

Morphological study Properties of some *Datura* species developing In Iraq

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Abstract

This Study investigated the Morphological Properties on four Wild *Datura* sp. *D. stramonium* L., *D. innoxia* Mill., *D. metel* L., and *D. quercifolia* Kunth. members of the family Solanaceae slightly grown in Iraq morphologically Characteristics was the shape, apex, base, margin, and venation of lamina were studied given the systematic evidence for old world origin of the Genus the leaves are large deep green in color simple Ovate lanceolate and Ovate with Entire sinuate margin measuring up to (12.4) cm long and up to (10.4cm) wide suspended with a long petiole up to (4.1cm) long with alternate phyllotaxy, the flower is trumpet like and solitary hermaphrodite actinomorphic length up (11.2) cm, fruit is greenish dehiscent in 4 valvate capsule covered by spines up to (0.7) cm long further seed were kidney shape and brownish color

Keywords: *Datura*, Solanaceae, Morphological, properties, vegetative parts, flowers

1. Introduction

Datura (*Datureae*, *Solanoideae*, *Solanaceae*) is a genus of 12 [1] or 14 species [2] *Datura* is a genus in the family *Solanaceae*, annual or perennial herbs, and rarely shrubs or trees, *Datura* is a cosmopolitan weed of cultivated fields, gardens, waste places, barnyards, and other disturbed habitats, stem stout, erect, up to (100 cm) tall, divaricately branched, glabrous to pubescent and course stem green to purplish, filaments filiform, first true leaves ovate with pointed tips and few or no lobes, later leaves alternate, simple, petiolate, petioles up to 3cm long, blades (1-14 cm) long, (2-10 cm) wide, ovate to elliptical, acute –acuminate at the apex and oblique at the base, strong-scented, Flowers actinomorphic, persistent Large bugle shaped solitary on short pedicel, axillary in fork of branching stem, calyx tubular, five-angled, five dentate, teeth, (3-10 mm) and unequal [3], calyx separating transversely above the base in fruit, the lower persisting as a collar beneath the capsule, corolla tubular or trumpet-shaped –lobed, white, purple, cream, yellow, and violet Capsule ovoid, erect, (3-7 cm) long, (2-5 cm) wide, dehiscent regularly by four-valves, four-locular except two-locular top, densely covered with more or less equal spines up to 10 mm [4], stamens five, equal, inserted near base of corolla, stigma two mm, rarely smooth, Seeds dark-brown to black, flat, kidney-shaped, surface irregular and pitted, (3-4 mm) long, (2-3 mm) wide [5]. It is characterized by its narcotic hallucinogenic and medicinal properties, as well as its effects in human poisonings [6].

2. Materials and Methods

I studied the phenotypic characteristics of the specimens of the species in the subject of the study by relying on the fresh models collected from the field of the gardens in the University of Kufa, Al-Ghadeer district, the Al-Hawtim area, al-anbar Island, and Bagdad Al-Zwraa. Plants were studied diagnosed in the laboratory of Diagnosed in the laboratory of the Faculty of Science, The data is tabulated

and converted to results that can be used accurately to compare species by similarity and difference in attributes, Morphological features cover the plant height, leaf color and texture, flower color, shape of flower, leaf margin, flower length, spines, stem color and texture, etc. these parameters were studied to gain data regarding morphological features between Species.

