematodes and fungi to control *Hyalesthes obsoletus* (Hemiptera: Auchenorrhyncha: Cixiidae). *BioControl* **66**, 523–534 (2021). https://doi.org/10.1007/s10526-020-10076-1.
Passera A, Zhao Y, Murolo S, Pierro R, Arsov E, Mori N, Moussa A, Silletti MR, Casati P, Panattoni A, et al. Multilocus Genotyping Reveals New Molecular Markers for Differentiating Distinct Genetic Lineages among "*Candidatus* Phytoplasma Solani" Strains Associated with Grapevine Bois Noir. *Pathogens*. 2020; 9(11):970. https://doi.org/10.3390/pathogens9110970.
Abdelhameed Moussa, Alessandro Passera, Francesco Sanna, Monica Faccincani, Paola Casati, Piero Attilio Bianco, Nicola Mori, Fabio Quaglino, Bacterial microbiota associated with insect vectors of grapevine Bois noir disease in relation to phytoplasma infection, *FEMS Microbiology Ecology*, Volume 96, Issue 11, November 2020, fiaa203, https://doi.org/10.1093/femsec/fiaa203.
Quaglino, F., Sanna, F., Moussa, A. *et al.* Identification and ecology of alternative insect vectors of '*Candidatus* Phytoplasma solani' to grapevine. *Sci Rep* **9**, 19522 (2019). https://doi.org/10.1038/s41598-019-56076-9.
Moussa, A, Mori, N, Faccincani, M, Pavan, F, Bianco, PA, Quaglino, F. *Vitex agnus-castus* cannot be used as trap plant for the vector *Hyalesthes obsoletus* to prevent infections by '*Candidatus* Phytoplasma solani' in northern Italian vineyards: Experimental evidence. *Ann Appl Biol*. 2019; 175: 302–

312. https://doi.org/10.1111/aab.12542.

Abd El-Ghany, Nesreen M., Atef S. Abdel-Razek, Khaled Djelouah, and Abdelhameed Moussa. "Efficacy of bio-rational insecticides against Tuta absoluta (Meyrick)(Lepidoptera: Gelechiidae) on tomatoes." *Bioscience Research* 15, no. 1 (2018): 28-40.

Abdel-Razek A S, Abd El-Ghany N M, Djelouah K, Moussa A. An evaluation of some eco-friendly biopesticides against Bemisia tabaci on two greenhouse tomato varieties in Egypt. Journal of Plant Protection Research. 2017;57(1):9-17. https://doi:10.1515/jppr-2017-0002.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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Place and date: 02/11/2023, Bolzano