Anoda cristata (L.) Schlechter a
New Weed Species in the Egyptian Weed Flora

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Abstract: This study was conducted to revise the taxonomic identity of Anoda cristata and clarify specific relationships within genera of family Malvaceae in Egypt. This research proved the morphological characters’ similarity and dissimilarity among the studied genera and adding Anoda cristata (L.) Schlechter as a new record to the Egyptian weed flora.

Key words: Flora of Egypt • Anoda cristata • Morphological characters

INTRODUCTION

The new taxon was transferred to Egypt by many methods. The artificial methods were by (for researches or special cultivation) combined with the fodder compounds. The natural transferred of plants were with immigration of birds and Nile flood …. etc.

Family Malvaceae includes some economic species such as Gossypium barbadense L., Hibiscus cannabinus L. as fibre crops, Malva parviflora L. and Hibiscus esculentus L. for food or ornamental plants as Althea rosa L. and Malva silvestris L. and Abutilon theophrasti Medik and Hibiscus trionum L. as weeds.


Many floristics surveyed the weed flora in different locations in Egypt. El-Amry [7] studied the flora of El-Minia governorate; Abd El-Ghani [8] surveyed the flora of Fayoum governorate and Bahrya Oasis, Abousteit et al. [9] studied the weeds flora of maize in Qalubia and Giza governorates, Hassan and Mohamed [10] surveyed the weed of maize field in upper Egypt; Daie and El-Khanagry [11] studied the weeds in summer oil crops from east to west Delta; Shaheen et al. [12] surveyed the flora of some islands in the Egyptian Nubia; Mohamed [13] studied the flora of Assuit and Sohag governorates, on the other hand the general survey in different locations in Egypt (desert, cultivated lands and water) [14, 15]. The aim of this research was adding Anoda cristata (L.) Schlechter as a new record to the Egyptian weed flora.

MATERIALS AND METHODS

In this study, plant material was collected from maize, sugarcane, cotton and along canal bank of Experimental Farm of Mallawy Agricultural Research Station El-Minia Governorate map (1) during summer season of 2014 and 2015. The first specimen was collected from cotton field in 15/9/2014 and maize field in 25/9/2014. The specimen was collected and identified by Mobarak according to Arthur [16] and checked by El-Khanagry depending on Bailey [17]. Also the specimen is not found in family Malvaceae in Täckholm [18] and Boulos [19]. On the other hand, the specimen compared with all species belonging to the family Malvaceae in the important Egyptian herbaria Cairo university herbarium (CAI) and Agriculture Museum (CAIM).
RESULTS AND DISCUSSION

General Characters of Family Malvaceae: Family Malvaceae includes about 111 genera with 1800 species. The general characters of this family are: herbs, shrubs or trees; usually stellate-hairy; leaves alternate, stipulate, lobed or divided, usually palmately lobed; flowers usually bisexual, actinomorphic, often conspicuous, axillary, solitary or in terminal inflorescences; epicalyx present or absent; sepals 5, rarely 3 or 4; petals 5, usually connate at the base and adnate to the staminal column; receptacle short or elongate into a central axis; stamens numerous, rarely 5, connate into a staminal column, anthers 1-celled; ovary superior, of 2-many carpels; placentation axile; style divided at apex into lobes or stigmas, as many as or twice the number of carpels; fruits a dehiscent capsule or schizocarp, rarely a berry; seeds usually hairy.

Description of genus *Anoda* Cav.: Annual to perennial herbs, or subshrub. Stem erect, branched, hairy; leaves alternate, broadest part at base, petiolated and stipuled. Inflorescence axillary, 1-flowered; epicalyx absent; calyx 5 connate at base, petals 5, free, hairy; stamens numerous, filaments connate below into a tube with one cell anther lobe; ovary manycelled, each cell with 1-ovule; stigma capitate. Fruit schizocarp, splitting into 1-mericarp. A genus of 23 species in tropical America. *Anoda cristata* (L.) Schlechter, Linnaea 11:210 (1837). Basionym: *Sida cristata* L. Syn: *Anoda lavatrioides* Medik.

Herbaceous Annual or short lived perennial. Stem erect or decumbent, up to 2.5 m high, much branched from base and above; branches reddish-green, ascending. Leaves green, broadest part at base, lobed (3-7) with glandular hairs; lamina ovate or deltoid-ovate, 7-10 cm
Fig. 1: The specimen kept in CAIM

long, 3-9 cm diameter, apex acuminate; base truncate to cuneate; midrib and veins reddish; petiole 5-8 cm long, hairy or glabrous; stipule lanceolate 1.5-2.5 cm long. Flower solitary pedicellate; calyx 0.5-1.5 cm hairy, connate at base; calyx-tube 7 mm, with caudate apex; petals white with tinged lavender; schizocarp fruit with 10-20 mericarps; mericarps covered by 2 mm hairs, 1 seeded; seeds black covered by 2 mm hairs.

Collection: Mallawy Agric. Res. Station cotton field 15/9/2014; Mobarak (CAIM) Fig. (1).

Global Distribution: Widely distributed in USA to Chile and West Indies, India and in Iran [17, 20, 21].

The basic study of the specie *Anoda*. depended on the basis morphological characters compared to the other genera of family Malvaceae in Egypt. Also, compared to the different studies by El-Amry [7], Abd
El-Ghani [8], Abousteit et al. [9], Daie and El-Khanagry [11], El-Shaheen et al. [12], Mohammed [13], Khangry and Mohamed [14] and Habib et al. [15]. The results confirmed that Anoda cristata (L.) Schlechter is a new registered species in Egypt.

**CONCLUSION**

The current taxonomic study based on morphological characters revealed that Anoda cristata (L.) Schlechter is a new registration to the flora of Egypt and distributed as a weed in Maize, cotton, sugar cane fields and cannel bank.

**REFERENCES**


