

CURRICULUM VITAE Dr. Virgilio Balmas

2018-date Sassari (Italy): Permanent position as Associate Professor at the Department of Agraria, University of Sassari.

1999- 2018 Sassari (Italy): Permanent position as Assistant Professor at the Department of Plant Protection, Faculty Agriculture, University of Sassari.

2001: short term mobility (CNR), 2.5 months, at the Cereal Disease Laboratory, USDA-ARS, St. Paul-MN, USA.

1997 Montreal (Canada): 3-months post-doctoral contract at Department of Plant Science, Faculty of Agricultural and Environmental Sciences, McGill University

1996 Montreal (Canada): 11-months fellowship from National Research Council of Italy (CNR), competition number 215.28 on 29/04/95 at Department of Plant Science, Faculty of Agricultural and Environmental Sciences, McGill University, under the guidance of Dr. S. J-Hare. Title of research: “Comparison of genetic and biochemical markers on the detection of soil-borne fungi”. Subtitle of research: “Identification of *Rhizoctonia binucleata* AG-G, biocontrol agent of *Rhizoctonia solani* with a specific RAPD marker”

1990 Sydney (Australia): 6-months fellowship from National Research Council of Italy (CNR), competition number 203.06.43 on 21/07/89 at Department of Plant Pathology and Agricultural Entomology, University of Sydney, under the guidance of Professor L.W. Burgess. Title of research: “Susceptibility of *durum* wheat to the crown and root rot pathogenes *Fusarium graminearum* Group 1 and *Fusarium crookwellense* under controlled temperature and soil water potential”.

1985 Perugia (Italy): Degree in “Agricultural Sciences” at the Faculty of Agriculture, University of Perugia. Thesis undertaken at the Institute of Agronomy and Herbaceous Crops, supervisor Prof. G. Covarelli.

1977 Rome (Italy): High School Diploma from the Scientific High School “Istituto Nazareno”

PROFESSIONAL EXPERIENCE

Sassari – Italy

March 1999 – present

Working at the University on the following research topics:

- 1) epidemiology of *Fusarium* spp. on rice in Sardinia;
- 2) fungal pathogens of *durum* wheat in Sardinia;
- 3) crown and root rot of winter cereals in Italy;
- 4) head-blight of *durum* wheat in Italy;
- 5) characterization of italian isolates of *Pyrenophora teres* on barley;
- 6) molecular characterization of italian isolates of *Fusarium oxysporum* f. sp. *radicis-lycopersici*;
- 7) characterization of italian isolates of *Fusarium semitectum* from alfalfa;
- 8) biodiversity and endemism of *Trichoderma* spp. on uncultivated soils in Sardinia;
- 9) biodiversity and endemism of *Fusarium* spp. on uncultivated soils in Sardinia
- 10) biological control of *Rhizoctonia solani* and *Pythium* spp. with Sardinia isolates of *Trichoderma*;
- 11) molecular characterization of isolates of *Phoma tracheiphila*;
- 12) analyses of different chimal seed dressing for controlling foot and crown rot of durum wheat;
- 13) molecular characterization of isolates of *Monilia laxa*, *M. fructigena*, *M. fructicola*.
- 14) characterization of dermatologic and other human pathogenic *Fusaria* from hospitals in Northern and Central Italy

St. Paul – USA

2001: short term mobility (CNR), 2.5 months, at the Cereal Disease Laboratory, USDA-ARS, St. Paul-MN, USA.

Activity undertaken: DNA, RNA extraction from plant and fungal tissues; study of genetic diversity of isolates of *Fusarium graminearum* and *F. culmorum* with RFLP (Restriction Fragment Length Polymorphism) and VCG (Vegetative Compatibility Groups) casual agents of head blight of wheat.

Rome - Italy

July 1997 – December 1998

Working at the Experimental Institute for Plant Pathology (“Istituto Sperimentale per la Patologia Vegetale”), Ministry of Agriculture, Rome, on a temporary contract.

Activity undertaken: field trials for evaluating damage caused by *Fusarium* head-blight on wheat; isolations, identification and conservation of fungal pathogens of wheat; pathogenicity tests on wheat in controlled environment and in field; mycological analysis of soils; extraction of DNA from plant and fungal tissues; PCR and RAPD on fungal DNA.

Montreal - Canada

April - June 1997

Working at the Faculty of Agricultural and Environmental Sciences, McGill University, Department of Plant Sciences as a post-doc.

Activity undertaken : DNA, RNA extraction from plant and fungal tissues; PCR-RAPD; plasmid preparation; DNA hybridization.

May 1996 - March 1997

Scholarship from CNR at McGill University.

Activity undertaken : DNA, RNA extraction from plant and fungal tissues; PCR-RAPD; plasmid preparation; DNA hybridization.

