Decision support scheme conducted for *Solanum elaeagnifolium* in France

Part A: Key information and selection of measures
A1. Basic information

A1.1 - Pest common name
Morelle jaune

A1.2 - Scientific name
Solanum elaeagnifolium

A1.2b - Indicate the type
weed

A1.3 - Stage(s) of the life cycle present
Plant with rhizomes and seeds.

A1.4 - Location (attach maps if available)

In Vic la Gardiole in the Hérault department, région Languedoc Roussillon in France.

A1.5 - Habitat type
Road side, wasteland.

A1.6 - Hosts
Comment: this question is not valid for a plant. Should it be grouped with A1.5? Do you also ask the question of the habitat type for a classical pest?

A1.7 - Is a pest risk assessment already available for this or a closely related organism? (Please indicate in justification: reference,risk assessor, date, institute, country, and whether it is appropriate to this particular case?)
yes
EPPO PRA

A1.8 - Is a contingency plan already available for this or a closely related organism? (Please indicate in justification: reference,risk assessor, date, institute, country, and whether it is appropriate to this particular case?)
no

A2. Key factors to consider based on the current situation
A2.1 - What is the extent of the infested area(s)?
Very small
Level of uncertainty: low
The size of the population appears to be quite small.
The outbreak may be present over around 1500 m².

A2.2 - What is the size of the outbreak population(s)
Very small
Level of uncertainty: low
About 200 plants approximately.

A2.3 - What is the reproductive capability of the current population?
Large
Level of uncertainty: low
The species reproduces both vegetatively by rhizomes and sexually by seeds.
The population has been followed between 2005 and 2010 and has increased in size.

A2.4 - What is the natural spread capacity of the organism/current population?

Medium
Level of uncertainty: low
The plant itself with seeds may be spread by strong winds, like a thumbleweed.

A2.5 - What is the spread capacity of the organism/current population due to human activity?
Medium
Level of uncertainty: low
Rhizome may be spread with the movement of soil.

A2.6 - How easy is the organism to detect?
Easy
Level of uncertainty: low
The species has dinstinctive flower and leaves. It is more visible in April when the vegetative parts are growing.

A2.7 - How easy is the organism to identify?
Easy
Level of uncertainty: low
The species is now known by the NPPO. It has distinctive charateristics from other Solanum spp. (spines, hairy leaves, etc.)

A2.8 - How long has the species been present?
more than one year
Level of uncertainty: low
The species has first been detected around 2003.

A2.9.1 - [Economic damage] What damage is the pest currently causing?
Minimal
Level of uncertainty: low
The species did not reach yet unintended habitats where it could have a detrimental impact as it is currently occuring in a wasteland, but it is close tyo vegetables fields.

A2.9.2 - [Environmental damage] What damage is the pest currently causing?
Minimal
Level of uncertainty: low
None recorded so far.

A2.9.3 - [Social damage] What damage is the pest currently causing?
Minimal
Level of uncertainty: low
None

A3. Additional key factors to consider based on the risk assessment
A3.1 - How likely is it that subsequent introductions of the organism may occur?
Medium
Level of uncertainty: low
It is unknown how the species was introduced into this location, and there might be other unreported outbreaks of the species.
The species was also present near Marseille and has been eradicated. In Addition, the species is occuring in many other Mediterranean countries: Spain, Croatia, etc.

A3.2.1 - [Economic damage] What is the damage potential of this pest?
Major
Level of uncertainty: low
The species is known to be a weed in orchards and arable lands. In maize, it can decrease yields up tu 50% without control measures in Morocco (see PRA).

A3.2.2 - [Environmental damage] What is the damage potential of this pest?

Moderate
Level of uncertainty: low
The species may colonize protected grasslands, as it was the case where it was eradicated near Marseille.

A3.2.3 - [Social damage] What is the damage potential of this pest?
Moderate
Level of uncertainty: low
When it invades areas, the species decreases the value of the land. decreases of up to 30% have been recorded in the USA.

A3.3 - How large an area is still available for colonization?
Very large
Level of uncertainty: low
The whole south of France could be suitable for the species. So far, only one outbreak is reported (the other one has been eradicated).

A3.4 - Uncertainty summary based on the current situation and the risk assessment

NB: Larger points (bubbles) on the chart represent greater uncertainty

A4. Definition of the risk management area

A4 - Define the risk management area to be considered in this assessment. I.e. the area beyond the immediate outbreak defined in A1.4.
The area beyond the immediate outbreak.
Further monitoring around this area may be needed to detect any other outbreak around this point.
Level of uncertainty: low

A5. Feasibility of eradication, containment or suppression

A5 - Based on the current situation and the information from the risk assessment, is it already clear that no action is appropriate? If yes: justify your decision to take no action
If no or uncertain: continue by selecting and evaluating appropriate measures.
No
Level of uncertainty: low
Action is needed.

