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A NEW ENDEMIC VARIETY IN *ABUTILON PANNOSUM* (FORST. f.) SCHECHT. (MALVACEAE) FROM BALOCHISTAN, PAKISTAN

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ABSTRACT

A new variety of species *Abutilon pannosum* var. *balochistanicum* F. Naseer *et al*. is recorded and identified from Pakistan for the first time. The description of the newly recorded taxa with complete diagnostic characters and illustrated diagrams has been presented. Micro-morphological characteristics of mericarp and seeds have been done with the help of scanning electron microscopy (SEM). *A. pannosum* var. *balochistanicum* is showing unique features in its most of the important qualitative characteristics. Surface of fruit and seeds surface pattern is the key characteristic which shows resemblance with rest of identified specimens of *A. pannosum.*

Key words: New variety, endemic, *Abutilon pannosum* var. *balochistanicum*, Malvaceae, Baluchistan, Pakistan

INTRODUCTION

Family Malvaceae is containing large number of genera and species; having showy flowers and distinct habit condition is the most decent group among dicots. In the 17th century; Philip Miller was the taxonomist who first recognized the genus *Abutilon* in the family Malvaceae (Fryxell, 1983; Fryxell 2002). The genus *Abutilon* is separated from the closely allied genus *Sida* on the basis of habit and large flowers; flowers opening timings also differ (Hooker; 1872). It is cosmopolitan in distribution mainly found in the tropics and sub-tropics (Manjunnath 1948; Borassum, 1966; Davis, 1967; Mabberley, 1987; Sharma and Sanjappa, 1993).

Genus holds more useful and effective medicinally important species. As far as presence of *Abutilon* is concerned in Pakistan, it is quite common in some parts with its decent habit and showy flowers.

MATERIALS AND METHOD

The specimens of the species *Abutilon pannosum* var. *balochistanicum* have been collected with complete observation and voucher details during study trip in the February 2009 from the vicinity of Uthal and Winder. Plant specimens have been thoroughly studied morphologically for the systematic treatment of the genus in the region. Micro-morphology of seeds and mericarp has been examined through scanning electron microscope and macro-morphology has been examined under light microscope. Examined specimens and holotype have been deposited in the Karachi University herbarium (KUH) with complete voucher details.

For the scanning electron microscopy (SEM) mericarps and seed materials is directly mounted on aluminum stubs using double adhesive tape coated in the sputtering machine before examination under SEM (Jeol Japan, JSM-6380A). Seeds were examined under SEM Philips XL30. Mericarps were also examined under SEM

RESULTS AND DISCUSSION

Diagnostic characters: Flowers more than 4.5cm in diameter, orange yellow with red basal circle. Fruit velvety to touch, greenish to brownish. Mericarps 20-23 in each fruit, dark brown with long spreading light brown hairs. Seeds are 3 or sometimes 2 in each mericarp.

Holotype: 27th Km from Uthal to Windar: F. Naseer and S. Khatoon 5-2-2009 voucher No. 144 (KUH).
Examined Specimen: G-5: Bela district: 27th Km from Uthal to Windar, F. Naseer, S. Khatoon 5-2-2009 voucher numbers 144, 145 (KUH), 47 km on the way Uthal to Windar F. Naseer, S. Khatoon 5-02-2009, 149 (KUH).
Distribution: Restricted in the vicinity of Uthal and Winadar in the Balochistan Provence, of Pakistan.
Flower period: We have noted only in the February to June.
Etymology: The name of species has been assigned on the basis of firstly collected vicinity.

Conservation status in Pakistan: *A. pannosum var. balochistanicum* is presently known only from the type locality. It may also be considered at least as vulnerable.

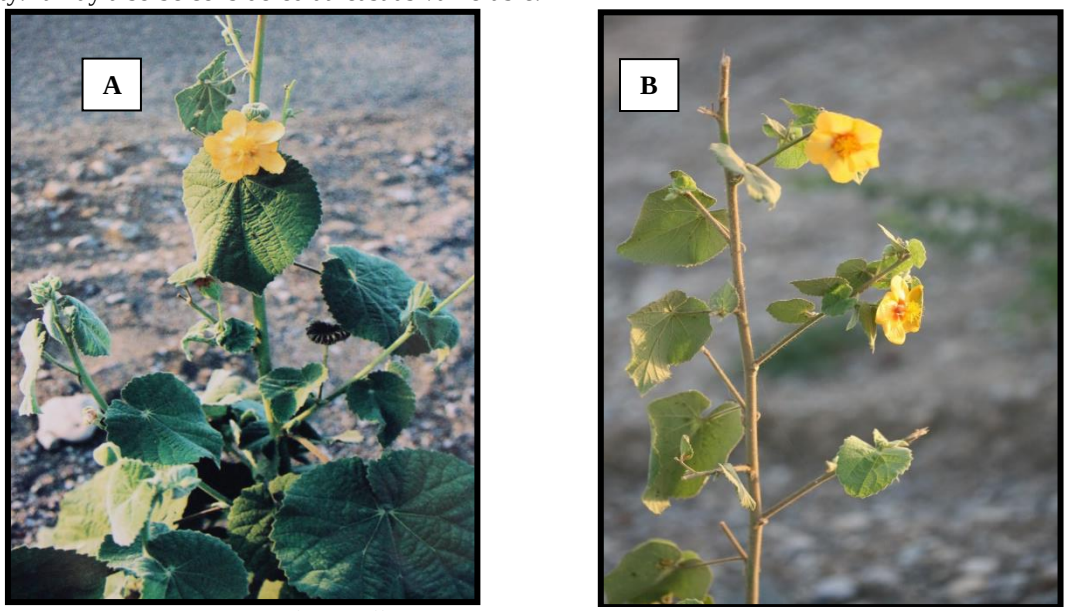

Fig. 1. Photograph showing Habit and flower difference between (A) *A. pannosum* var. *pannosum* and (B) *A. pannosum var. balochistanicum*

