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## CONTROL OF *AILANTHUS ALTISSIMA* IN A NATURAL ENVIRONMENT

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*Ailanthus altissima* (Mill.) Swingle (commonly named tree of heaven, family: Simaroubaceae) is a very dangerous invasive plant species. The invasiveness of this dioecious species is due to its ability to reproduce, equally well, both by seed (one plant can produce thousands of "flying" samaras) and asexually (its extended and vigorous root system generates numerous suckers and progeny plants). The species is able to adapt to any type of soil and water regime. It spreads everywhere in urban and sub-urban areas, on roadsides, railways and ruins, in uncultivated or abandoned areas, gardens and green spaces. *A. altissima* plants reach the heart of natural areas causing severe ecological effects. Plants form highly dense stands outcompeting native species and reducing their growth. Thus this species represents a serious threat both in natural and anthropic areas.

The management of *A. altissima* is very difficult. The most common methods include manual, mechanical and chemical control. Hand pulling can be carried out only on very young seedlings before the root system has developed. Mechanical removal (cut) is the most used technique in public areas but proved to be costly and quite ineffective, as it induces a faster development of suckers and resprouting shoots. Moreover, in urban and archeological areas the use of mechanical equipment can be very dangerous or even not practicable. Spray treatments of herbicides are frequently not allowed in urban and natural areas due to health and environmental risks.

The Alta Murgia National Park is a very wide Park (over 68,000 ha) located in the Apulia Region (Southern Italy). It is a Site of Community Importance (SCI) and a Special Protection Area (SPA) within the EU Natura 2000 network. Within the Park, *A. altissima* is the most spread invasive plant species, and it is considered one of the most serious threat for the biodiversity.

A project named "LIFE Alta Murgia" was funded in 2013 by the European Commission within the LIFE+ Framework, aimed at eradicating *A. altissima* from the Alta Murgia National Park by using innovative and eco-friendly control techniques, based on a minimized use of effective herbicides with environmentally friendly stem applications (e.g. stem injection, cut stump, spaced cut). In order to accurately take a census, map and quantify the infestation in the whole park, plan the interventions, manage the control program and check the progresses of the management practices, a *ad hoc* software was initially developed.

In the present communication the procedures used and the results obtained in the weed mapping will be shown. Moreover, the first results regarding the control treatments and their effectiveness will be presented.