

Distribution and Opportunities of *Calotropis Procera* (Aiton) Shrub Plant in East Shewa Zone, Oromia, Ethiopia

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Introduction

Invasive alien plant species are increasingly becoming a significant problem for ecosystems in various parts of Ethiopia [1]. Several invasive alien plant species have been identified and documented by various researchers. According to a report by Fessehaie R. and Tessema T, out of the top twenty identified invasive alien plant species (IAPS) in Ethiopia, *Calotropis procera* was moderately widespread, affecting ecosystems such as cultivated land, roadsides, grazing areas, rural villages, riversides, and forests. Similarly, in the Borana and Guji zones, *Calotropis procera* was the most widely distributed and abundant among the sixteen invasive plant species identified [2,3].

The African Development Bank Group reported that in the Modjo-Hawassa Phase I (Modjo-Zeway) highway project area, *Calotropis procera* and *Parthenium hysterophorus* are the main invasive species found along the proposed dual carriageway route [4].

Calotropis procera is a shrub species native to several African countries and belongs to the Asclepiadaceae family. It typically grows as a small tree, reaching heights of up to 2.5 meters (max. 6 meters), with a stem that is usually simple and rarely branched, becoming woody at the base. The plant exudes white latex from all parts when cut or broken. It thrives in a wide range of ecological conditions, is drought-resistant, and tolerates salt to a relatively high degree. Due to its wind- and animal-dispersed seeds, it rapidly establishes itself as a weed along degraded roadsides [5].

Use and Status

Calotropis procera is a versatile plant with various uses. It can serve as green manure, improving soil fertility and enhancing

water retention, while also acting as a soil binder [5]. Although this shrub is widely distributed and abundant in many areas, it remains underutilized in some regions due to a lack of information about its potential benefits. The plant holds both social and economic value, but its advantages are not fully leveraged in areas where knowledge about its properties is limited.

In Ethiopia, *Calotropis procera* is known by various names in different regions, such as Qimbo, Tobiaw, and Ghinda in Amharic; Falfala Adal or Buna Gadhee in Oromiffa; Akalo, Dinda in

Tigrinya; Abuwo in Agnuak; and Boha in Somali. In English, it is referred to as the “Apple of Sodom” or “Dead Sea fruit” [6].

The shrub provides numerous social and environmental benefits. Medicinally, it is valued for its therapeutic properties for both humans and animals. Ecologically, it plays a role in soil improvement, with its leaves being used to produce compost and vermicompost when combined with animal manure and other organic materials [7,8].

Distribution

Based on personal observations in the East Shewa Zone, this shrub species is becoming increasingly widespread across the central Rift Valley districts, including Adama, Bosat, Lume, and Bora. It is commonly found along roadways, in eroded and degraded land, on farmlands, and along irrigation canal embankments. The prevalence of this species in the central Rift Valley can likely be attributed to its tolerance of dry conditions and its ability to regenerate rapidly. As a result, the shrub remains green year-round and continues to produce leaves. Its spread has been particularly noticeable along the roadways managed by the Ethiopian Roads Authority, including the routes from Bishoftu

to Modjo, Bishoftu to Liben, Modjo to Adama, Modjo to Hawassa, and Adama to Boset, as well as in surrounding agricultural lands.



Photo taken by Author

Figure 1: *C. procera* around toll road Modjo-Adama exit and water ways

Opportunities

Calotropis procera is an invasive species that is expanding from roadways into various land uses, particularly affecting agricultural and grazing lands. This has created challenges for smallholder farmers. However, several opportunities have been identified, such as utilizing the plant as a raw material for traditional vermincomposting, as well as for firewood and fencing purposes.

Recommendations

Overall, managing the invasive plant species through utilization presents a viable alternative for limiting its spread. Moving forward, research institutions and concerned government agencies should prioritize comprehensive studies on its socioeconomic impact, as well as its Allelopathic effects on crop seed germination, agricultural productivity, and soil fertility. Furthermore, widespread public awareness campaigns will be essential to inform and engage the community in addressing this issue.

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