Rome - Italy

January - April 1996

Working at Istituto Sperimentale per la Patologia Vegetale; working on the Coordinated Research Project CNR 'Frumento duro' (durum wheat).

Activity undertaken: mycological analysis of soils and plants; pathogenicity testing in field and greenhouse; pathogenicity testing for the evaluation of seed treatments against soil borne diseases.

May - August 1995

Working at the Istituto sperimentale per la Patologia Vegetale on a temporary contract on the following projects: Coordinated Research Project CNR 'Durum wheat'; 'Tropical fruit crops'

Activity undertaken : mycological analysis of soils and plants; pathogenicity tests in the field and greenhouse; pathogenicity tests on tropical fruit.

January - April 1995

Working at Istituto Sperimentale per la Patologia Vegetale.

Activity undertaken: mycological analysis of soils and plants; pathogenicity tests in the field and greenhouse; mycological analysis of seeds.

January 1992 - December 1994

Consultant for Telespazio S.p.A. on " T.E.R.R.A. del Sud "

Activity undertaken :

- technical support in the study of 'Agrophenological and phytopathological observations' and 'Cultivation indications';
- testing and evaluating the activities of cooperating companies;
- designing developing models and procedures for Telespazio;
- critical analysis of phytopathological results and models;
- consultant in phytopathological and phytosanitary problems for the development and the optimization of models and procedures referring to the analysis, testing and evaluation of the results obtained by co-workers;
- supervision of field sampling activity;
- responsible for technical contacts with Research Institutes and Universities (particularly with the Plant Pathology Departments).

May 1991 - January 1992

Working at the Istituto Sperimentale per la Patologia Vegetale of Rome on temporary contract.

Activity undertaken: sampling and analysis of fungal species present in different crops; mycological analysis of soils; pathogenicity tests in greenhouse.

Sydney - Australia

September 1990 - March 1991

Scholarship from CNR at the University of Sydney

Activity undertaken: mastering the technique of isolation of *Fusarium* spp. from soil and plant; mastering the method of artificial inoculation in the field and in the greenhouse; mastering the identification of *Fusarium* species; identification of durum wheat reactions to crown and root rot caused by *Fusarium graminearum* Group 1 and *F. culmorum*.

Rome - Italy

May 1989 - June 1990

Worked at the Istituto Sperimentale per la Patologia Vegetale on fixed time contract; working on the following projects:

- “Relationships between various types of cultivation arrangements and the development of fungus parasites”.
- ‘Coordinate research project CNR’ title of the research “Agricultural, genetic and phytopathological aspects of cultivation of durum wheat in southern Italy: Soilborne fungal pathogens ”

December 1986 - February 1989

Worked at the Istituto Sperimentale per la Patologia Vegetale as a consultant for the following projects undertaken by Ministry of Agriculture and Forests and the National Research Council (CNR):

-IPRA, title of research “Epidemiology of wheat leaf parasites and perfecting of models for damage evaluation”. Activity undertaken : Field trials for damage evaluation caused by black rust (*Puccinia graminis* f.sp. *tritici*) and septoria (*Septoria nodorum*) on varieties of bread and durum wheat.

- Cropping management, title of research “ Relationships between various types of cultivation management and development of fungal parasites.” Activity undertaken: isolation, multiplication and conservation of fungal pathogens of wheat, barley, corn, soya, sorghum, beetroot and sunflower. Evaluation tests of various types of cropping systems and of the technological input in certain Italian localities, Pathogenicity test in controlled environments of organisms found on the abovementioned species.

- Cereals,

Subproject ‘Durum wheat ‘ and ‘Bread wheat‘ . Title of research “Investigations on wheat parasites. Activity undertaken: test on the resistance of varieties of bread and durum wheat cultivated in Italy in open field and controlled environments with reference to the main causal agents of crown and foot rot.

Subproject ‘Barley’ Title of research “ Investigation of the behaviour of different varieties of barley infected with main fungus diseases”. Activity undertaken : sampling in various Italian localities with the aim of determining the main diseases; evaluating the behaviour of barley varieties under the stress of infection by the main fungal diseases.

April - July 1986

Voluntary work at the Sezione di Tecniche Agronomiche of the Istituto Sperimentale per la Cerealicoltura, working on the “Cereals” Projects.

1992-1997

Consultant for Bayer S.p.A. at the Istituto Sperimentale per la Patologia Vegetale. Activity undertaken: sampling and analysis of fungus species present on wheat plants and in the soil; pathogenicity tests on wheat in controlled environments and in the field.

He is author of 110 publications on international (39) and national papers (71), 112 abstracts at national and international congress.

Number of citations: **854** (Scopus) **713** (Web of Science)

Hirsch index (contemporary H-index): **20** (Scopus); **18** (Web of Science)