

Milkweed (516)

Common Name

Milkweed. It is also known as wild poinsettia, fireplant, Mexican fireplant, painted spurge, and more.

Scientific Name

Euphorbia heterophylla; previously, known as *Euphorbia geniculata*, *Poinsettia heterophylla*. It is a member of the Euphorbiaceae. Sub-species are recognised by some taxonomists.

Distribution

Asia, Africa, North (Hawaii, Florida), South and Central America, the Caribbean, Europe (restricted); Oceania. It is recorded from Australia, Cook Islands, Fiji, Federated States of Micronesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Northern Mariana Islands, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu. It is native to tropical America.

Invasiveness & Habitat

An annual weed in tropical and sub-tropical regions in crops, orchards, gardens, pastures, waste and disturbed areas, and along roadsides and waterways (Photo 1). Invasiveness of milkweed is due to an ability to produce an abundant amount of seed very rapidly and to be able to tolerate a variety of different soil types. Its life cycle is short, only 40-45 days.

Description

Stems erect, up to 60 cm tall, occasionally more, hollow, reddish-green, smooth, and sparsely branched. The stems have a milky (latex) sap. Lower leaves alternate along the stem, upper leaves are opposite, oval (egg-shaped) but variable, up to 12 cm long and 7 cm wide, hairless to moderately hairy, with pointed tips, and leaf stalks 1-4 cm long - shorter on the upper leaves. Also, upper leaves with pale patches at the base (Photo 2). The inflorescence is a cluster of many, short-stalked, cup-shaped structures at the end of the stems and side branches; these are made of green, leaf-like 'bracts', 3.5 mm tall by 2.5 mm wide (Photo 2). Inside, there are several male flowers (each with only one stamen) and single female flowers, both with very reduced structures. On the side of the bracts is a funnel-shaped opening, 1 mm tall, called the 'gland'. The fruit 3-4 mm long and 5-6 mm wide) contain three ridged seeds. From sea level to 1800 masl.

Spread

Seed. It is released explosively, and spread by water, in mud and attached to vehicles and livestock. Said to have been introduced to India and Thailand as an ornamental.

Impact

Considered a weed with potential to become a major economic and environmental threat. Large seed banks develop as seed production is high, and, with high rates of germination, extensive populations form rapidly under the right conditions - usually when the ground is disturbed - forming dense canopies over developing crop plants. Furthermore, milkweed produces chemicals from the roots which slow the growth and development of competing crop plants (known as allelopathy). According to CABI, major problems have been reported in many countries throughout its range: cocoa, coffee, cotton, maize, papaya, peanut, sorghum, soybean, sugarcane, tea, and upland rice. Additionally, the sticky latex can prevent crop harvest, or reduce harvest quality.

Uses

Young leaves used as a vegetable, despite them being a laxative. However, it is also considered to be poisonous to human beings and livestock, and the milky sap is irritating on the skin or when in contact with the eyes. Sometimes cultivated as an ornamental. Many medicinal uses, including constipation, intestinal worms, abscesses, and the treatment of gonorrhoea.



Photo 1. Small patch of milkweed, *Euphorbia heterophylla*.



Photo 2. Milkweed, *Euphorbia heterophylla*, showing leaves of variable size and shape at the top of the stem, and the cup-shaped structures (bracts) containing the male and female flowers.

Management

BIOSECURITY

Euphorbia heterophylla is widely distributed, especially in Pacific island countries. Nevertheless, those countries yet free from the grass should consider its invasiveness. Particular attention should be given to the possibility that its seed may contaminate that of other imports, be carried by vehicles, and livestock, and introduced as an ornamental, or for medicinal purposes.

BIOCONTROL

Many natural enemies have been recorded, but none have been identified with the necessary host-specificity required for biological control programs. Waterhouse provides lists of natural enemies, notes biological control programs on related species were, seemingly, unsuccessful, and suggests the need for stringent host/natural enemies testing as cassava is in the same family.