A6. Selection of measures

A6 - List the eradication containment or suppression measures that may be appropriate for the pest in the current situation. Select from the proposed list or enter other candidate measures(free-text)

- Selective herbicides
- Digging up

Part B: Comparison of measures
B1. Comparing the attributes of different risk management measures to determine their applicability in the current situation
Scoring matrix for comparing the attributes of different risk management measures to determine their applicability in the current situation

Selective herbicides

B1.1a - Objective
Eradication

B1.1 - What is the likelihood that the measures will be successful?
likely
Level of uncertainty: medium
There is a need to control the efficiency of the measure over the year, and to reaply herbicide on any new resprout of the species.

B1.2 - How long will this management measure take to be successful?
more than one year
Level of uncertainty: low
Follow up needed.

B1.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?
Easy
Level of uncertainty: low
It requires phytosanitary products and agents.

B1.4 - How high are the direct costs of the management measure?
Minor
Level of uncertainty: low
It costs the phytosanitary product and the time of agent to apply the product, but it may be over several years.
Shall the time of the agents of the NPPO be taken into account. How should time be taken into account ?

B1.5 - How high are the indirect costs of the management measure?
Minor
Level of uncertainty: low
Need to define what are direct costs and indirect costs.
I do not know what to include here....

B1.6 - How high are the environmental impacts?
Moderate
Level of uncertainty: low
The habitat is not protected, but there is a water course not far, and the products may agregate there and have an impact on aquatic species and onn water quality.

B1.7 - How acceptable is the measure likely to be to the public?
Minor opposition
Level of uncertainty: low
The eradication of a noxious plant could also be advertise in a good way.

B1.8 - Uncertainty summary for proposed measure

NB: Larger points (bubbles) on the chart represent greater uncertainty

Digging up

B1.1a - Objective
Eradication

B1.1 - What is the likelihood that the measures will be successful?
very unlikely
Level of uncertainty: medium
There are many plants over the infested area, to dig efficiently, the whole root system would need to be removed, and it can be 3 m deep.

B1.2 - How long will this management measure take to be successful?
more than one year
Level of uncertainty: low
As for the herbicide treatment, there would be a need to check the follwoijg year that no plant has been forgotten.

B1.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?
With some difficulty
Level of uncertainty: medium
This measure would imply several big holes in road sides, but alos on private land. Land owners might enot appreciate this measure.

B1.4 - How high are the direct costs of the management measure?
Minor
Level of uncertainty: low
This would require the work from an engire to make such holes. This could be made in 2 or 3 days.
B1.5 - How high are the indirect costs of the management measure?
Minor
Level of uncertainty: medium
Would require a lot of discussions with landwoners.

B1.6 - How high are the environmental impacts?
Minimal
Level of uncertainty: low
The hoel would only be made in road sides, wasteland, this is to say areas that have no environmenal value.

B1.7 - How acceptable is the measure likely to be to the public?
Moderate opposition
Level of uncertainty: low
Landowners could ooppose this measure.

B1.8 - Uncertainty summary for proposed measure

NB: Larger points (bubbles) on the chart represent greater uncertainty

B1.9 - Scoring matrix for comparison of candidate measures

Measures available	Objective	Efficacy			Costs		Acceptability and safety	
		B1.1 - What is the likelihood that the measures will be successful?	B1.2 - How long will this management measure take to be successful?	B1.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?	B1.4 - How high are the direct costs of the management measure?	B1.5 - How high are the indirect costs of the management measure?	B1.6 - How high are the environmental impacts?	B1.7 - How acceptable is the measure likely to be to the public?
selective herbicides	Eradication	likely	more than one year	Easy	Minor	Minor	Moderate	Minor opposition
digging up	Eradication	very likely	more than one year	With some difficulty	Minor	Minor	Minimal	Moderate opposition

Legend

greater likelihood of success/lower cost/fewer confounding issues				lower likelyhood of success/high cost/many confounding issues

Part B: Comparison of measures B2. Detailed evaluation of the most appropriate scenario
The questions are considered again, but in the context of the final, selected strategy, i.e. the package of measures for action.

B2.0 - Strategy (may include a combination of measures selected from B1):
Use of chemical treatment
in addition, a monitoring is needed the following year.
A campaign on the eradication action would be useful to raise awareness.
a wider monitoring of the species in the region is also recommended.

