

## Research Paper

# Botanical Characteristics, Anatomy, and Phytochemical Analysis of *Euphorbia dracunculoides* Lam. Talod, Sabarkantha District, Gujarat

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**Abstract**— This work is based on the morphology, anatomy, and phytochemical analysis of *Euphorbia dracunculoides* Lam. plants. The *Euphorbia dracunculoides* Lam. plant is included in the Euphorbiaceae family. The morphological characteristics are useful as a taxonomic tool. Plants of the genus *Euphorbia dracunculoides* Lam. are used to treat rheumatism, epilepsy, edema, snake bites, and warts. An anatomical study of different parts taken with hand sectioning and a phytochemical investigation have been carried out for these secondary metabolites like alkaloids, flavonoids, amino acids, phenol, steroids, glycosides, tetraploids, and carbohydrates using three solvents: methanol, water, and acetone. The literature review suggests that no type of morphological or phytochemical study has been done in Gujarat.

**Keywords**— Anatomy; Botanical characteristics; *Euphorbia dracunculoides* Lam.; phytochemical; qualitative analysis

## 1. Introduction

Herbal medicine is the most accepted and recognized form of medicine in today's society, and for the treatment and prevention of many diseases around the world, various medicinal plants would be the best sources to obtain quality herbal medicine drugs. As a result, such medicinal plants should be thoroughly researched in order to gain a better understanding of their botanical properties, such as plant morphology and phytochemical screening for bioactive compounds in plant drugs. These procedures and processes aid in the identification and standardization of plant material. Correct characterization and quality assurance of starting material is an essential step in ensuring the reproducible quality of herbal medicine, which will aid in justifying its safety and efficacy. To detect and isolate the active constituents, a qualitative chemical examination using various analytical techniques is performed. The macroscopic and microscopic description of medicinal plants is the first step in determining their identity and degree of purity, and it should be accomplished before any tests are carried out.

Flora biodiversity's contribution to health care has been well documented throughout history. Because it is generally believed that natural plant medicines are healthier than synthetic products. Nowadays, there is a manifold increase in medicinal plant-based industries due to the increase in interest in the use of medicinal plants throughout the world, which is growing at a rate of 7- 19% annually. Because of the increased local, national, and international interests, the WHO has been encouraging countries to identify and exploit traditional medicines since 1980. The pharmaceutical

industry sees plant wealth as a source of income, and the demand for medicinal and aromatic plants has increased dramatically in recent years. The demand for medicinal plants is increasing in both developing and developed countries due to their ease of availability, lack of side effects, and sometimes being the only source of health care. In developing countries, low-income people such as farmers, residents of isolated small villages, and members of native communities who suffer from common infectious diseases use folk medicine for treatment. A proper control of the starting material is required to ensure measurable quality of herbal products. The standardization of selected medicinal plants for their potential therapeutic significance has increased rapidly in recent years. Despite current methods, pharmacognostic studies identify plant-based medications more accurately.

According to WHO 1998, before any test is performed, the macroscopic and microscopic description of a medicinal plant is the first step towards establishing the identity and degree of purity of such material. (Manisha Singh et al., 2017) *Euphorbia* is represented by more than 193 species, the second largest genus of flowering plants with over 2150 species (Frajman and Schonswetter, 2011); in India, *Euphorbia* is represented by more than 193 species (Aditya, 2010) and is widely distributed in varied habitats.

*Euphorbia dracunculoides* Lam. is included in the Euphorbiaceae family. Herbs are annual, short-lived plants with terete roots, basally branched stems, alternate leaves, and no stipules. In the farm, they grow as weeds. The nectar-rich nectaries of the bracts start providing carbohydrates-rich food for ant colonies and other arthropods, and many of them

protect the plant in exchange. It is distributed worldwide in most countries. It is also called "Dragon spurge." These plants were native to Africa. In India, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, and Uttar Pradesh are among the states that have it.

The literature review suggests that no type of morphological or phytochemical study has been done in Gujarat or India. These plants were first mentioned in the Gujarat Flora (G.L. Shah, 1970) in Gujarat. Dilip Jani sir identified this plant as a medicinal plant in his 2012 Ayurvedic medicinal plant survey.

According to a review of the literature, there has been very little research on these plants. This plant study was important to establish microscopically characteristics and phytochemical parameters for quality control.