CULTURAL CONTROL

- Physical & Mechanical:
 - Hand weeding is effective on small areas where follow-up is possible to control seedlings. Best to begin when plants are young, before seed production.
 - Slashing is effective in order to encourage less-invasive species. It will need to be done regularly.
- Mulching:
 - Maintain a layer of mulch. The seeds are small and seedlings may have difficulty penetrating a 5-10 cm layer of mulch. Use woodchips, grass clippings, etc.
- Hygiene:
 - Treat vehicles and farm machinery. If moving from areas where the weed occurs to those weed-free, wash to remove soil and seed. This is equally important if the machinery is being imported into a country or moved within a country.

CHEMICAL

Resistant to many kinds of herbicides. In Australia, a number of herbicides are registered for the control of milkweed, *Euphorbia heterophylla*, (e.g., fluoxyppy, imazapic, amicarbazone, pendimethalin), and glyphosate is registered for *Euphorbia* species. In Fiji, glyphosate, 2,4-D, diuron.

Note, EU approval to use glyphosate ends in December 2022; its use after that date is under discussion. Diruon is banned in the EU.

When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval. Recommendations will vary with the crop and system of cultivation. Expert advice on the most appropriate herbicides to use should always be sought from local agricultural authorities.

AUTHORS Grahame Jackson & Makereta Ranadi

Information from *Euphorbia heterophylla* L., Euphorbiaceae. Pacific island ecosystems at risk. (PIER). (http://www.hear.org/pier/species/euphorbia_heterophylla.htm); and *Euphorbia heterophylla* L. Weeds of Australia. Biosecurity Queensland Edition. Queensland Government. (https://keyserver.lucidcentral.org/weeds/data/media/Htm/euphorbia_heterophylla.htm); and *Euphorbia heterophylla* L. Plants of the world online. Royal Botanic Gardens, Kew. (<https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:30062970-2>); and CABI *Euphorbia heterophylla* (wild poinsettia) (2021) Crop Protection Compendium (<https://www.cabi.org/cpc/datasheet/23313>); and from Fern K (2021) *Euphorbia heterophylla* L. Euphorbiaceae. Tropical Plants Database. (<http://tropical.theferns.info/viewtropical.php?id=Euphorbia+heterophylla>). Photo 1 *Euphorbia heterophylla*. International Institute of Tropical Agriculture. (<https://www.flickr.com/photos/ita-media-library/6220269932/in/photolist-atEvj-2iidTWE-2j8TEyl-2iiggBW-2iidU2C-2iidTAs-2iiahqZC-2iiggss-2iiahqFm-2iiahqHA-2kYhtza-Ds5mMF-bMhGk-2kSH6mM-DUu3TX-DXLFHy-EercD1-2jSjNy5-RYG37A-2e6idh6-2cZew39-DsamAS-E1yEM-2hLwqWN-ftsW17-EpTowe-6TJaDF-DxBzJB-aBAJfo-2mSM9wS-D6bF8h-2mSQqFz-2hLACHN-DUEkYV-Hlyeab-EerbPI-2kYKT7p-cu5MC-25NDmRL-GUu2dz-bor52-FHYW4-GDmpvF-o8Cfbr-cZGkKo-bgsWwi-5BVG4y-9AqdB8N-akpFC7-nRRE54/>). Photo 2 Forest and Kim Starr. Starr Environmental. *Euphorbia heterophylla* (Green leaved wild poinsettia). (<http://www.starrenvironmental.com/images/search?q=070111-3293>). Photo 3 Wild poinsettia (*Euphorbia heterophylla*). Rebekah D. Wallace, University of Georgia, Bugwood.org.

Produced with support from the Australian Centre for International Agricultural Research under project HORT/2016/185: *Responding to emerging pest and disease threats to horticulture in the Pacific islands*, implemented by the University of Queensland, in association with the Pacific Community and Koronivia Research Station, Ministry of Agriculture, Fiji.

Copyright © 2022. All rights reserved.



Australian Government
Australian Centre for
International Agricultural Research



Web edition hosted at <https://apps.lucidcentral.org/ppw>