



The leaves are dark green on top and lighter green below.
Photo: USDA-NRCS Plants

Why we need to be 'alert' to *K. elegans* ssp. *formosana*

K. elegans ssp. *formosana* is a problem weed in Japan and the USA, where it has naturalised across five states. The decision to place *K. elegans* ssp. *formosana* on the Australian Alert List was based on this invasive behaviour.

Deliberately introduced to Australia as an ornamental landscape tree, *K. elegans* ssp. *formosana* has 'escaped' cultivation and naturalised. Brisbane City Council indicates that it is invading urban parks, bushland, gullies and streets around Brisbane.

In Lismore, New South Wales, there are several hundred *K. elegans* ssp. *formosana* saplings to 1 m or more in height that appear to have spread from adjacent cultivated specimens. Some of the naturalised plants in this area are even taller and are now reproducing. Due to its rapid growth habit and high seed viability in warmer climates, *K. elegans* ssp. *formosana* may crowd out native plant populations.

The Alert List for Environmental Weeds

The Federal Government's *Alert List for Environmental Weeds* was declared in 2001. It consists of 28 weed species that currently have limited distributions but potentially could cause significant damage. The following weed species are therefore targeted for eradication:

| Scientific name | Common name | Scientific name | Common name |
|--|---------------------|---|-------------------------|
| <i>Acacia catechu</i> var. <i>sundra</i> | cutch tree | <i>Koelreuteria elegans</i> ssp. <i>formosana</i> | Chinese rain tree |
| <i>Acacia karroo</i> | Karoo thorn | <i>Lachenalia reflexa</i> | yellow soldier |
| <i>Asystasia gangetica</i> ssp. <i>micrantha</i> | Chinese violet | <i>Lagarosiphon major</i> | lagarosiphon |
| <i>Barleria prionitis</i> | barleria | <i>Nassella charruana</i> | lobed needle grass |
| <i>Bassia scoparia</i> | kochia | <i>Nassella hyalina</i> | cane needle grass |
| <i>Calluna vulgaris</i> | heather | <i>Pelargonium alchemilloides</i> | garden geranium |
| <i>Chromolaena odorata</i> | Siam weed | <i>Pereskia aculeata</i> | leaf cactus |
| <i>Cynoglossum creticum</i> | blue hound's tongue | <i>Piptochaetium montevidense</i> | Uruguayan rice grass |
| <i>Cyperus teneristolon</i> | cyperus | <i>Praxelis clematidea</i> | praxelis |
| <i>Cytisus multiflorus</i> | white Spanish broom | <i>Retama raetam</i> | white weeping broom |
| <i>Dittrichia viscosa</i> | false yellowhead | <i>Senecio glastifolius</i> | holly leaved senecio |
| <i>Equisetum</i> spp. | horsetail species | <i>Thunbergia laurifolia</i> | laurel clock vine |
| <i>Gymnocoronis spilanthoides</i> | Senegal tea plant | <i>Tipuana tipu</i> | rosewood |
| <i>Hieracium aurantiacum</i> | orange hawkweed | <i>Trianoptiles solitaria</i> | subterranean Cape sedge |

Weed control contacts

| State / Territory | Department | Phone | Email | Website |
|-------------------|---|----------------|----------------------------------|--|
| ACT | Environment ACT | (02) 6207 9777 | EnvironmentACT@act.gov.au | www.environment.act.gov.au |
| NSW | NSW Agriculture | 1800 680 244 | weeds@agric.nsw.gov.au | www.agric.nsw.gov.au |
| NT | Dept of Natural Resources, Environment and the Arts | (08) 8999 2020 | weedinfo.nreta@nt.gov.au | www.nt.gov.au |
| Qld | Dept of Natural Resources and Mines | (07) 3896 3111 | enquiries@nrm.qld.gov.au | www.nrm.qld.gov.au |
| SA | Dept of Water, Land and Biodiversity Conservation | (08) 8303 9500 | apc@saugov.sa.gov.au | www.dwlbc.sa.gov.au |
| Tas | Dept of Primary Industries, Water and Environment | 1300 368 550 | Weeds.Enquiries@dpiwe.tas.gov.au | www.dpiwe.tas.gov.au |
| Vic | Dept of Primary Industries/Dept of Sustainability and Environment | 136 186 | customer.service@dpi.vic.gov.au | www.dpi.vic.gov.au www.dse.vic.gov.au |
| WA | Dept of Agriculture | (08) 9368 3333 | enquiries@agric.wa.gov.au | www.agric.wa.gov.au |

The above contacts can offer advice on weed control in your state or territory. If using herbicides always read the label and follow instructions carefully. Particular care should be taken when using herbicides near waterways because rainfall running off the land into waterways can carry herbicides with it. Permits from state or territory Environment Protection Authorities may be required if herbicides are to be sprayed on riverbanks.