B2.1 - What is the likelihood that the measures will be successful?
likely
Level of uncertainty: low
But a careful monitoring is needed.

B2.2 - How long will this management measure take to be successful?
less than one month
Level of uncertainty: low
For the monirtoting the following year that the species regrow.

B2.3 - How difficult will it be to apply this measure taking into account enforcement, resources and operational factors?
With some difficulty
Level of uncertainty: low
These are new measures, there is a need of dialogue. There are aslo many actors involved (private woner, NPPOO, departmental, national raod management), and discussion with all of them needed.

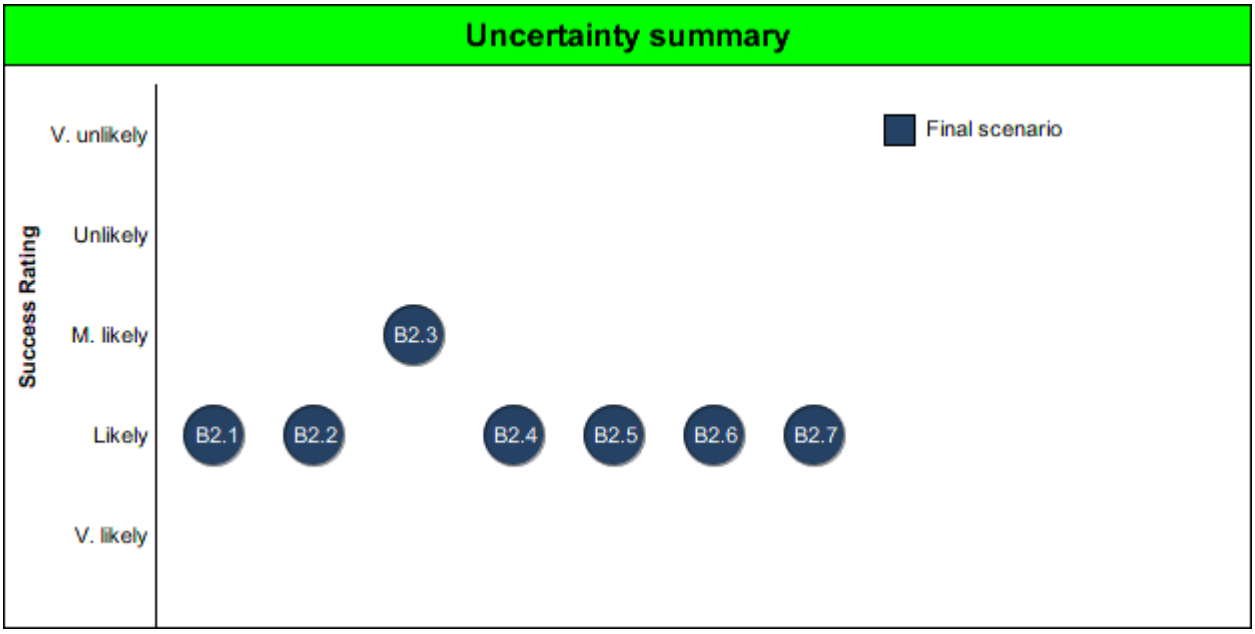
B2.4 - How high are the direct costs of the management measure?
Minor
Level of uncertainty: low

B2.5 - How high are the indirect costs of the management measure?
Minor
Level of uncertainty: low
Indirect costs: media campaign, further followup of the plant through networks of existing reporters.

B2.6 - How high are the environmental impacts?
Minor
Level of uncertainty: low
Only the measure itself has an impact, the other proposal have no impact (I therefore lowered the final assessment, is it right)?

B2.7 - How acceptable is the measure likely to be to the public?
Minor opposition
Level of uncertainty: low
This measure could be an opportunity to change people perception and promote eradication actions on plants.
From the experience in Marseille, this was well accepted.

B2.8 - Uncertainty summary for final strategy



NB: Larger points (bubbles) on the chart represent greater uncertainty

B3. Detailed analysis and justification of selected measure(s)

B3 - Describe which measure or combination of measures you propose for eradication, containment and suppression and why you have chosen this strategy. If you consider that more than one strategy would be viable, these options should be evaluated to help the decision-makers. Also describe why other potential options are not considered to be viable. In most cases, the merits of the optimal strategy or strategies can be best illustrated by comparing them with an evaluation of no action and the most stringent action, e.g. crop or habitat destruction.

During outbreak situations and when situations are changing, it is important to review the scheme and your justification accordingly.

Use of phytosanitary product with a monitoring of the area in the following 3 years.
General surveillance for this plant around the area and in the whole region
Media campaign during the eradication.