



06-12807

## EPPO/FAO Workshop How to manage invasive alien plants: The case study of *Solanum elaeagnifolium*

Sousse, TN, 2006-05-29/31

### **Conclusions and recommendations**

Workshop organized by the European and Mediterranean Plant Protection Organization and the Food and Agriculture Organization – Sub-regional Office for North Africa (SNEA)-Tunis, under the auspices of the Tunisian Ministry of Agriculture and Hydraulic Resources and the Superior National School of Horticulture and Breeding of Chott-Mariem.

The Workshop recognized that *Solanum elaeagnifolium* is an invasive alien plant of economic importance threatening Mediterranean agro-ecosystems. It was considered that this plant has not reached its geographical distribution limits and presents a threat for southern and south-eastern countries of the EPPO region.

The participants (annex 1) exchanged information on the status of the plant in the region, its pathways for introduction and its control (annex 2). They also had the opportunity to observe the plant in infested areas in the field in the Kairouan and Sousse Gouvernorats.

The Workshop made the following recommendations:

#### **International measures**

##### *Phytosanitary measures to avoid the introduction of S. elaeagnifolium*

The Workshop took note of the Pest Risk Analysis (PRA) elaborated by the EPPO Panel on Invasive Alien Species. It also took note of the proposal made to add this plant to the EPPO List of Pests recommended for regulation to the 47 Members Countries. This proposal will be made at the next Working Party on Phytosanitary Regulation (2006-06-19/22). Risk management measures identified while performing the PRA have been discussed. The PRA has been adjusted in the light of technical and scientific information presented during the Workshop.

##### *Regional and international collaboration*

The Workshop underlined the need to strengthen regional and international collaboration (in particular through FAO programmes for technical assistance) in order to facilitate the information sharing necessary to better prevent and manage the risks presented by this pest.

The South-African “Working for Water” initiative, which mobilized thousands of unemployed people, was cited as an example of good practice while reference was also made to the European Strategy on Invasive Alien Species and to the Mèze Declaration.



## **National measures**

The Workshop drafted the following recommendations concerning national measures:

- A national technical committee on *S. elaeagnifolium* coordinated by the National Plant Protection Organization should be established and should include all sectors concerned (e.g. representatives from government departments for transports, water management, management of the environment, research, and representatives from other relevant sectors). This committee will perform the following roles:
  - o to establish, follow up and evaluate a national action plan against *S. elaeagnifolium*,
  - o to facilitate communication between different stakeholders at national and local levels,
  - o to propose, when appropriate, official control measures,
  - o to propose research programmes,
  - o to follow up regional and international cooperation actions.

The National Action Plan should include:

- The conducting of an annual delimiting survey (according to the International Standard for Phytosanitary Measures no. 6 "Guidelines for surveillance"). This survey will aim to determine:
  - o areas in which outbreaks are limited and where eradication may be considered,
  - o areas where management measures aiming at limiting plant impacts and preventing its spread to other areas have to be undertaken.
- The establishment of warning and training programmes for agricultural technicians, farmers, shepherds (in particular with the FAO programme Farmer Field School or FFS). Vegetable growers should be warned about the risk presented by *S. elaeagnifolium* as a reservoir of other pests such as Potato Virus Y (PVY) or Tomato Yellow Leaf Curl (TYLC).

The management measures recommended for infested areas are:

### *Mechanical control*

- ploughing infested areas before fructification in order to pull propagules to the surface so that they will dry out,
- manual weeding,
- repeated mowing to weaken the plant and avoid fructification.

### *Cultural control*

- rotation with cover crops such as *Medicago sativa* and *Mentha viridis*.

### *Chemical control*

- the use of non selective systemic herbicides on road sides, in fallow fields and in orchards.
- the use of selective systemic herbicides.

### *Biological control*

Currently, there is no biological control programme against *S. elaeagnifolium* in the European and Mediterranean region. Several orders of insects and nematodes are referred to in the literature as natural enemies of *S. elaeagnifolium* in its native range. Some have been evaluated as biological control agents in other countries (South Africa, USA, Australia).

Measures recommended in very infested areas in order to prevent further spread of *S. elaeagnifolium* are:

- to eliminate *S. elaeagnifolium* plants situated in strategic points for spread such as irrigation ditches<sup>1</sup>, roads and wadies by destroying dried plants with fruits (e.g. by collecting and burning or by composting),
- to avoid using manure likely to be contaminated by seeds or viable underground parts of *S. elaeagnifolium*, or to only use the manure when well decomposed,
- to avoid grazing sheep in infested places when *S. elaeagnifolium* is in its maturation period,
- to avoid moving sheep between contaminated and non-contaminated zones, or to hold sheep at least 48 hours in a non-contaminated place before moving them to an area free from *S. elaeagnifolium* and only use the manure when well decomposed,
- to survey areas of high sheep concentrations (livestock markets), and only use the manure when well decomposed,
- to clean agricultural machinery following use in contaminated areas; organize farm work by beginning with non infested plots.

