



PEST ALERT

DEVIL WEED

(*CHROMOLAENA ODOARATA*)



100



WORLD'S WORST 100

Devil weed is one of the world's worst 100 invasive species. It has caused substantial negative impacts to agriculture in Africa and across the Pacific, taking over pastures and farmlands.



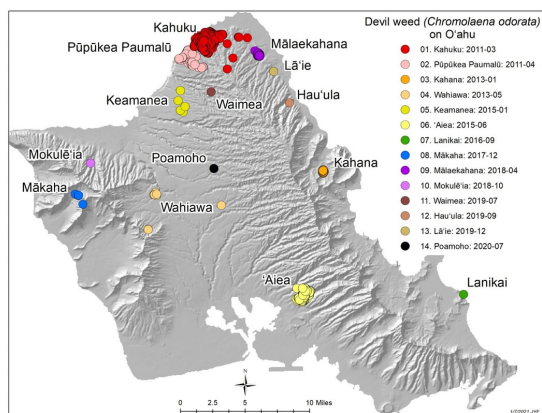
IMPACTS

Reduces crop yield.
Toxic to livestock.
Increases fire risk.
Reduces grazing land.
Skin & respiratory irritants.



REMOVE PLANTS

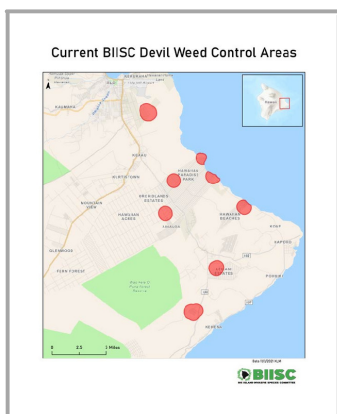
Monitor your pastures, farms and yards for devil weed every 3-6 months. Remove plants and dispose in the trash, NOT GREENWASTE. Removing plants *before* they mature and set seed will diminish the population significantly.



DISTRIBUTION IN HAWAI'I:

ONLY KNOWN TO BE ON THE ISLANDS OF O'AHU AND IN LIMITED AREAS ON HAWAI'I ISLAND.

Devil weed was first detected at the Kahuku Training Area on O'ahu in 2011. Local spread happens quickly once plants mature and seeds are easily blown by the wind. Over the years, long distance introductions have happened by hitchhiking seeds and dispersed by human activity.