### 1.1 The Aim and Purposes of this Study

The aim of this study is to investigate the morphological characters, anatomical study, and phytochemical analysis of *Euphorbia dracunculoides*. Lam plants.

- To find out the availability of plants.
- To check the identification of these plants.
- To the study of morphological characteristics of plants.
- Photograph the various morphological characteristics.
- To carry out an anatomical study of this plant,
- To prepare a powder extract for the phytochemical investigation of these plants.

### 1.2 Significance of the study

The study is very essential in taxonomy for proper identification and authentication of plants. This study gives a phytochemical analysis of the whole plant sample and provides an anatomical study of plant material.

### 1.3 Study Area

Talod taluka is situated in Sabarkantha district, near Prantij taluka. Many different types of research studies have been conducted by many different research students. Many medicinal plants, herbs, shrubs, trees, and climbers are distributed in this taluka. Talod taluka latitude is 23.351949°N latitude and 72.953253°E latitude in this taluka's hot, semi-arid (steppe) climate.

### 1.4 The apparatus of Soxhlet

Soxhlet extraction is a modern extraction technique in which we calculate the same solvent and circulate it through the extract several times. The Soxhlet extractor significantly improves the extraction process over traditional methods.

## 2. Related Work

Euphorbiaceae is the largest family and includes many plants. *Euphorbia dracunculoides* Lam. has many specific morphological characteristics. It is an annual or perennial herb, having milky latex and Cyathium-type inflorescence. *Euphorbia dracunculoides* Lam. Whole plants have some

medicinal properties (qualitative analysis carried out in this work), such as flavonoids, steroids, Phenol present in these plants, which are useful for the human body and some diseases. It also plays an essential role in anti-inflammatory and anti-proliferative activity. Plant anatomical study is very important for the identification of some plants. Trichomes in this plant are unicellular and needle-like, and stomata are of two types: anisocytic and anisocytic. This plant is commonly found as a weed.

## 3. Theory/Calculation

The Soxhlet apparatus continuously extracts solid matter with pure solvent, saving solvent extraction efficiency and increasing efficiency. The Soxhlet extraction method requires little solvent and is very cost-effective.

## 4. Experimental Method/Procedure/Design

### 4.1 Morphological study

For the morphological study of plants, the sample was necessary. The plant was recognized as a farm by its local name from the Sabarkantha district, Talod Taluka 2019.

#### 4.1.1 Morphological characterization

Collected fresh plant samples were characterized based on morphological traits such as plant habit, habitat, length of root, stem, leaves, flower characters, fruits, seeds, etc.

#### 4.2 Materials and instrument used

Microscope, Slide, Cover slip, Camel brush, Water, Safranin, Blade, Dropper, Watch glass, Grinder, Soxhlet extractor

#### 4.3 Anatomical characterization

For microscopic (cellular) characterization, collected plant samples of *Euphorbia dracunculoides* Lam. were subjected to microscopic observation. The section of different parts like roots, stems, and leaves was obtained in the transverse plane. A thin transverse section of a leaf, stem, and root was obtained by free-hand sectioning. This process was repeated several times, and then the sections were cut and transferred with the help of a camel hair brush to a watch glass containing water. With the help of a camel brush, the thinnest and most perfect sections were selected and stained. It was then observed under the microscope, which a photograph has undertaken. The structure and type of stomata, epidermal cell, Type of Trichomes also analyzed on this plants.

#### Preparation of powder Sample

To make the powder, samples of the plant material were washed with water and then placed in shaded, dry areas to dry. Then make a powder sample of *Euphorbia dracunculoides* Lam. With the help of Grinder. And use it in different phytochemical tests.

#### 4.4 Plant Extract Preparation

For 24 hours, 2 g of powdered plant material was dissolved in 10 ml of three different solvents (acetone, methanol, and water). This solution was filtered after being sonicated for 10 minutes.

#### 4.5 Plant material extraction

The Soxhlet extractor was used to extract the samples in 500 mL of ethanol at 600 °C for 8 hours. The extracts were dried at room temperature after extraction until they solidified.