What to do about it

Prevention is better than the cure

As with all weed management, prevention is better and more cost-effective than control. The annual cost of weeds to agriculture in Australia in terms of decreased productivity and management costs is estimated at \$4 billion. Environmental impacts are also significant and lead to a loss of biodiversity. To limit escalation of these impacts and costs, it is vital to prevent further introduction of new weed species, such as *K. elegans* ssp. *formosana*, into natural ecosystems.

Early detection and eradication are critical. Small infestations can be easily eradicated if they are detected early, but an ongoing commitment is needed to ensure new infestations do not establish.

Quarantine to prevent further introductions

Although on the Alert List, *K. elegans* ssp. *formosana* is currently a permitted import. However, importation of the plant to Australia is not encouraged due to its potential to be a serious environmental weed.

Mail order seeds are another potential source of infestation. Do not buy seeds via

the internet or from mail order catalogues unless you check with quarantine first and can be sure that they are free of weeds like *K. elegans* ssp. *formosana*. Call 1800 803 006 or see the Australian Quarantine and Inspection Service (AQIS) import conditions database <www.aqis.gov.au/icon>. Also, take care when travelling overseas that you do not choose souvenirs made from or containing seeds. Report any breaches of quarantine you see to AQIS.

Raising community awareness

Some 65% of weeds, including *K. elegans* ssp. *formosana*, which have recently established in Australia have escaped from plantings in gardens and parks. The detrimental impacts of these weeds far outweigh any potential horticultural benefits. The public should be made more aware of these impacts, and of other issues such as how to identify *K. elegans* ssp. *formosana* and what to do if they find it.



The trunk of *K. elegans* ssp. *formosana* is light brown and smooth when young, but may develop ridges with age.

Photo: USDA-NCRS Plants



If you find a plant that may be Chinese rain tree

Quick reference guide

Identification

You will first need to confirm its identity. Contact your state or territory weed management agency for help in identifying the plant. You will need to take note of the characteristics of the plant in order to accurately describe it. Some important features of *K. elegans* ssp. *formosana* are:

- Leaflets are dark green on top and paler beneath, have irregularly toothed edges, are pointed at one end and rounded at the other, and grow to approximately 90 mm long.
- Numerous yellow flowers to approximately 20 mm, with five petals, occur in branched clusters.

- Each flower has 7–8 pale yellow stamens with hairy white filaments.
- Fruit, to 50 mm long, is papery, inflated, divides into three parts and is light pink to rose pink in colour.
- Seeds are small, black and round.
- The trunk is smooth and light brown when young, and rougher when the tree matures.
- The tree has a dense rounded crown when mature.

Reporting occurrences

Once identified, new occurrences of *K. elegans* ssp. *formosana* should be reported to the relevant state or

territory weed management agency or local council, who will offer advice and assistance on its control. Because *K. elegans* ssp. *formosana* spreads so quickly and poses such a serious threat, its control should be undertaken with the appropriate expertise and adequate resources.

Follow-up work will be required

Once the initial infestation is controlled, follow-up monitoring and control will be required to ensure that reinfestation does not occur.

Collecting specimens

State or territory herbaria can also identify plants from good specimens. These organisations can provide advice on how to collect and preserve specimens.

| State/Territory | Postal Address | Phone | Web |
|--|---|----------------|--|
| Australian National Herbarium | GPO Box 1600 Canberra, ACT, 2601 | (02) 6246 5108 | www.anbg.gov.au/cpbr/herbarium/index.html |
| National Herbarium of New South Wales | Mrs Macquaries Rd Sydney, NSW, 2000 | (02) 9231 8111 | www.rbg Syd.nsw.gov.au |
| National Herbarium of Victoria | Private Bag 2000 Birdwood Avenue South Yarra, Vic, 3141 | (03) 9252 2300 | www.rbg.vic.gov.au/biodiversity/herbarium.html |
| Northern Territory Herbarium | PO Box 496 Palmerston, NT, 0831 | (08) 8999 4516 | http://www.nt.gov.au/ipe/pwcnt/ |
| Queensland Herbarium | c/- Brisbane Botanic Gardens Mt Coot-tha Rd Toowong, Qld, 4066 | (07) 3896 9326 | www.env.qld.gov.au/environment/science/herbarium |
| South Australian Plant Biodiversity Centre | PO Box 2732 Kent Town, SA, 5071 | (08) 8222 9311 | www.flora.sa.gov.au/index.html |
| Tasmanian Herbarium | Private Bag 4 Hobart, Tas, 7000 | (03) 6226 2635 | www.tmag.tas.gov.au/Herbarium/Herbarium2.htm |
| Western Australian Herbarium | Locked Bag 104 Bentley DC, WA, 6983 | (08) 9334 0500 | http://science.calm.wa.gov.au/herbarium/ |

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