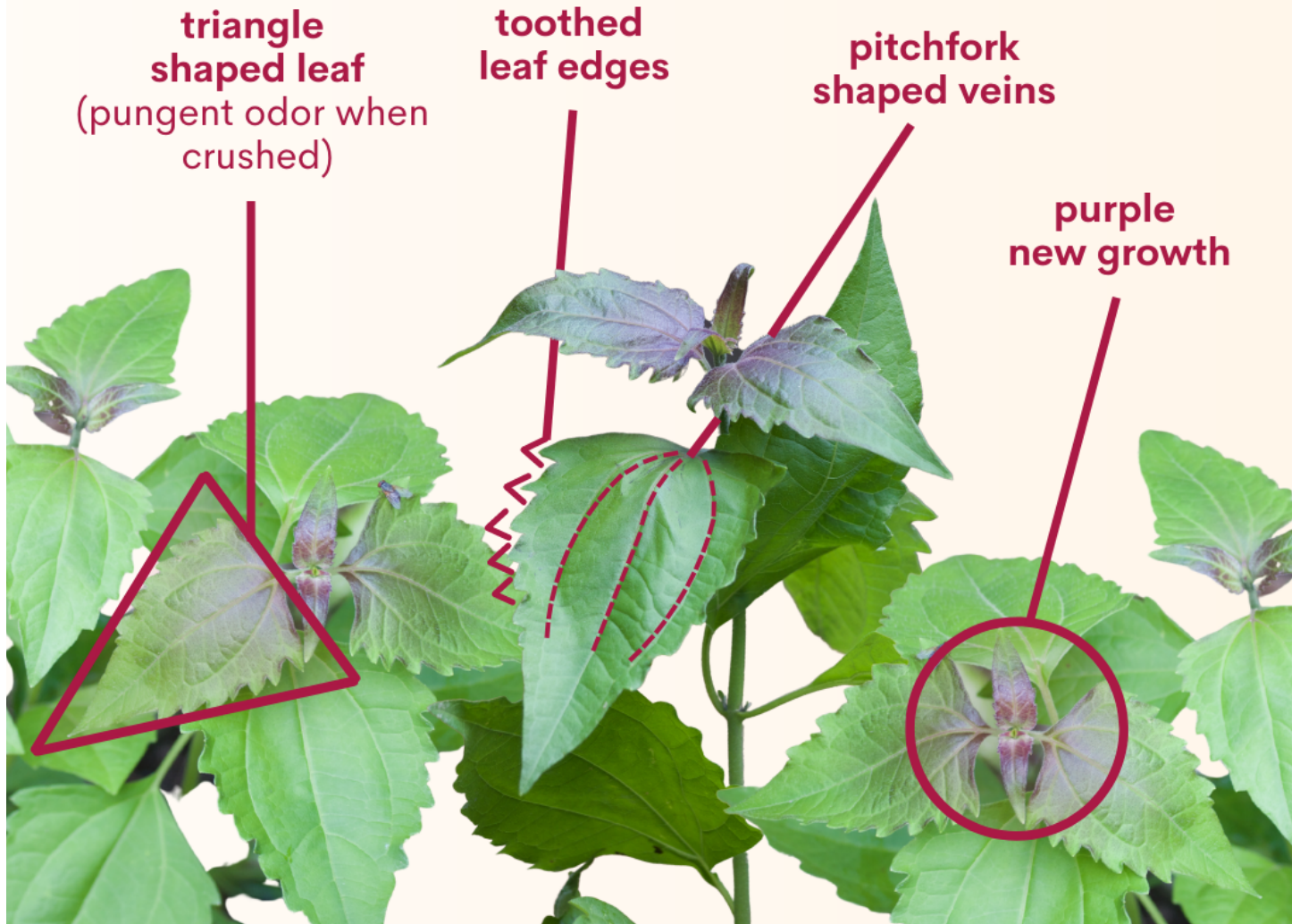


The O'ahu Invasive Species Committee (OISC) and the Army Natural Resources Program-O'ahu continue to manage the earliest infestation locations. However, devil weed on O'ahu has spread beyond existing resources for island-wide eradication.

In February 2021, devil weed was detected in the Puna district and the Big Island Invasive Species Committee (BIISC) is surveying and removing all known populations in an eradication effort.

DEVIL WEED

(Chromolaena odorata)



SUSPECT DEVIL WEED?

**OAHU: EMAIL OR TEXT
PHOTO TO OISC**

EMAIL: oisc@hawaii.edu
TEXT: 808-286-4616

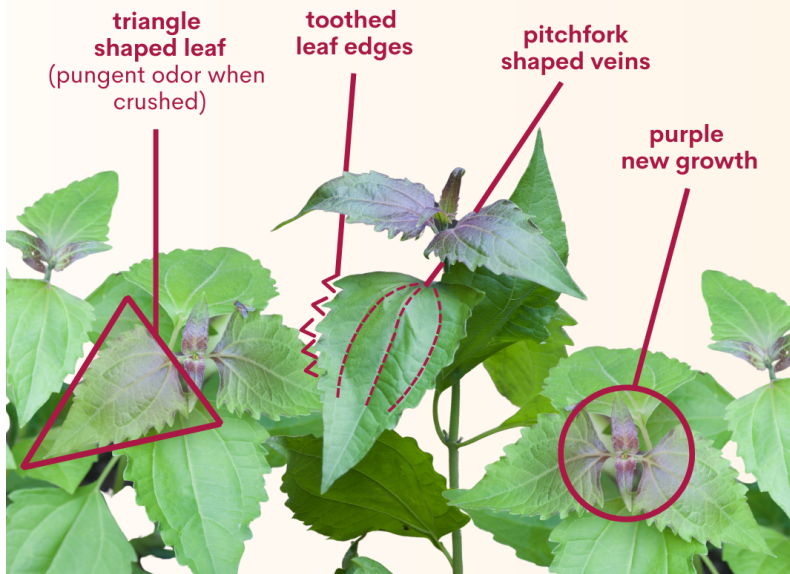
**HAWAI'I ISLAND: EMAIL
PHOTO TO BIISC**