#### 4.6 Phytochemical primary analysis

The following phytochemicals were screened using different organic solvent extracts of *Euphorbia dracunculoides* Lam. whole plant powder: carbohydrates, alkaloids, phenolic compounds, flavonoids, amino acids, glycosides, and terpenoids. Phytochemical qualitative tests in extracts were carried out according to the standard procedures described by Sofaware (1993), Trease and Evans (1989), and Harborne (1989). (1973). The following phytochemicals were screened for in the various extracts of *Euphorbia dracunculoides* Lam obtained with different organic solvents:

##### 4.6.1 Screening for Qualitative Information

Using standardized methods, a qualitative analysis was performed to identify the presence of various phytochemicals such as alkaloids, flavonoids, tannins and phenols, steroids and terpenoids, saponins, carbohydrates, glycosides, proteins, and amino acids.

Test for flavonoids.

To make an intense yellow color, mix 2 ml of the extract with a few drops of 20% sodium hydroxide. A few drops of 70% diluted hydrochloric acid were added to this, and the yellow color disappeared completely.

The presence of flavonoids in the sample extract is shown by the appearance of a yellow color in this observation. The yellow color then vanished.

Test for phenols.

2 mL of 5% aqueous ferric chloride were added to 2 mL of each extract; the formation of a blue color indicates the presence of phenols in the extract solution.

Test for Terpenoid

To 1 mL of extract from each solvent, add 0.5 mL of chloroform, followed by a few drops of concentrated sulfuric acid; the presence of terpenoids in the sample extract is indicated by the formation of a reddish brown precipitate.

Test for Steroids

To the 5 mL of aqueous plant crude extract, add 2 mL of chloroform and 2 mL of concentrated H<sub>2</sub>SO<sub>4</sub>. A red color appeared in the lower chloroform layer, indicating the presence of steroids in the sample extract.

Examine for amino acids.

Folin's Test

1 ml of sample is mixed with 1 ml of Folin's phenol reagent, and then 1 N of NaCl is added. The presence of tyrosine and tryptophan is indicated by the blue color that appeared.

Test for alkaloids.

A pair of drops of Meyer's chemical agent were value-added in the second section. The presence of alkaloids in the sample extract was indicated by a creamy white precipitate.

Carbohydrate tests (Barfoed's test)

Take a milliliter (1 mL) of the extract's aqueous solution and a milliliter (1 mL) of Barfoed's reagent were added to the test tube and heated in a water bath for 2 minutes before being observed; the presence of monosaccharides was indicated by a red precipitate.

Cardiac Glycoside Examination

Each extract was mixed with 1 mL of glacial acetic acid and 3 drops of a 1% aqueous ferric chloride solution.

The formation of a brown ring at the contact site indicates the presence of cardiac glycosides in the sample extract.

## 5. Results and Discussion

### 5.1 Result

Taxonomical classification

Kingdom : - Plantae-Plants  
 Subkingdom : - Streptophyta  
 Super division : - Spermatophyta –Seed plant  
 Division : - Magnoliophyta-Flowering plant  
 Class : - Magnoliopsida -Dicotyledons  
 Family : - Euphorbiaceae  
 Genus : - Euphorbia  
 Species : - *Euphorbia dracunculoides* Lam.

Synonyms

*Euphorbia dracunculoides* subsp. *eudracunculoides* Maire  
*Tithymalus dracunculoides* (Lam.) Klotzsch & Garcke

#### 5.1.1 Geographical Distribution

*Euphorbia dracunculoides* Lam. is native to Africa. Distributed in southwest Asia, northern Africa, Morocco, Tunisia, Algeria, Egypt, Libya, Northern Tropical Africa, Somalia, and Sudan in Asia, this plant is also distributed in tropical areas.

The Indian Subcontinent is made up of the states of Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Uttar Pradesh, West Bengal, Andhra Pradesh, and Rajasthan, as well as Pakistan.

#### 5.1.2 Ecological Distribution

For the good growth of plants, water availability and red soil are essential; in this soil, plants grow very well (Figure 1). Plant growth is greatly reduced in low-water and loamy soils (Figure 2). The plant's height is 20–30 cm.

#### 5.1.3 *Euphorbia dracunculoides* Lam. Morphological Characteristics

*Euphorbia dracunculoides* Lam Dragon Spurge is an annual or short-lived perennial herb plant.

