

Calotropis procera on Fuerteventura

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1. Introduction

Calotropis procera is a „spreading shrub or small tree to 4 m, exuding copious milky sap when cut or broken; leaves opposite, grey-green, large up to 15 cm long and 10 cm broad, with a pointed tip, two rounded basal lobes and no leaf stalk; flowers waxy white, petals 5, purple-tipped inside and with a central purplish crown, carried in stalked clusters at the ends of the branches; fruit grey-green, inflated, 8 to 12 cm long, containing numerous seeds with tufts of long silky hairs at one end” (KLEINSCHMIDT & JOHNSON 1977 cited after PIER species info).

The native range covers SW Asia (India, Pakistan, Afghanistan, Iran, Arabia, Jordan) and Africa (Somalia, Egypt, Libya, south Algeria, Morocco, Mauritania, Senegal). It occurs also on the Caribbean islands, in Central and South America and has been introduced to South Africa (Lebrun 1998). According to PIER species info *Calotropis procera* is also native in Thailand and Vietnam. The species is called “saharo-sindisch” by HOHENESTER & WELß (1993). *Calotropis procera* is assumed to be an environmental invasive (PIER species info). It escaped from cultivation in Hawai'i (WAGNER, HERBST & SOHMER 1999). Monarch watch pointed out, that this milkweed species is widely distributed throughout the Caribbean and that it is commonly harvested for its medicinal properties.

2. *Calotropis procera* on the Canary Islands

Calotropis procera is listed for Gran Canaria (e.g. SCHÖNFELDER & SCHÖNFELDER 1997). BRAMWELL & BRAMWELL (1987) call the introduction relatively recent. Neither KUNKEL (1977) nor HOHENESTER & WELß (1993), HANSEN & SUNDING (1993) or SCHÖNFELDER & SCHÖNFELDER (1997) report this species for Fuerteventura. Since our first visit to Fuerteventura in 1996 we found *Calotropis procera* running wild on the island (see BRANDES & FRITZSCH). ACEBES GINOVÉS et al. (2001) now report this species for Gran Canaria and Fuerteventura. At present *Calotropis procera* grows on Fuerteventura mainly in the region of the barranco de Giniginámar as well as in

reservoirs (BRANDES 2002) in the area between Carga del Camello and Morrete de Marcos Sanchez but also on the peninsula of Jandía.

The data about height and size of the leaves published so far have to be corrected as often; obviously the measurements are only seldom done with living specimens. *Calotropis procera* can reach the height of a small apple tree but most of the individuals are smaller. So the largest measured height was 5.5 m. The girth of the stem of this tree was 57.5 cm. The maximum diameter of the crown was 6.9 m, the one measured upright was 6.7 m. Tab. 1 shows the maximum size of leaves of two incidentally chosen individuals near Giniginámar.

Tab. 1. Size of the leaf lamina of *Calotropis procera*.

Phase	Length [cm]	width [cm]
young shrub	25	19
	23	19,5
Mature tree	25	22
	24	18
	24	19



Fig. 1: Young specimen of *Calotropis procera* (2004).



Fig. 2: *Calotropis procera* in the barranco of Giniginámar (2004).



Fig. 3: Inflorescence of *Calotropis procera* (2004).

Plant sociological relevés of *Calotropis procera* are combined to Tab. 2, showing that the species belongs to the class Pegano-Salsoletea. The stands are closely related to the Polycarpeo-Nicotianetum glaucae. We found no influence of *Calotropis procera* to the herbaceous vegetation of the barrancos.

Tab. 2: *Calotropis procera* on Fuerteventura.