3. Results and Discussion

Table(1) provides the Characteristics of ten morphological traits of the four species of *Datura*, *D. stramonium*, *D. quercifolia*, *D. innoxia* and *D. metel*, it is demonstrate the main morphological properties of *Datura* taxa studied lamina of *D. stramonium*, *D. innoxia* was ovate -lanceolate while *D. metel* and *D. quercifolia* was only ovate, asymmetrical, pubescent green color in *D. metel* compared with grey green in *D. quercifolia*, and was green dark in *D. stramonium* and *D. innoxia* reticulate venation was (brochidodromous) in all taxa leaves (Dupin et al, 2018), acuminate at apex, entire to sinuate a margin, oblique in base, the higher means of stem length noticed in *D. stramonium* (52.8 cm), while was (32.5, 37.2) and (40.9) cm in *D. quercifolia*, *D. metel*, and *D. innoxia* respectively. *Datura* leaves was petiolate this is agree with (Solereder, 1986), on the other hand the length of leaf was (12.4cm) in *D. stramonium* compared with (7.5cm) in *D. quercifolia*. further that the higher means of leaf width in *D. stramonium* was (10.4 cm), and (5.1 cm) in *D. quercifolia*, otherwise the petiole was densely hairy in all taxa the tallest petiole was in *D. stramonium* (4.1cm) and the lowest was in *D. metel* (2.8 cm). whilst a stem color was green creamish at *D. innoxia* and green grey at *D. metel* and otherwise a color was violet green at *D. stramonium* and *D. quercifolia* [2] flower length and fruits spines length were get higher means length was (11.3, 0.7cm) in *D. stramonium* compared with lower means in *D. quercifolia* was (8, 0.4 cm) The seed of *Datura* color was yellowish brown in *D. stramonium* and *D. quercifolia* compared with brownish color in *D. metel* and

D. innoxia That is agree with Safford [7] Figuer1, furthermore *Datura* species leaf base was slanting at the right side from the upper surface of leaf present in *D.stramonium*,*D.innoxia*,and some of *D.metel* whilst *D.quercifolia* it was obliques to the left. color of flower different among the studied species they were white in *D. stramonium* and red–white in *D. innoxia* compare with yellowish color in *D. metel* while was violet in *D. quercifolia*.

Table (1) quantitative and qualitative morphological characterisof Darura

Plant Characters	Datura stramonium	Datura quercifolia	Datura innoxia	Datura metel
1.Height(cm)	52.8	32.5	40.9	37.2
2.leaf color	6.5(12.4)15	5.3(7.5)11.3	5.2(9)13.6	4.2(7.7)10.9
3.leaf color	Green dark	Green grey	green	Green dark
4.leaf Width(cm)	6.5(10.4)15	4.2(5.1)7.2	4.7(6.2)9.2	2.3(2.8)4.8
5.petiole length(cm)	3.2(4.1)5.3	2.6(.9)4.8	2.5(3.7)6.2	2.3(2.8)4.8
6.Flower length(cm)	8(11.3)16	7.3(8)13.1	9.4(9)14	7.3(8.2)13
7.Number of flower whorls	one	one	one	one
8.size of fruits capsule(cm)	14)15)5.2	7)15)3	8)17)4.9	7.2)12)1.7
9.lingthof spines	0.7)0.11)0.3	0.4)0.8)0.2	0.6)0.12)0.3	0.5)0.10)0.2
10.seed color	Yellowish brown	Yellowish brown	brownish	brownish

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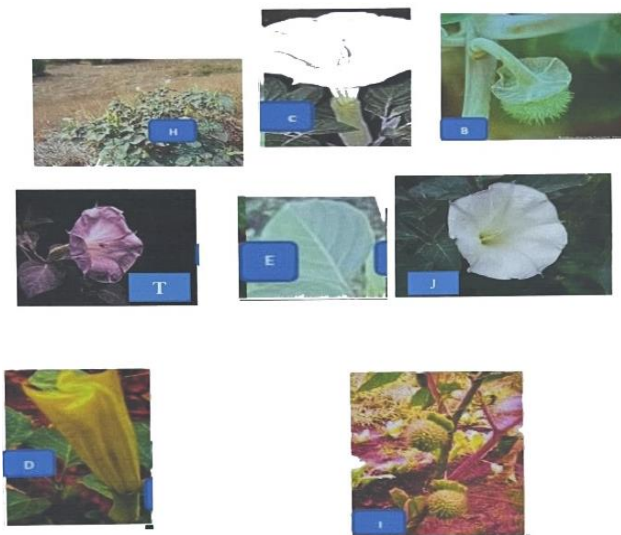


Figure (1). Parts of *Datura* (H-C-B) *D. stramonium*, Shrubs, flower and fruit. (T-E) flower and leaf of *D. quercifolia* (I-D) fruits and flower of *D. innoxia* (J) Flower of *D.metel*.

4. References

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