**Habit:** Herb, sometimes observed under a shrub.

**Habitat:** Found as weeds in rice, wheat, or chickpea fields.

**Root:** main tap root system; another very small root was observed.

**Stem:** glossy, cylindrical in shape, green in color, and has very small leaves, so photosynthesis is also carried out by the stem. Trichomes are found in very small numbers or very rarely.

**Leaves:** green in color, very small, white parts observed, petiole absent, sessile leaves, reticulate venation, and alternate arrangement of leaves.

**Leaves shape:**-Linear (Narrow leaf) sometimes lanceolate, leaves apex Acute, leaves base Acute, entire leaf margin, leaf surface Glabrous.

**Venation:** Reticulate Venation, Phyllotaxy Alternate

**Inflorescences:** sessile Cyathium inflorescences, with axillary cymes and terminal 3-branched umbels forking many times, primary rays up to 5 cm long, leaf-like bracts on the involucre, which has a cuplike appearance, and nectaries on its upper parts.

**Stamen:** many stamen, not exerted from involucre.

**Gynoeceum:** Style long divided into two lobed, tricalpate ovule.

**Pollen:** round-shaped pollen.

**Fruit:** Peduncle Capsule Fruits

**Seeds:** 0.4cm in size, Ovoids cylindric.

## 5.2 Anatomy of Plant Parts

### 5.2.1 Stem Anatomy

**Epidermis:** In the younger stem epidermis, cells are made up of single-layered, flattened, elongated cells. In older stems, there are 3–4 layers of cork made up of thin-walled, radially arranged, rectangular, tangentially arranged, and elongated cells.(figure 6).

**Cortex:** The cortex is made up of collenchyma and parenchyma cells.

Collenchyma is arranged in two layers; after the collenchyma, parenchyma cells are arranged. Parenchymatous cells possess chlorophyll. These cells are also called chlorenchymatous cells.

After the cortex, the starch sheath was observed, and collenchyma cells were in this section.

After secondary growth, bundle cap is observed in cortical parts, which are composed of sclerenchymatous cells arranged in a circular pattern. In some cortex parts, stone cells are present that are lignified.

After the cortex pericycle was observed, the pericycle and endodermis were not differentiated.

Pith are arranged in the centre part. During secondary growth, secondary xylem arised the inner side of cambium and secondary phloem arised outer side of cambium. Secondary xylem is made up of parenchymatous cells and tracheids. Secondary phloem possesses sieve elements and parenchymal cells.

Pith is located in central parts made up of parenchymatous cells. In this portion, some large and some oval-shaped cells were observed. Some lactiferous cells are present in the pith.

### 5.2.2 Root anatomy:

The root of *Euphorbia dracunculodes* Lam. was discovered to be brown in color. The tap root system in these plants In the outline of the root, it is circular in shape (figure 7).

An outer layer of very thick epidermal tissue was observed in the cross-section of *Euphorbia dracunculoides* Lam. plants, which is made up of rectangular-shaped cells and has nine to ten layers in mature roots but only one layer in younger roots.

**Cortex:** - The cortical parts are mainly made up of collenchyma cells. Cells arranged very tightly in the intracellular space were absent. Stone cells present in this part

**Stele:** Stele is a primitive type found in the root's young and mature vascular cylinders. Outside of the stele pericycle observed, it is made up of 2–3 layers. The secondary phloem is made up of sieve elements and parenchymatous tissue. Secondary xylem consists of medullary rays, fibers, and tracheids; all elements are lignified.

Both the xylem and phloem are arranged angularly.

### 5.2.3 Leaves anatomy:

The morphological leaves linear shape and amphistomatic types.

In T.S. of the midrib portion(Figure 8) , *Euphorbia dracunculoides* Lam. upper epidermis is single-layered and made up of round-shaped cells. After these structures, chlorenchyma cells occur. Upper side: 2 layered; lower side: 3–4 layered arrangement in the lamina portion.

Midrib parts have a vascular cylinder in the central parts of the leaves. Vascular cylinders are arranged in the form of a C. Collateral types of vascular bundle Parenchymatous cells surround these structures, followed by spongy parenchyma cells .Lamina structures are linear in outline. Single-layered epidermis was observed.

Chlorenchymatous cells are divided into palisade and spongy parenchymatous cells. There were very few collateral vascular bundles observed after the upper epidermis was 2–3 layers thick and palisade cells were arranged.

Then, spongy parenchymatous cells are present in 2–3 layers. Trichomes are observed both the upper and lower epidermis.