Number of the relevé	1725	1721	1730	1724	1723	1726	1727
Area [m ²]	50	120	120	50	150	80	200
Vegetation cover [%]	10	10	10	10	15	15	15
Number of species	9	11	11	10	14	14	22
Calotropis procera	2.2	1.1	2.1	2.2	2.3	2.2	2.1
<u>Species of Pegano-Salsoletea:</u>							
<i>Heliotropium ramosissimum</i>	1.2	1.2	1.2	1.2	1.2	1.2	1.1
<i>Launaea arborescens</i>	+	1.1	1.2	.	+	.	1.2
<i>Nicotiana glauca</i>	.	.	+°	+*	.	2.1	+*
<i>Forsskaolea angustifolia</i>	.	.	+	.	1.2	+	1.2
<i>Fagonia cretica</i>	.	.	.	+	.	.	+
<i>Ricinus communis</i>	.	.	.	.	.	.	1.1
<u>Species of Stellarietea:</u>							
<i>Patellifolia patellaris</i>	+	1.1	+°	.	1°.2	+2	+
<i>Rumex vesicarius</i>	.	+	1.2	+2	+2	1.2	1.2
<i>Datura innoxia</i>	+	.	.	.	r	+	+
<i>Aizoon canariense</i>	.	1.1	.	.	1.2	+	+
<i>Hirschfeldia incana</i>	.	+	.	.	+2	+	1.2
<i>Launaea nudicaulis</i>	.	.	.	+	+	.	+
<i>Notoceras bicornis</i>	.	1.2	.	.	.	.	1.2
<i>Senecio flavus</i>	.	.	.	.	.	1.2	+
<i>Asphodelus tenuifolius</i>	.	.	.	+2	.	.	.
<i>Malva parviflora</i>	.	.	.	.	r	.	.
<i>Spergularia fallax</i>	.	.	.	.	.	+	.
<u>Others:</u>							
<i>Salvia aegyptiaca</i>	+	+	1.1	+	1.2	+	1.2
<i>Cynodon dactylon</i>	+2	1.2	+2	+2	1.2	2.2	1.2
<i>Phagnalon purpurascens</i>	+	.	.	+	+	.	.
<i>Cenchrus ciliaris</i>	+	.	.	.	.	.	+
<i>Helianthemum canariense</i>	.	+	+	.	.	.	.
<i>Limonium sinuatum</i>	.	.	.	.	.	+	+2
<i>Tribulus terrestris</i>	.	.	+	.	.	.	.
<i>Cuscuta planiflora**</i>	1.2
<i>Kickxia spuria</i>	.	.	.	.	.	.	+
<i>Commicarpus helenae</i>	.	.	.	.	.	.	+

* dead, ** parasitising on *Launaea arborescens*.



Fig. 4: Characteristic pattern of distribution of *Calotropis procera* along the border of the episodic water course.

3. *Danaus chrysippus* as phytophage on *Calotropis procera*

The quick spreading successes of some neophytes are often explained by a lower infestation by phytophages, because the specific phytophage complex does not or only very late immigrate to the secondary area of the neophyte. In general the number of specific phytophages of neophytes seemed to be remarkably lower. KOWARIK (2003) however points out the borders of generalization, because often the data basis is insufficient.

According to BRAMWELL & BRAMWELL (1987) *Danaus chrysippus* is found on every canary island except EL Hierro and Lanzarote. According to BÁEZ (1998) the occurrences on Fuerteventura are limited. The following species of the Asclepiadaceae are reported as forage plants *Ceropegia* spp., *Gomphocarpus fruticosus*, *Caralluma burchardii*, *Calotropis procera* or *Nerium oleander*, a representative of the family Apocynaceae. We found both caterpillars and imagines of *Danaus chrysippus* feeding on *Calotropis procera* in the barranco of Giniginámar. The caterpillar is banded with black and yellow and has three pairs of filaments. It is believed that the caterpillars accumulate the poisons of their feed and are unpalatable to predators. Their striking habitus therefore is a form of warning coloration. At present we have no evidences for a severe reduction of the fitness of *Calotropis procera* by *Danaus chrysippus*.



Fig. 5: Caterpillar of *Danaus chrysippus* feeding on *Calotropis procera* (2004).

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