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NETWORK ACTIVITY REPORT: 2000-2002

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INTRODUCTION

The Mediterranean Network on Fruit Tree Viruses (MNFTV) is a sub-network of the Integrated Pest Management Network (IPMN), promoted and coordinated by the Mediterranean Agronomic Institute of Bari (CIHEAM/IAMB) to address sanitary problems affecting stone fruit crops in the Mediterranean. In particular, its activities have contributed to the setting up and harmonization of the protocols for the production, conservation and use of virus-free stone fruit propagating material.

MNFTV PARTNERS

The network activities started in 1995 and have involved many institutions from the following Mediterranean countries: Albania, Algeria, Cyprus, Egypt, Greece, France, Italy, Jordan, Lebanon, Malta, Morocco, Spain, Syria, Tunisia and Turkey. The list of network partners is given in Table 1, which represents the hard core of research activities in the framework of MNFTV. However, other institutions from the same countries have been also involved.

During the first phase (1995-1997) the network outputs have arisen the interest of other research institutions outside the Mediterranean basin which gradually joined MNFTV activities. Additional cooperation was from Central-Eastern Europe and Balkan countries i.e. F.R. Yugoslavia, Czech Republic, Slovakia, Bulgaria, Poland, Austria, Hungary, etc. Their contribution was a valuable source of information and gave the opportunity to compare the collected data between the two geographic areas in terms of pathogen biodiversity.

MAIN RESEARCH LINES

The main research lines of MNFTV have been the following:
the production, standardization and/or simplification of new diagnostic tools/protocols for virus and virus-like agents;
the assessment of the sanitary status of the stone fruit industry in the Mediterranean countries;
the development and/or harmonization of national sanitary certification schemes in the Mediterranean;
the production and conservation of sanitarily improved native Mediterranean cultivars.

MEETINGS AND TECHNICAL VISITS

During the period 2000-2002, the annual network meetings took place in Malta (2000) and Albania (2001).

The 1st meeting was held at the Plant Biotechnology Centre of Lija (Malta), from 3-4 March 2000, it was attended by 21 participants from 14 countries. The meeting focused the discussion on the research lines carried out locally by each lab highlighting the common interests in the network activities. In particular, emphasis was laid on the importance of collecting sanitary information for many participating countries and the need to follow studies on the characterization of stone fruit viruses. The meeting ended with a technical visit to laboratories and other diagnostic facilities of the Centre, upgraded by an Italian cooperation project, coordinated by MAI-Bari.

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The 2nd meeting was held at the Agricultural University of Tirana (Albania), from 2-3 November 2001, in the framework of the 50th anniversary of this University. MNFTV technical meeting followed the seminar "CIHEAM day in Albania" with the activities of the Mediterranean Agronomic Institutes of Bari and Montpellier. The meeting was attended by 24 scientists from 14 Mediterranean and Eastern European countries. The participation of several scientists from Balkan area was supported thanks to the cooperation of GTZ Office in Tirana. Several reports on new pathogens (viruses, viroids and phytoplasmas) affecting the for Mediterranean stone fruit industry were delivered. A special section was devoted to the typing of PPV isolates carried out in several European and Mediterranean countries. At the end, a technical visit was organized to the Plant Protection Institute (Durrës) and Pomology Institute (Vlore). The participants visited the new facilities and laboratories equipped in the framework of the Italo-Albanian co-operation project "Production, conservation and use of certified propagation material in Albania", coordinated by MAI-Bari.

Table 1. List of Mediterranean institutions involved in the MNFTV activities (1995-2002)

Country	Institution involved
Albania	- Plant Protection Institute, Durrës - Ministry of Agriculture and Food, Tirana
Algeria	- Institut Technique de l'Arboriculture Fruitière et de la Vigne, Département du Laboratoire Central, Algiers
Cyprus	- Department of Agriculture, Nicosia
Egypt	- Department of Plant Pathology, University of Cairo - Agriculture Research Center, Giza
Greece	- Benaki Phytopathological Institute, Athens
France	- Station de Recherches Fruitières Méditerranéennes/INRA, Avignon - Station de Pathologie Végétale/INRA, Villenave d'Ornon
Italy	- Istituto Agronomico Mediterraneo di Bari - Dipartimento di Protezione delle Piante e Microbiologia Applicata, Università degli Studi and Istituto di Virologia Vegetale, Sezione di Bari - Dipartimento di Biologia applicata alla Difesa delle Piante, Università degli Studi di Udine
Jordan	- Ministry of Agriculture, Amman
Lebanon	- Faculty of Agriculture, Lebanese University, Beirut - Institut de Recherches Agronomiques Libanais, Tel-Amara, Rayak
Malta	- Plant Biotechnology Centre of Lija, Ministry of Agriculture and Fisheries
Morocco	- Ministère de l'Agriculture et de la Mise en Valeur Agricole, Service du Contrôle des Semences et Plantes, Rabat
Spain	- CEBAS (C.S.I.C.), Murcia - Universidad Politecnica -CSIC, Valencia
Syria	- Ministry of Agriculture and Agrarian Reform, Damascus
Tunisia	- AVFA, Ministère de l'Agriculture, Tunis - Fruit Tree Indexing and Certification Center, DGPA, Ministry of Agriculture, Tunis
Turkey	- Plant Protection Department, Mustafa Kemal University, Antakya