The lower epidermis has single-layered cells .In this section, upper and lower epidermis parts and unicellular unbranched trichomes were observed.

### 5.2.4 Trichomes on plant parts :( Table 1)

**Trichomes on stem:**-The stem is very smooth, and trichomes are rare and in small numbers.

**Trichomes on leaves:** - Very long, simple, and needle-like trichomes were observed. Anisocytic and Animocytic types Stomata were observed in this plant leaves.

According to this paper, "Diversity of stomata and trichomes in *Euphorbia dracunculoides* Lam." (Sarojiji Devi 2013), trichomes are absent in the *Euphorbia dracunculoides* Lam. plant, and anisocytic and animocytic types of stomata are present. In present study Anisocytic and Animocytic stomata observed

## 1.3 Phytochemical analysis of Whole plant Sample.

Phytochemical analysis performed as per Standard methods. Table: - 3 Shown Phytochemical analysis. For phytochemical analysis three solvent used Acetone, Methanol and Water. Alkaloids absent in Acetone, Methanol and aqueous extract. Flavonoids, Amino Acids, Phenol, Steroids, Glycoside, present in three solvent .Terpenoides present in Methanol, Aqueous extract and absent in Acetone Extract. Carbohydrate absent in Acetone and Methanol extract and present in aqueous extract. In aqueous extract highest (7) phytochemical

constituents are observed. In Methanol extract second highest (6) phytochemical constituents are observed. In acetone extract lowest (5) phytochemical constituents are observed.