EMAIL: biisc@hawaii.edu
CALL: 808-933-3340

Statewide Reporting: www.643pest.org

DEVIL WEED

(*Chromolaena odorata*)



Devil Weed, Siam Weed, Jack-in-the-Bush, Triffid Weed

Chromolaena odorata

Family: Asteraceae

Description: Dense shrubs can grow up to 2.5 m (8.5ft) tall in open areas. Sprawling growth pattern reaches heights up to 10 m (33 feet) when climbing other plants. The plant is hairy, glandular and the leaves give off a pungent odor when crushed. The leaves are opposite, triangular to elliptical with serrated edges. Leaves are 4–10 cm long by 1–5 cm wide (up to 4 x 2 inches). The white to lavender tubular flowers are in panicles that form at the ends of branches. The seeds are achenes spread by the wind, but can also cling to fur, clothes and machinery, enabling long distance dispersal. Seed production is about 80,000 to 90,000 per plant. In favorable conditions the plant can grow more than 3 cm per day. Considered one of the world's worst weeds.

Distribution: Native to the Americas from Florida to Texas through Mexico into South America and the Caribbean. Introduced to tropical Asia, West Africa, Australia, western Pacific islands, and the Hawaiian islands of Oahu, HI (2011) and Hawaii Island, HI (2021).

Impacts: Infests pastures, cultivated land, forests edges, trails, roadsides, and disturbed soil. Leaves contain high nitrate content which is poisonous to livestock. (1) Smothers and shades out native vegetation and has allelochemicals that inhibit the growth of nearby plants.(2) May cause severe skin and asthma issues for allergy prone people and represent a fire hazard because of the presence of volatile oils in stems and leaves. (3)

Management: Plants removed before flowering season (Dec-Feb) will help reduce seedbanks and local spread. Manual control is particularly effective on young or small plants. Plants can be hand pulled



or dug out, leftover root material can re-sprout. Pulled plants should be hung off the ground, or bagged and disposed in trash (NOT green waste) as cut stems can re-sprout and plants can reproduce vegetatively.

Chemical control used to aid manual control may be necessary for larger plants or large stands. A foliar application of 2% glyphosate in water is effective. (4) The use of triclopyr at 0.5% in water with a foliar application is also another effective method.(5) Foliar application of 1.5% imazapyr in water has shown promising results within 4 months after initial spraying. Results show that it is effective but slow-acting, so best to use well in advance of flowering season. (4) Follow up of treated areas is needed with hand pulling and/or combining a pre-emergent with initial foliar application to prevent re-infestation. (4) Cut-stump application of triclopyr at a dilution of 20% in biodiesel is effective when targeting larger, individual plants. (4)

Best grazing practices are also recommended to prevent ideal habitat and massive infestation of *C. odorata* in over-grazed pastures.

Citations: 1: Saijise et al., 1974. Phill. Weed Sc. Bull. 2. Hu et al. 2013. Jrnl. Food Ag. and Env. 3. HPWRA 2010. 4. ANRP pers. comm. 2021. 5. Eraumus & van Staden, 1986. Weed Res.

