LIFE Alta Murgia project

As part of the LIFE+ Biodiversity programme (financial instrument established by the European Commission to provide specific support to halt the loss of biodiversity), the four-year LIFE Alta Murgia project has the objective to eradicate the invasive exotic tree species *Ailanthus altissima* from the Alta Murgia National Park, which is fully included in the SCI/SPA IT9120007 Alta Murgia.
Innovative techniques with low environmental impact will be used, in order to reduce ailanthus spread and negative impact within the protected area, preserve and restore natural habitats from woody invasive species colonization.

AILANTHUS AND BIODIVERSITY

Ailanthus altissima (Mill.) Swingle (family: Simaroubaceae) is a highly invasive tree species native to Eastern Europe, abundantly present in European countries where, because of its outstanding adaptability to the most diverse climatic conditions and its resistance to air pollution, it can be considered a pioneer species. It grows spontaneously very quickly and vigorously and it reproduces both by seed and vegetatively. One plant can produce up to 300,000 dry fruits (samaras) per year and its extensive, strong, and hardly eradicable root system is able to generate numerous suckers originating progeny plants. It grows at the edge of and within forests, in grasslands, fallows and close to farm buildings. It also colonizes ruderal, urban, and industrial areas, roadsides and railway ballast. Ailanthus is very competitive with native species, being very resistant and fast growing. The plants invade natural areas forming very dense monospecific stands that shade the native species reducing or preventing their growth, thus leading to a strong biodiversity reduction. This effect is also due to the ability of the roots to release allelopathic compounds able to inhibit the development of other woody and herbaceous species.
Invasive alien species such as ailanthus are the second leading cause of biodiversity loss after the disappearance of natural habitats. They must therefore be eradicated in order to avoid altering natural habitats and stealing space to native species.
Due to its ability to spread, ailanthus is very difficult to control.

PREVENTING THE SPREAD

- Avoid to introduce ailanthus or other invasive alien species for any purposes, also ornamental, both in urban and suburban areas, rather favor native species.
- For those activities involving soil moving, avoid if possible the use of soil coming from areas outside the Park as it could contain seeds belonging to invasive species.
- Promote control actions also in the surroundings of the main protected area.
- Firstly remove plants with inflorescences or fruits using the methods described below.

MANAGEMENT OF INFESTED AREAS

- Avoid cutting: ailanthus reacts by producing numerous sprouts, thus increasing the infestation level.
- Hand-pull the seedlings growing from seeds with their whole root in the very early stages of development.
- Use the treatment methods described below, which consist of mechanical interventions followed by localized applications of a broad-spectrum systemic herbicide (glyphosate). Treatments must be carried out from late spring to autumn. Late summer or autumn treatments are the most effective to kill suckers and roots, as the downward lymphatic flow is maximum.

The application of the herbicide should be performed only by licensed personnel and in compliance with the regulations. Moreover, protective devices have to be worn as plants can cause skin irritation.

TREATMENT METHODS

To eradicate ailanthus, the herbicide shall be applied through localized low-volume treatments to avoid herbicide dispersal in the environment. Spray treatments on foliage must be avoided. The most suitable application techniques are the following:

1. cut stumps: cut the trunk at its base and apply the herbicide on the fresh cut surface; cut the timber into pieces and remove them from the ground to avoid resprouts;
2. spaced cuts with sponge: make downward 3-cm cuts spaced around the stem and insert in each one small piece of sponge on which to apply 2-3 ml of the specific herbicide by a syringe;
3. injection: make one deep downward drill hole at the base of the trunk every 15 cm of circumference, and fill it with the herbicide by a syringe;
4. endotherapy (for big plants): it is commonly practiced for tree care by qualified staff, but it can be performed for herbicidal purposes through localized injections into the trunk. Specific equipment for endotherapy is required.

Because of the resprouting capacity of the species, it is essential to monitor the effectiveness of treatments over time and to repeat the treatment if necessary. If plants are dead and do not generate new shoots in the following vegetative season, then they can be cut and removed.

Ailanthus altissima


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2


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4


5


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1) Ailanthus tree
2) Particular of the leaf
3) Dry fruits (samaras)
4) Inflorescence
5) Leaves
6) Branches bearing samaras
7) Leaf scars on young branches


7

Control and eradication of the invasive exotic plant species
Ailanthus altissima in the Alta Murgia National Park
LIFE12 BIO/IT/000213

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GUIDELINES FOR AILANTHUS CONTROL

PROJECT
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