

### Mini data sheet on *Euphorbia heterophylla* (Euphorbiaceae)

Added to the EPPO Alert List in 2021 - Deleted in 2024

**Reasons for deletion:**

*Euphorbia heterophylla* was transferred in 2024 to the EPPO List of Invasive Alien Plants.

#### Why

The Panel on Invasive Alien Plants decided to add *Euphorbia heterophylla* to the EPPO Alert List due to recent interceptions in Russia of seeds of *E. heterophylla* in soybean from the Americas. The aim of listing *E. heterophylla* on the EPPO Alert List is to gather additional information on its occurrence and impacts (both economic and ecological) and to serve as an early warning for the EPPO region.

#### Geographical distribution

*Euphorbia heterophylla* is native to the Americas.

**EPPO region:** Cyprus, Greece, Israel, Italy, Spain (Canary Islands).

**Africa:** Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Djibouti, Ethiopia, Gabon, Ghana, Liberia, Malawi, Maldives, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Sudan, Zambia, Zaire, Zimbabwe.

**Asia:** Bangladesh, Cambodia, China (Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang), India, Oman, Saudi Arabia, Thailand.

**North America:** Mexico, United States (Arizona, California, Kentucky, Louisiana, Mississippi, Alabama, Georgia, Florida, New Mexico, Texas).

**Central and South America:** Argentina, Bahamas, Belize, Bermuda, Bolivia, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, French Guiana, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Suriname, Trinidad and Tobago, Uruguay.

**Oceania:** Australia, New Caledonia.

#### Morphology

Stem: erect 20-100 cm often with a red tinge towards the apex.

Leaves: usually alternate, occasionally opposite, petiole 10-50 mm, blade narrowly lanceolate to elliptic or broadly obovate. Leaf shape can be highly polymorphic within individuals and populations.

Inflorescence: compact axillary or terminal cyme consisting of clusters of flowers, each with basal bracts

Flowers (cyathia): inconspicuous, consist of small cup-like structures (2-2.5 mm long) each containing several small male flowers and one female flower. The cyathia are greenish or yellowish and each one is borne on a separate stalk.

Seeds: brown to grey, broadly deltoid, 2.4-2.8 × 1.9-2.4 mm, angular in cross section.

All parts of the plant contain a milky sap.

## Biology and Ecology

*Euphorbia heterophylla* is a monoecious C4 annual species with a taproot. Seeds germinate over an extended period and over a wide range of environmental conditions. Each plant can produce over 4 500 seeds during a growing year. The species is a problematic weed in its native and non-native range.

## Habitats

*Euphorbia heterophylla* is often found growing in agricultural habitats (crops, orchards), roadsides, gardens, waste areas and disturbed sites in tropical, sub-tropical, semi-arid and occasionally temperate regions. It can grow in a wide range of soil conditions and prefers shaded habitats. In Greece (Anthochori, Kopaida plain and Viotia regions), the species infests cotton and processing tomato fields.

## Pathways for movement

*Euphorbia heterophylla* can be spread as a contaminant of grain and potentially seed. Interceptions in Russia in recent years have showed the presence of *E. heterophylla* seeds in soybeans shipments transported from the Americas for oil and meal production. Occasionally, *E. heterophylla* is utilised as an ornamental species. It was introduced in Europe in 1806, in botanic gardens and as an ornamental plant. Seed can be spread by water and by contaminated agricultural produce and soil attached to vehicles and animals.

## Impacts

*Euphorbia heterophylla* is a weed of a number of crops throughout the world. It is a major weed in cocoa, coffee, cotton, cowpeas, maize, papaya, groundnut, sorghum, soybean, sugarcane, tea and upland rice. Its rapid growth enables it to compete for valuable resources early in the life of crops, when its population can form a dense monoculture. *Euphorbia heterophylla* is a host of several crop viruses, including Euphorbia mosaic virus (Begomovirus), tomato yellow leaf curl virus (Begomovirus) and mungbean yellow mosaic virus (Begomovirus). Additionally, *E. heterophylla* can be poisonous to livestock.

## Control

Control using chemicals only is difficult and there are a number of reports of herbicide resistance. In most crops, mechanical and manual control measures are effective if done on a timely basis several times a season. The integration of mechanical, manual, cultural and herbicide use into well planned management systems is the best approach to *E. heterophylla* control.

## Sources

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