FIRST REPORT OF *FUSARIUM GLOBOSUM* IN EUROPE. **V. Balmas[1,2], A. Marcello[1,2], F. Masia[2] and Q. Migheli[1,2].** [1]*Dipartimento di Protezione delle Piante, Unità di ricerca Istituto Nazionale Biostrutture e Biosistemi, Università degli Studi, Via E. De Nicola 9, 07100 Sassari, Italy.* [2]*Centro per la Conservazione e la Valorizzazione della Biodiversità Vegetale, Università degli Studi di Sassari, Loc. Surigheddu, Alghero, SS, Italy. E-mail: balmas@uniss.it*

In April, 2007, samples of tomato plants grown in a greenhouse near Alghero (Sardinia, Italy) and showing dark necroses on the stem were analysed. Isolation on potato dextrose agar (PDA) and water agar indicated that plants were largely affected by the common soilborne pathogen *Phytophthora infestans*. In addition, several *Fusarium* colonies were isolated and morphological characteristics of monosporic cultures grown on PDA and on carnation leaf agar either in the darkness or under alternating 12-h darkness/light condition allowed their unambiguous identification as *F. globosum* Rheeder, Marasas & P.E. Nelson. The morphology of this species is unique, and includes three types of microconidia: mostly clavate to ellipsoid, with evident truncate base, forming in chains; rare pyriform to napiform; globose, with or witout a distinct papilla and 0-1 septate. The conidiophores are mono- and polyphialides. The macroconidia may be produced from monophialides or in sporodochia, present thin walls and are slightly curved, with apical cell curved to a point, and basal cell pedicellate or foot-shaped. Upon inoculation with a spore suspension (10^6 spores ml^{-1}), the tested isolates did not establish on mechanically wounded tomato seedlings, suggesting that this plant species does not represent a susceptible host. *F. globosum* was first described in 1996 by Rheeder *et al.* (*Mycologia* **88**: 509-513, 1996) following isolation from corn kernels. A second report came from in Japan (Aoki and Nirenberg, *Mycoscience* **40**: 1-9, 1999), indicating this species as a frequent coloniser of healthy wheat culm. *F. globosum* may produce fumonisins, low levels of beauvericin, and in some cases also fusaproliferin. However, the reports of *F. globosum* are too limited to allow a precise definition of its ecological and pathogenic relationships.

MOLECULAR ECOLOGY OF SARDINIAN *FUSARIA*. **V. Balmas[1], Q. Migheli[1], P. Garau[1], S. Kang[2], D.M. Geiser[2] and K. O'Donnell[3].** [1]*Dipartimento di Protezione delle Piante, Università degli Studi, Via E. De Nicola 9, 07100 Sassari, Italy.* [2]*Department of Plant Pathology, The Pennsylvania State University, University Park, PA, USA.* [3]*NCAUR-ARS-USDA, Peoria, IL, USA. E-mail: balmas@uniss.it*

Mediterranean islands such as Sardinia are well known for their diversity of vascular plants and high floristic endemism. We hypothesized that saprobic soil fusaria might exhibit distinct genetic structures based on environmental contexts of their origins. To test this hypothesis, we measured the species and haplotype diversity of 313 fusaria cultured from soil obtained from ten diverse field sites across Sardinia. Information collected from these sites included global positioning system (GPS) coordinates, soil type, average yearly precipitation and land-use-type. Genetic diversity was assessed using sequences of partial translation elongation factor (*EF*-1α) and the second largest RNA polymerase subunit (*RPB2*) gene. In addition, 2-locus haplotypes (*EF*-1α + IGS rDNA) were assigned to members of the *Fusarium oxysporum* species complex (FOSC). Similarly, 3-locus haplotypes (*EF*-1α + *RPB2* + ITS-LSU rDNA) were assigned to members of the *F. solani* species complex. Spatial distribution of individual genotypes and association between genotypes and geospatial and environmental contexts of sampling sites were investigated. All data from this study will be available for visualization via the geovisualization function within the next web-accessible version of *Fusarium-ID*.

COMPARATIVE STUDY OF *FUSARIUM* COMMUNITIES FROM SOIL AND RHIZOPLANE OF MELON PLANTS FROM TROPICAL FARMING SOILS. **M. de Cara[1], D. Palmero[2], M. Santos[1] and J.C. Tello[1].** [1]*Departamento de Producción Vegetal, Universidad de Almería, Carretera Sacramento s/n, 04120 Almería, Spain.* [2]*Universidad Politécnica de Madrid, EUIT Agrícola, Ciudad Universitaria s/n, 28040 Madrid, Spain. E-mail: mdecara@ual.es*

Fifty-nine rhizospheric soil samples from twenty different melon farms of Guatemala and Honduras were analysed to study the *Fusarium* species present in the soil and those developing on roots surfaces. At the moment of the survey, all farms had been cropping melons for more than five years. Air-dried soil samples were firstly analysed by Warcup's technique using Komada medium. Rhizoplane of thirty-six melon plants (45 days-old) per sample were analysed by plating three root pieces per plant on the analogue selective medium. *F. oxysporum*, *F. solani*, *F. dimerum*, *F. moniliforme* (*sensu* Snyder & Hansen), and *F. roseum* (*sensu* Snyder & Hansen) were detected from both soil and rhizoplane, as well as the percentages of samples with each species. For soil: 57.6, 83.1, 13.6, 20.3 and 83.1% respectively; and for rhizoplanes: 37.3, 89.8, 3.4, 62.7 and 76.3% respectively. *F. roseum* was represented by *F. equiseti*, *F. acuminatum*, *F. semitectum*, *F. longipes*, *F. scirpi* (only in Honduras) and *F. sambucinum* (only in Guatemala). *F. moniliforme* was represented by *F. anthophilum*, *F. proliferatum* and *F. verticillioides* (*sensu* Gerlach & Nirenberg). Two species were isolated exclusively from soils: *F. chlamydosporum* (22% of total samples) and *F. lateritium* (only in one sample from Honduras). Positive correlation between presence in soil and presence on rhizoplane for the same sample was 34.2% for *F. oxysporum*, 75.9 for *F. solani*, 0% for *F. dimerum*, 20% for *F. moniliforme* and 73.6% for *F. roseum*.

CURRENT DISTRIBUTION OF *FUSARIUM* FUNGI ON SMALL GRAIN CEREALS IN RUSSIA. **T.Y. Gagkaeva and O.P. Gavrilova.** *Laboratory of Mycology and Phytopathology, All-Russian Institute of Plant Protection (VIZR), 196608 St. Petersburg-Pushkin, Russia. E-mail: gagkaeva02@yahoo.com*

A mycogeographic survey of *Fusarium* species associated with grain of cereals has been done over the agricultural areas of Russia. *Fusarium* fungi were isolated from surface sterilized grains. Representatives of the genus have been found in all areas where cereals are cultivated (near 40 million ha). Collated records of occurrence have indicated two general types of distribution pattern among *Fusarium* species: widespread and geographically restricted. According to abundance of these species, *Fusarium* spp. may be divided in groups with dominant or infrequent positions in the complex of pathogens. The widespread and dominant fungi, *F. poae, F. sporotrichioides, F. avenaceum*; the widespread and infrequent fungi, *F. tricinctum*, *F. equiseti*, *F. semitectum*. Most likely the second group has less pathogenicity and biological activity than the first one. The distribution of these ubiquitous fungi is not associated with climate. *F. graminearum* belongs to geographically restricted fungi. This is a typical pathogen in the South-European area and in the Far East. During the few last years, this pathogen was detected in Central and North-western regions. The infrequent fungi are obviously linked to the environmental