**Figures and Tables**



Figure 1 Plant of *E.dracunculoides*



Figure 2 Plant of *E.Dracunculoides*



Figure 3 Root



Figure 4 Flower



Figure 5 Fruit

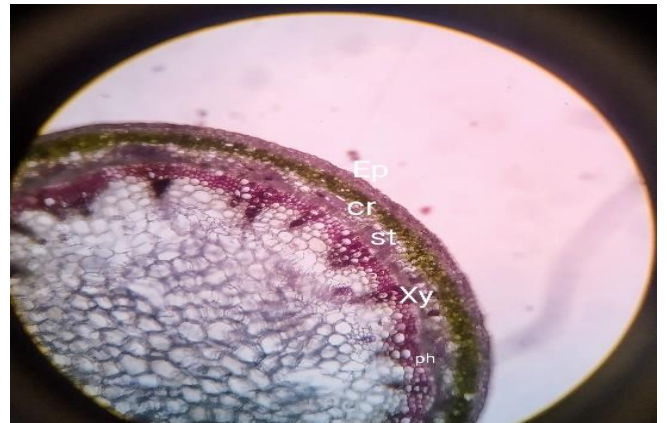


Figure 6 Stem Anatomy

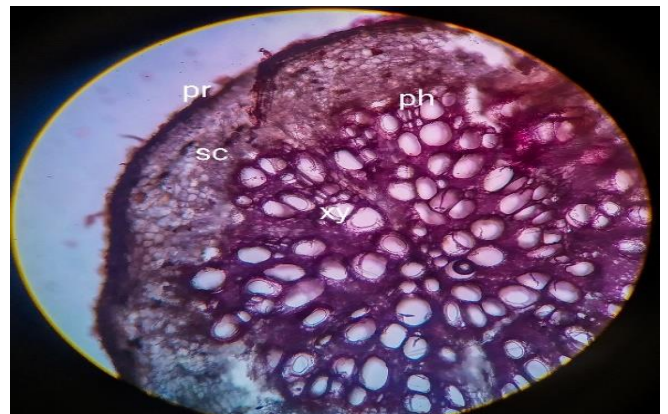


Figure 7 Root Anatomy

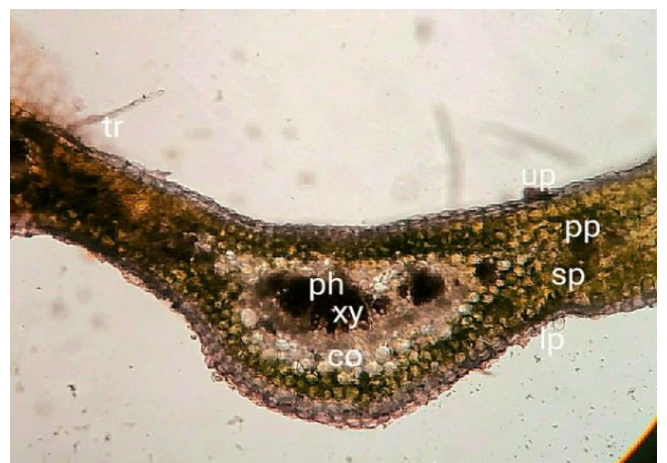


Figure 8 Leaves Anatomy

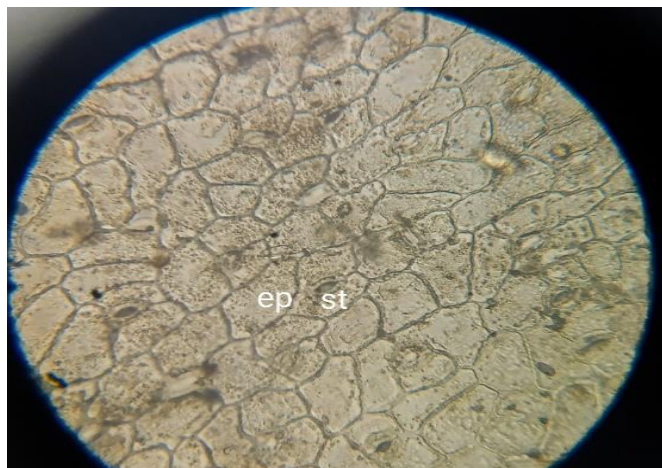


Figure 9 Stomata

Figure 6 Stem anatomy of *E. dracunculoides* Lam. Ep:- Epidermis, St:-Starch sheath, Xy:-Xylem, Ph:-Phloem, Pith:- Pith Figure 7 T.S. Of Root Pr:-periderm, Sc:-Secondary cortex, Ph:- Phloem, Xy:-Xylem  
 Figure 8 T.S. Of Leaves tr:-Unicellular Trichomes, Up:- Upper epidermis, Pp: - Palisade parenchyma,,sp;-spongy Parenchyma .Lp:-Lower epidermis, Ph:- Phloem, Xy:-Xylem ,Co:-Collenchyma  
 Figure 9 Stomata of *E. dracunculoides* Lam. St:-Animocytic stomata, ep:-epidermal cell

Table 1 .Trichomes on plant parts

Plant part	Trichomes	Types of Trichomes
Root	Absent	
Stem	Present	Single ,Needle like
Leaves	Present	Single, Needle Like

Table 2. Qualitative characters of *euphorbia dracunculoides* plant

Parameter	type
Leaf Type	Simple
Leaf Shape	Linear
Hb	Herb
Leaf Apex	Acute
Leaf Base	Acute Early Round
Leaf Margin	Entire
Leaf Surface	Glabrous
Lar	Simple & alternate
I.f	Campanulate

Hb=Herb, Lar=Leaf Arrangement, I.f=inflorescence

Table 3. Phytochemical Observation of *Euphorbia dracunculoides* Lam. plants Sample

Phytochemical Constituents	Acetone Extract	Methanol extract	Water extract
Alkaloids	-	-	-

Flavanoids	+	+	+
Amino acids	+	+	+
Phenol	+	+	+
Steroids	+	+	+
Glycoside	+	+	+
Terpanoids	-	+	+
Carbohydrates	-	-	+

+ = Present - =Absent

5.4 Discussion

The phytochemical screening is a process of tracing Secondary and Primary metabolites. Its conforms the presence of various phytochemicals which can be seen as potential source. Carbohydrate is best food Source for human body .Proteins are major source of energy it contains essential amino acid responsible for growth and worn-out tissue in Human. Alkaloids are frequently toxic to men and can have dramatic physiological effects. Alkaloids reduce the risk of cardiovascular disease such as hypertension by preventing excessive intestinal absorption of cholesterol .Flavonoids have large medicinal properties also have useful in cardio vascular effects and neuroprotective properties. Flavonoids are a class of polyphenolic compounds that have been shown to eliminate free radicals, inhibit hydrolytic and oxidative enzymes, and have anti-inflammatory properties. Phenol compound have defense properties like anti-aging, anti-inflammatory, anti-proliferative activities. Steroids have many different properties so useful in many disease like Asthmas, Muscles problem such as frozen shoulder, arthritis. The presence of these primary and secondary metabolites indicates that the plant may have industrial and medicinal applications.