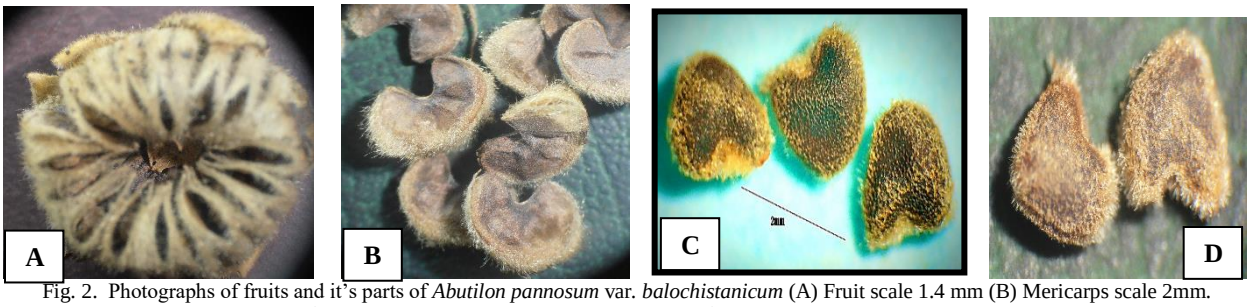

Fig. 2. Photographs of fruits and it's parts of *Abutilon pannosum* var. *balochistanicum* (A) Fruit scale 1.4 mm (B) Mericarps scale 2mm. Seeds digital photographs of (C) A. *pannosum* var. *pannosum* (D) Seeds of *Abutilon pannosum* var. *balochistanicum* (scale 2mm)

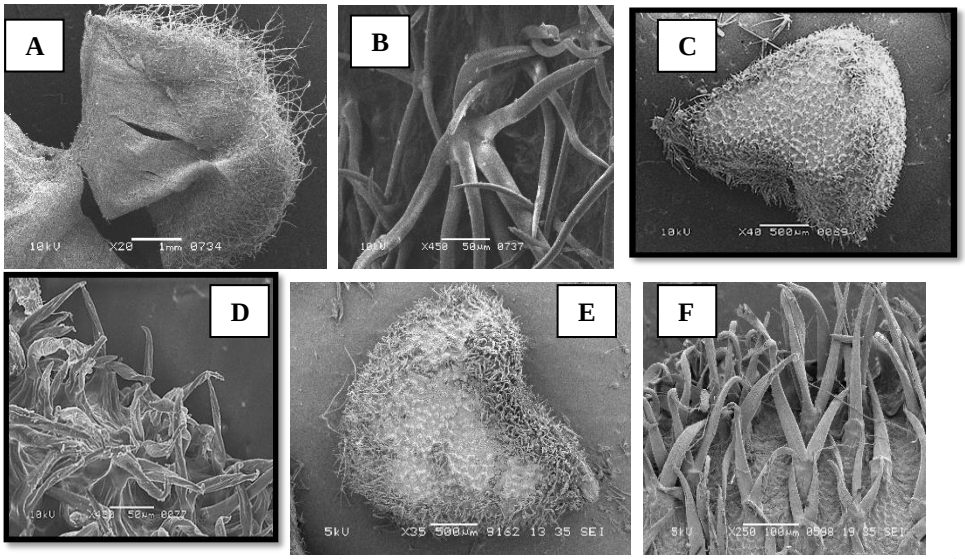

Fig. 3. Scanning electron microscopy of *A. pannosum var. balochistanicum* (A) Mericarp apex (B) 5-8 armed of stellate hairs at edges of mericarp Scanning electron microscopy of *A. pannosum var. pannosum* (C) Entire view (D) di-tri-chotomous hairs. Scanning electron microscopy of *A. pannosum var. balochistanicum* (E) Entire view (F) di-tri-chotomous hairs.

TAXONOMIC NOTE

The new variety of *A. pannosum* differs from the type variety in both its macro morphology and micromorphology. Fig. 1 shows, it is a large shrub look like decent in the evening with opened flowers. The new variety has much dense indumentum than the type variety, due to which its leaves appear to be thicker. The flowers are comparatively large in diameter; corolla is almost more than double the calyx. Petals are orangish yellow in colour with bright red centre, while in the type variety the flowers are entirely orange yellow.

Fruit is velvety when touched. The seeds of the new variety have dense and longer shaggy hairs all along the margins of seed and also on the raphe. In the type variety the raphe hairs are more concentrated near the hilum and lower part of the raphe, while the seed coat hairs are longer on upper and lower ends and sparse along the abaxial margin (Fig. 2 and 3).

In current study the specimen of new variety has been collected only from the type locality. However, it may be more widely distributed, as the illustrated images given in Colonette (1985) and Boulus (2000), labelled as *A. pannosum* may in fact fit to this taxon. Besides, these, several pictures from different parts of India variously labelled as *A. indicum* or *A. hirtum* (available in Google images) also look like this new variety.

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