In order to better coordinate the MNFTV activities, and to facilitate the exchange of scientific information, a number of visits and training stages were organized also within the network activities.

MAIN OUTPUTS

Beside the continuous efforts in supporting the production, maintenance and use of healthy stone fruit germplasm, several specific outputs were obtained:

- information on the sanitary status of the Mediterranean stone fruit industry, particularly in Albania, Algeria, Italy, Lebanon, Palestine, Syria, Turkey, etc.;
- first report of several quarantine agents of stone fruits for EPPO region: PPV, APLPV, ESFY, PLMVd, etc.
- validation and use of tissue-printing technique for large-scale detection of viroids;
- validation and use of strain-specific monoclonal antibodies in ELISA for typing PPV isolates;
- molecular characterization of several pathogen isolates (i.e. HSVd, APLPV, ALV, etc.);
- production and validation of detection tools (polyclonal antisera, specific probes and primers) for viruses and viroids;
- information on PPV epidemiology and its distribution in infected trees.

INTEGRATED APPROACH

Beside the institutional activity of the network itself, IAMB has supported MNFTV with other available resources, following CIHEAM integrated approach philosophy. Additional research work has been done through Master thesis of CIHEAM/IAMB carried out in cooperation with some Mediterranean countries. Master studies on the sanitary status of stone fruit industry were supported by mobility programs towards Mediterranean countries, i.e. Albania, Jordan, Palestine, Syria, Tunisia, Turkey, whereas, in Albania and Malta, progress in sanitary information was made thanks also to cooperation programs devoted to the diagnosis of plant virus diseases and production of virus-free planting material.

INTERACTION WITH OTHER NETWORKS/PROJECTS

The interaction with other similar initiatives has always been a peculiar objective. Several years of cooperation work have facilitated the preparation and carrying out of several research projects and studies, both bilateral and multilateral ones. In particular mention should be made of:

- several labs from network partners (IAMB, University of Bari and Benaki Phytopathological Institute) during 2002 were involved in the European validation ring test of "SMT-DIAGPRO Project" for PPV detection and typing protocols, coordinated by IVIA, Valencia (Spain);
- the project "Characterization of Spanish and Italian isolates of the main stone fruit viruses and delivery of reliable methods for their routine diagnosis" involving IAMB, University and CNR of Bari and Universidad Politecnica-CSIC, Valencia (Spain), was carried out during 2001-2002 thanks to CNR-CSIC agreement for its financial support. Since the project was successful, a new project entitled "Detection and characterisation of Mediterranean stone fruit viruses and viroids and Delivery of reliable methods for their routine diagnosis" was accepted for funding in 2002, to carry on this collaboration;
- the research cooperation project "Detection of viroid, phytoplasma and fungal diseases of stone fruit trees grown in East Anatolia by Molecular methods" was subscribed to during 2002 by IAMB, University of Bari and University of Van (Turkey) and approved for funding in the framework of the bilateral co-operation between Italy and Turkey (CNR-TUBITAK);
- in the frame of the study DG1-EU/CIHEAM "Production and exchange of virus-free plant propagation material in the Mediterranean region", MNFTV has contributed actively to the preparation and editing phase of the work;
- organization in Marrakech (Morocco) from 11-13 December 2002 of the Joint Workshop EPPO/CIHEAM on "Phytosanitary inspection of nurseries" with the participation of European and Mediterranean countries.

SCIENTIFIC CONTRIBUTIONS

The research results of the network have been presented in many national and international conferences, seminars or workshops on stone fruit diseases, and are already published in several specialized journals. The list of MNFTV publications prepared during 1995-2002 is given in the annexes. However, a first description of MNFTV activities and its contributions was reported in the Proceedings 1995-1997, published in *Options Méditerranéennes*, series B 19, CIHEAM/IAMB 1998. The publication of this new issue 2003 is an effort to gather some of the latest contributions, mainly from the last two technical network meetings.