References:

1. Sajise PE, Palis RK, Norcio NV, Lales JS, 1974. The biology of *Chromolaena odorata* (L.) R.M. King and H. Robinson. 1. Flowering behaviour, pattern of growth and nitrate metabolism. Philippine Weed Science Bulletin, 1(1):17-24
2. Hu, Gang & Zhang, Zhonghua. (2013). Allelopathic effects of *Chromolaena odorata* on native and non-native invasive herbs. Journal of Food Agriculture and Environment. 11.
3. HPWRA, #407: 2010. Koutika, L.-S./Rainey, H.J. *Chromolaena odorata* in different ecosystems: weed or fallow plant? Applied Ecology and Environmental Research. 8(2): 131-142
4. Army Natural Resources Program (ANRP) field observations.
5. Erasmus, D.J. and van Staden, J., 1986. Chemical control of *Chromolaena odorata* (L.) K. & R. achenes: effect of temperature, imbibition and light. Weed Res., 26: 75-81.

DEVIL WEED LOOK-A-LIKES...

THESE PLANTS OFTEN GROW IN THE SAME HABITAT AND CAN LOOK SIMILAR EITHER WITH THEIR LEAVES OR THEIR FLOWERS.



DEVIL WEED (*Chromolaena odorata*)



BILLYGOAT WEED (*Ageratum conyzoides*)



- Leaves are triangular with purple new growth
- Pitchfork-like leaf veins
- Pungent odor when crushed
- Flower clusters are pale purple/pink

- Lacks the 3-veined pitchfork
- Leaves are deeply veined
- Stems are hairy
- Pink, white, or violet flowers
- Flower heads are tightly clustered

DEVIL WEED (*Chromolaena odorata*)



BLUE SNAKEWEED (*Stachytarpheta cayennensis*)



- Leaves are triangular with purple new growth
- Pitchfork-like leaf veins
- Pungent odor when crushed
- Flower clusters are pale purple/pink

- Leaves are oval-shaped
- Leaves have a wrinkled texture
- Leaves are mostly hairless
- Flowers are dark blue to purple
- Flowers attach to long spikes at the tip of branches

DEVIL WEED (*Chromolaena odorata*)



KOSTER'S CURSE (*Clidemia hirta*)



- Leaves are triangular with purple new growth
- Pitchfork-like leaf veins
- Pungent odor when crushed
- Flower clusters are pale purple/pink

- Leaves are oval-shaped with quilted appearance
- Leaves have 5 main veins
- No toothed edges
- Flowers are small and white
- Fruit is dark purple or blue

DEVIL WEED (*Chromolaena odorata*)



LANTANA (*Lantana camara*)



- Leaves are triangular with purple new growth
- Pitchfork-like leaf veins
- Pungent odor when crushed
- Flower clusters are pale purple/pink

- Leaves are oval-shaped
- Leaves feel like sandpaper
- Only one main leaf vein
- Flower heads are large and showy
- Flowers are pink and orange
- Thorns present on stem

DEVIL WEED (*Chromolaena odorata*)



SOURBUSH (*Pluchea carolinensis*)



- Leaves are triangular with purple new growth
- Pitchfork-like leaf veins
- Pungent odor when crushed
- Flower clusters are pale purple/pink

- Leaves are oval-shaped & fuzzy
- No toothed edges
- Lacks the 3-veined pitchfork
- Leaves smell sour when crushed
- Large clusters of flower heads
- Flowers are fuzzy and white

DEVIL WEED (*Chromolaena odorata*)



'UHALOA (*Waltheria indica*)



- Leaves are triangular with purple new growth
- Pitchfork-like leaf veins
- Pungent odor when crushed
- Flower clusters are pale purple/pink

- Leaves are oval-shaped
- Leaves are fuzzy and pale green
- Lacks the 3-veined pitchfork
- Flowers are clustered at the base of leaves
- Flowers are tiny and yellow