Eradication measures for low infestation areas are:

- to delimit the areas of concern (cf. delimiting survey),
- to eradicate all new outbreaks quickly by implementing the measures recommended in the previous "management section" for a minimum period defined by the National Plant Protection Organization. The eradication programme has to follow the International Standard for Phytosanitary Measures no. 9 "Guidelines for pest eradication programmes". Regular surveys of these areas should be organized before fructification.

The Workshop also identified the need for deeper knowledge about the following topics:

- the effects of composting on *S. elaeagnifolium* seeds,
- biological control,
- efficient and cost-effective herbicides,
- integrated control strategy.

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<sup>1</sup> The setting up of filters on irrigation ditches will help to prevent the spread of the plant.

## Liste des participants

### Annexe 1

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# Programme of the Workshop

## Annexe 2

**Monday 29th May / Lundi 29 mai**

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### **Morning / Matin 9:00-13:00**

Opening and welcome / *Ouverture et mots de bienvenue*

#### **GENERAL CONTEXT / CONTEXTE GENERAL**

Invasive species in an international context: IPPC, CBD, European Strategy on Invasive Alien Species and existing legislation / *Les plantes envahissantes dans le contexte international : IPPC, CBD, Stratégie Européenne sur les Espèces Exotiques Envahissantes et législation existante*

*Clare Shine, Council of Europe, UICN*

Presentation of EPPO / *Présentation de l'OEPP*

*Françoise Petter, EPPO*

Biology, distribution and impact of Silverleaf nightshade (*Solanum eleaeagnifolium* Cav.) / *Biologie, répartition et impacts de la morelle jaune (Solanum eleaeagnifolium Cav.)*

*Mounir Mekki, Tunisia*

*Solanum eleaeagnifolium*, a source of Potato Virus Y (PVY) propagation / *Solanum eleaeagnifolium: une source de propagation pour le Potato Virus Y (PVY)*

*Sonia Boukhris-Bouhachem, Tunisia*

#### **AN ASSESSMENT OF SOLANUM ELAEAGNIFOLIUM IN NORTH-AFRICAN COUNTRIES / ETAT DES LIEUX DE SOLANUM ELAEAGNIFOLIUM DANS LES PAYS NORD-AFRICAIN**

Management of the spread of Silverleaf nightshade (*Solanum eleaeagnifolium* Cav.) in Kairouan governorat / *Maîtrise de la propagation de la morelle jaune (Solanum eleaeagnifolium Cav.) au gouvernorat de Kairouan*

*Ezzeddine Chalhaf, Tunisia*

State of infestation and harmfulness of *Solanum eleaeagnifolium* in Morocco / *Etat actuel de l'infestation par la morelle jaune (Solanum eleaeagnifolium Cav.) au Maroc*

*Abdelkader Taleb, Morocco*



**Afternoon / Après-midi 15:00-19:00**

**EPPO PEST RISK ANALYSIS / L'ANALYSE DE RISQUE PHYTOSANITAIRE DE L'OEPP**

Presentation of the EPPO decision support scheme on Pest Risk Analysis / *Présentation du schéma d'aide à la décision pour l'analyse de risque phytosanitaire de l'OEPP*

*Sarah Brunel, EPPO*

Pest Risk Analysis of *Solanum elaeagnifolium* performed by the EPPO Panel on Invasive Alien Species / *Analyse de risque phytosanitaire de Solanum elaeagnifolium réalisé par le Groupe d'experts de l'OEPP sur les Espèces Exotiques Envahissantes*

*Gritta Schrader, Germany, Zdenek Chromi, Czech Republic and Istvan Dancza, Hungary*

**EXPERIENCES WITH MANAGEMENT METHODS / EXPERIENCES DE METHODES DE GESTION**

Strategy of chemical control against Silverleaf nightshade (*Solanum elaeagnifolium* Cav.) / *Stratégie de lutte chimique contre la morelle jaune (Solanum elaeagnifolium Cav.) au Maroc*

*Yahya Baye, Morocco*

Potential for classical biological control of Silverleaf nightshade in Mediterranean Europe / *Potentiel pour le control biologique classique de la morelle jaune en Méditerranée française*

*René Sforza, USA*

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**Tuesday 30th of May / Mardi 30 mai**

Field trip to see invasive plants / *Journée de terrain sur les plantes envahissantes*  
*Organized and led by Mounir Mekki, with the help of the Ecole Supérieure d'Horticulture et d'Elevage de Chott-Mariem*

20:00: Official dinner in Sousse offered by the Tunisian Ministry of Agriculture and Hydraulic Resources / *Dîner officiel offert par le Ministère Tunisien de l'Agriculture et des Ressources Hydrauliques*

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**Wednesday 31st of May / Mercredi 31 mai**

- Round-tables (1h30) / *Tables rondes (1h30)*
  - Adjustment of the EPPO Pest Risk Analysis on *S. elaeagnifolium* / *Ajustement de l'ARP de l'OEPP sur S. elaeagnifolium*
  - Elaboration for a regional strategies for fighting *Solanum elaeagnifolium* / *Elaboration d'une stratégie régionale pour combattre Solanum elaeagnifolium*
- Poster Session / *Session poster*