

## EFFECTS AND DISSEMINATION OF ARGEMONE/ARGEMONE OCHROLEUCA SWEET/ IN EAST GOJJAM ADMINISTRATIVE ZONE, AMHARA REGIONAL STATE, ETHIOPIA

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**ABSTRACT:** *Argemone ochroleuca* is newly introduced and naturalized in to East Gojjam Administrative Zone into its all 16 rural districts and all four urban administrations. It is disseminated through transportation of construction material (sand) from river side to the place where construction is made. The weed is disseminated through the transportation of construction material (sand) at large. *Argemone ochroleuca* is first observed at newly built road side. So its seed dormancy and having soft spine and less awareness of the community make way of prevention and control measures difficult. The best way of controlling argemone weed is reducing its biomass through continuously collecting and burying the weed before fruit setting and firing after collecting in specific area.

**KEYWORDS:** *Argemone ochroleuca*, invasive, dissemination, East Gojjam Administrative Zone

### INTRODUCTION

It is estimated that about 30 types of alien and noxious weed is identified in Ethiopia and 12 of them were also found in Amhara region (PSOAIQCQA, 2016) (*Parthenium hysterophorus*, *Orobancha spp*, *Xanthium strumarium*, *Xanthium strumarium*, *Eichhornia crassipes*, *Hygrophila auriculata*, *Lantana camara*, *Senna or Cassia didymobotrya*, *Cuscuta spp*, *Chrysanthium sogetem* and *Prosopis juliflora*); of which 9 were found in East Gojjam Administrative Zone. *Argemone ochroleuca* in East Gojjam Administrative Zone is found in all districts where ever in the rural and urban areas. Its dissemination is fast. In Ethiopia it was first observed and studied in the Eastern part of Ethiopia (TamadoTana, 2000). Then it is disseminated in all parts of the country. In Amahara region the agro-ecology is very suitable for argemone ochroleuca. The coverage is rising in paramount from year to year; especially it favors rage land, road side and sandy soils.

### METHODOLOGY

An extensive field survey was held during 2015-2016 in area of all 16 rural districts and four urban administration in East Gojjam Administrative Zone. During the survey, the author collected weed species that were not previously known by the local community in the area (East Gojjam). Preliminary identification of the collection was made in the field with the help of elderly in the local areas. Then further study was undertaken by published literature ( Karlsson, 2003 ; Tamado, 2000 ; patel , 2013 ; Kura , 2014 ; Karnawat (n.d ) ; sanaa , 2012a ; Sanaa , 2012b).



**Source: Photo taken from grazing land at Ethiopian high land (2016)**



**Source: Photo taken near institution at East Gojam in Ethiopian`s high land (2016)**

## **RESULTS AND DISCUSSION**

Argemone L. (Papaveraceae) is represented by two naturalized species *A. mexican* L. and *Argemone ochroleuca* Sweet (Patel, 2013). But in East Gojjam Administrative Zone *A. ochroleuca* is the only species of *Argemone* documented by author`s survey of the study.

*Argemone ochroleuca* in Ethiopia has been earlier introduced to Ethiopia in its eastern part (Tamado, 2000).

Argemone in East Gojam administrative Zone mainly covers 40% range land, 40% farmland, 10% road side and the rest 10% on waste land. According to Namkelja (2014), allelochemicals from *A. mexicana* may affect germination, growth and chlorophyll content of wild plant species. So that *A. ochroleuca* allelopathic nature could favor land to be eroded through rain fall, loses biodiversity under the canopy. The main problem of the weed in range land is shortage of forage; animal has not vacant space not only for grazing even for sleeping and standing on the place. Argemone has soft spine which make difficult for weeding. Its seed can grow in poor soil where crops can`t grow. The weed is not suitable for animal feed; even donkeys do not feed on it in the drought season. Argemone can grow in all climatic condition including during frost to drought or desert; it has been evidenced that in Ethiopia the year 2016 was drought season but suitable for argemone during

the then. East Gojjam zone has frost areas with altitude of 4088m asl but *Argemone ochroleuca* was grown there (*choke mountain*). Majority of the respondents replied that argemone seed is used for the purpose of skin and hide softening. It also cure fresh wound which is made by cut of skin that would bleed. It is evidence that it has Anti fungal and bacterial effect (REYES, et . al . 2011 ; Almari, et. al . 2010 ; moustafa , 2016). Argemone seed stay dormant in the soil (Tamado, 2000) that makes the weed control difficult in case that it grows when the seed complete its dormancy.

## CONCLUSION

The author might come to conclusion that *Argemone ochroleuca* is one of the most hazardous, alien and invasive weed for the study area flourishing in all climatic habitats from frost to arid and desert area. The weed has medicinal value. Its invasive nature is also fast. The dormant nature of seed in the soil, the wide flourishing nature of seed, and the soft spine make weed control difficult.

## RECOMMENDATION

The Debre Markos plant seed and other agricultural inputs quality control and quarantine authority branch office should integrate with other relevant organization so as to make control methods ease. So as to retard the dissemination of weed, the weed plant should be collected, buried and fired before fruit or seed setting

Farmers should protect the weed from grazing land that would reduce biodiversity under the canopy

Further study on its medicinal value and synthesis of medicine should be studied ahead. Comparative advantage of its being hazardous weed and its medicinal value should be studied

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