

Euphorbia heterophylla Linn. (Wild poinsettia), a weed that deserves to be tamed and not eliminated

Technical Notes

Domestication is the result of a process of selection of characters, of a specific resource, carried out by man through artificial selection to allow its adaptation to cultivation conditions or human management.^{1,2} In this process, the human being directly increases the frequency of those desirable phenotypes, promotes their growth and care, and even removes undesirable phenotypes.³

The plants associated with crops, considered by some as weeds and by others as undergrowth,⁴ are species that are classified according to the stage of domestication as “evolved in systems under intensive human management”, that is, they are species that grow in cultivated areas, so they are well adapted to agricultural work and machinery.⁵ Therefore, those considered weeds are plants that, from a phytotechnical point of view, could have some progress in the domestication process, since they are adapted to coexist in ecosystems intervened by man.

In reality, no plant is weed or undergrowth, it is only part of a personal conception that it is not a plant of interest, both in patios and in plots. In other words, an weed plant is considered any plant species that develops in a place where its presence is not desired and that competes with another cultivated species with a particular objective, whatever it may be.⁶

Many of these species, today rejected by man, provide such important services as soil formation, carbon sequestration, and regulation of soil moisture and temperature. Additionally, they are a source of human and animal food, others are for medicinal or ornamental use.⁷

Euphorbia heterophylla Linn. (Wild poinsettia), commonly considered an important weed in soybean, bean and corn crops, among others, is a plant that is still being investigated how to control it.⁸⁻¹⁰ It is a plant with highly variable morphology and one of the most invasive weed species, especially in tropical and subtropical regions of the Americas.¹¹

However, recent studies demonstrate the feasibility of using this weed to feed rabbits^{12,13} and birds,^{14,15} based on its composition in nutrients and metabolites that intervene in the nutrition and health of animals and humans.¹⁶⁻²⁰

The plant is used empirically in the treatment of ailments in humans, which justifies the development of investigations that characterize its phytochemical composition and prove the efficacy of various secondary metabolites against pathogens and diseases.^{17,18,20-23}

E. heterophylla justifies being domesticated not only for its multiple uses (fodder and medicinal), but also from the phytotechnical point of view. The species has morphophysiological characteristics that justify its evaluation as a candidate for domestication. It is an annual summer plant with a short cycle, with two or more generations per year.⁹ In addition, it flowers throughout the year, reaching 50% flowering 48 days after sowing.²⁴

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Another adaptive goodness of the plant is its accelerated growth since it classifies as a C4 plant, this characteristic allows it to shade slower growing crops, which favors their competition for light and nutrients.²⁵

This species can be a forage alternative for the tropics, considering that one of the limitations in the development of animal production in these regions is, without a doubt, the cost involved in feeding animal species, which forces to the search for nutritional alternatives, coming from well-adapted crops, which are short cycle, integral use and high forage yield.²⁶

The University of Ciego de Ávila, together with the Center for Bioplasmas, in Cuba, accompanied by CIRAD of France, begin to develop studies on the morphophysiological and productive characteristics of the plant, such as: morphophysiology of fruits and seeds, depth and planting distances, forage yield, nutritional value, composition of secondary metabolites, palatability and animal behavior, in order to convert it into a forage for different animal species in Cuba and other tropical and subtropical regions, and thus contribute to the domestication of a species so valuable and still little appreciated and used by man.

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Conflicts of interest

Authors declare there are no conflicts of interest.

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