This study provide information of Morphological Characteristics of plant which is very useful in taxonomical study , anatomical investigation provides Root, Stem and Leaves anatomy with details .

The morphological and anatomical characteristics of the root, stem, and leaves were studied in this study, as well as a phytochemical analysis of the entire plant sample. The macroscopic and microscopic description of a medicinal plant is the first step in determining its identity and purity, and it should be completed before any test is performed. (Asia Begum et al., 2017).

Morphological characteristics were most important for the study and identification of plants. Dragon spurge plants are annual or sometimes perennial herbs. These plants were native to Africa. They are mostly found in Africa, Europe, America, and India, among other places. These plants grow as weeds, mostly in wheat and rice. This plant grows in the winter season. Pollination is done by flies and the wind.

These plants have flowers that are both male and female (hermaphrodite). A very small yellow flower was observed, a bisexual, zygomorphic flower with both male and female flowers in the involucre, with the male flower not emerging from the involucre but the female flower emerging from the involucre cup of the bract. Bract having Nectary's on upper surface.

This plant shows epigeal germination. The current study revealed the primary morphological characteristics of plants in these plants, which have milky latex in all parts. It's mostly available on farms as weeds. Cyathium-type inflorescence in these plants Petiole is absent in all plants and mostly possesses single leaves of alternate types.

According to Gurucharan Singh, these plants contain a variety of medicinal properties and are used in herbal medicine.

The vascular cylinder of plants was found to be 2-3 layered, with xylem and phloem arranged angularly in an anatomical study. Stone cells are present and there is a starch sheath in the root section. Chlorenchyma, cells found in the cortex, and the bundle cap, made up of sclerenchymatous cells found in the cortex, are all found in the stem section. Secondary xylem and secondary phloem are observed after the pericycle. The pith region contains laticiferous sacs as well as starch grains.

*Euphorbia dracunculoides* lam. Trichomes are absent, according to Sarojini Devi's paper Diversity of stomata and trichomes in *Euphorbia dracunculoides* Lam. (Sarojini Devi et al.2013).

But the present study revealed single needle-like trichomes on the stem and leaves.

In *Euphorbia dracunculoides*, lam.. Plants have anisocytic and anisocytic stomata.(Figure 9).

The result shows that flavonoids, amino acids, phenol, steroids, glycosides present in acetone extracts, alkaloids, tetraploids, and carbohydrates are absent. In methanol extracts, flavonoids, amino acids, phenol, steroids, glycosides, and terpenoids are present, while alkaloids and carbohydrates are absent. In the water sample, flavonoids, amino acids, phenols, steroids, glycosides, terpenoids, and carbohydrates are present. Alkaloids are absent in this sample. The present study gives different results for phytochemical tests.

## 6. Conclusion and Future Scope

This work has contributed to explaining information about *Euphorbia dracunculoides* Lam. plants, including their morphology and anatomical characteristics, phytochemical tests, ecological and geographic distribution, etc. *Euphorbia dracunculoides* Lam. is an annual or perennial herb that possesses some medicinal properties. The current study concentrated on the morphology and phytochemistry of plant samples. Cyathium inflorescences, Tricolpate gynoecium, greenish stems, and nectaries; anisocytic and anisocytic stomata; and pointed, needle-like trichomes on stems and leaves are some of the most important morphological characteristics. In the future, this study will be useful for different activities like anti-inflammatory and antimicrobial activity and also for quantitative analysis of plants. Morphological and anatomical characteristics are important in the identification and authentication of plant-based crude drugs. The various parameters investigated in this study will also be useful in quality assessment and the detection of substances in herbal materials used by various pharmaceutical Researcher's.

## Data Availability

None

## Conflict of Interest

We do not have any Conflict of interest

## Funding Source

There was none.

## Authors' Contributions

**Miss. Asha .R.Vankar**, researched literature, conceived the study, carried out the investigation of *Euphorbia dracunculoides* Lam. plants and approval. And wrote First Manuscript. **Mr. Kaushik .C Patel** help in wrote the first and the final manuscript, provided concise results interpretation. Identification of plant done by him. Both authors reviewed and edited Final the manuscript and approved the final version of the manuscript.

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