**Evergreen tree, with greenish-grey bipinnate leaves and bright yellow spherical flower heads.**

**Scientific name:** *Acacia dealbata* Link.

**Common names:** silver wattle, mimosa, blue wattle

**Family:** *Fabaceae* (*Leguminosae*)

**Status in Portugal:** invasive species (listed in the annex I of Decreto-Lei n° 565/99, 21 December)

**Risk Assessment score:** (in development)


**Last update:** 30/06/2014

**How to recognise it**

Tree up to 15m, with a smooth, greyish rhytidome.

**Leaves:** evergreen, greenish-grey, bipinnate, with 10-26 pairs of pinnae, which in turn have 20-50 pairs of leaflets, these with 2.5 x 0.4-0.7 mm; central rachis of the leaf with glands at the junction of each pinnae pair.

**Flowers:** bright yellow arranged in in globular flower heads of 5-6 mm diameter, forming large panicles.

**Fruits:** brownish-red pods, compressed, pruinose, ± constricted between the seeds.

**Flowering:** January to April.
**Similar species**

*Acacia mearnsii* (black wattle) is similar, but has glands irregularly distributed along the rachis, darker green leaves, later and paler flowering, and pods constricted between the seeds. *Acacia decurrens* Willd. (green wattle) is also similar but is has winged twigs, almost glabrous and the leaflets are very separated between themselves (larger that its width), glabrous.

**Characteristics that aid invasion**

It propagates vegetatively, forming vigorous sprouts from the stump or roots after being felled. It also reproduces by seed, producing many seeds that accumulate in numerous seed banks and remain viable in the ground for many years. The seeds are dispersed by animals, mainly birds and ants, and sometimes by strong winds which lead to the formation of dispersed and/or far away invasion foci from the invaded areas. Most propagules, however, accumulate underneath the tree, forming a numerous seed bank. It germinates aggressively after fires.

**ORIGIN AND DISTRIBUTION**

**Native distribution area**

Southeast Australian states of New South Wales, Victoria and Tasmania.

**Distribution in Portugal**

Mainland Portugal (all provinces), Madeira archipelago (Island of Madeira).

**Other places where the species is invasive**

Europe (France, Spain, Italy, Turkey), South Africa, New Zealand, western USA (California), Asia (India, Sri-Lanka), South America (Argentina, Chile), Madagascar.

**Introduction reasons**

For ornamental purposes. It has also been cultivated for soil improvement and as a forestry species.

**Preferential invasion environments**

Fresh terrains of the valleys, mountainous areas and banks of watercourses and roadsides. It mainly invades after fires.

**IMPACTS**

It is considered as one of the worst invasive species of terrestrial ecosystems in mainland Portugal.

**Impacts on the ecosystems**

It forms very dense thickets, inhibiting the development of native vegetation, reducing the flow of watercourses and enhancing some erosion problems.

It has allelopathic effects, inhibiting the development of other species.
**Acacia dealbata** (silver wattle)

It produces a lot of litter rich in nitrogen, promoting change in soil that may have negative effects in the development and survival of native species, and simultaneously, favour the development of *A. dealbata* and/or other invasive species.

**Economic impacts**

Reduction of productivity.

Expensive control methodologies.

**Other impacts**

Allergies.

**Natura 2000 network habitats more subject to impacts**

- Alluvial forests with *Alnus glutinosa* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) (91E0);
- Riparian mixed forests of *Quercus robur*, *Ulmus minor* and *Fraxinus angustifolia* along the great rivers (91F0);
- *Salix alba* and *Populus alba* galleries (92A0);
- Riparian formations on intermittent Mediterranean water courses with *Rhododendron ponticum*, *Salix* and others (92B0);
- Rivers with muddy banks with *Chenopodion rubri* p. p. and *Bidention* p. p. vegetation (3270);
- Arborescent matorral with *Laurus nobilis* (5230);
- Thermo-Mediterranean and pre-desert scrub (5330);
- Galicio-Portuguese oak woods with *Quercus robur* and *Quercus pyrenaica* (9230);
- *Quercus faginea* and *Quercus canariensis* Iberian woods (9240);
- *Quercus suber* forests (9330).

**CONTROL**

Controlling an invasive species demands a well-planned management, which includes the determination of the invaded area, identifying the causes of invasion, assessing the impacts, defining the intervention priorities, selecting the adequate control methodologies and their application. Afterwards it is fundamental to monitor the efficiency of the methodologies and recuperation of the intervened area as to perform, whenever necessary, the follow-up control.

The control methodologies used for *Acacia dealbata* include:

**Physical control**

**Hand pulling:** preferential methodology for seedlings and small plants. When in more compacted substrates, pulling must be made during the rainy season as to facilitate the removal of the root system. It should be guaranteed that no roots of large dimensions are left behind in the ground.

**Cutting with brushcutter:** preferential methodology for plants resulting from the germination that are still very small. It should just be applied on warm days as long as the security conditions are respected.

**Ring-barking:** preferential methodology for adult plants with a smooth, unwounded bark. Make a continuous ring incision around the trunk, at the height most comfortable for the operator, and remove
**Acacia dealbata (silver wattle)**

all the bark and vascular cambium until the ground surface, if possible, until the root. It should be applied only when the vascular cambium is active, which may vary from place to place; the best seasons for this technique coincide with warm temperatures and some humidity.

### Physical + chemical control

**Cut stump method:** apply to adult plants. Cut the trunk as close to the ground as possible and immediately (in the following seconds) apply herbicide (active substance: glyphosate) to the stump surface. If shoots should latter on appear, these should be immediately eliminated through cutting, pulling or foliar application of herbicide (active substance: glyphosate); up to 25 to 50 cm high. Shoots of larger dimensions (from 2-3 cm diameter) may be ring-barked or else should be repeated the initial methodology (cut stump method).

### Chemical control

**Foliar application of herbicide:** over recent sprouts (25-50 cm tall) or when high germination rates occur. Spray with herbicide (active substance: glyphosate) limiting as much as possible its application to the target species.

**Tree injection:** applied to adult plants. Apply the herbicide directly on the vascular system of the plant with one of the following techniques:

- **Cut + injection:** Make several cuts (with an axe or saw), at the height most convenient to the operator, in an angle of 45° until the sapwood, and immediately inject (in the following seconds) the herbicide in each incision with a squirt. Apply around 1ml (0,5 to 2ml, according to the size of the cut) of herbicide in each incision. The several cuts should be made at the same height on the trunk as to nearly touch, leaving around 2-4 cm of uncut bark between them. For smaller plants, only 2 or 3 cuts are necessary and they shouldn’t be deep (to prevent the plant breaking).

- **Drilling + injection:** drill holes (with a drill) around 10 cm deep around the trunk and in each hole immediately inject (in the following seconds) the herbicide (1 ml) with a squirt. The holes should be made at a height most comfortable to the operator, in a 45° angle (to avoid the herbicide’s runoff) and in intervals of 5-10 cm between them. The number of holes to make depends on the plant’s diameter.

### Biological control

The biological control agent *Melanterius maculatus* Lea (Coleoptera: Curculionidae) was released in South Africa to destroy the seeds; its establishment has been confirmed, although the damage caused to the invasive species hasn’t been confirmed.

Although initial steps for the testing procedure are being made to verify its security relative to native species, this agent has not yet been tested in Portugal, so its use has not yet constituted an alternative in our country.

### Prescribed fire

It may be strategically used to favour germination of the seed bank, e.g., after the control of adult individuals (with the adequate management of the resulting biomass) and the subsequent elimination of seedlings. This methodology provides an advantageous reduction of the seed bank, both by destroying part of the seeds or by stimulating the germination of the remainders.

For additional information, visite the webpage [www.invasoras.pt](http://www.invasoras.pt) and/or contact us at invader@uc.pt.
REFERENCES


