



# FORMULATION AND EVALUATION OF ANIMAL FEED FROM CRESSA CRITICA.

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## Abstract

Nature has been good source of medical agent for thousands of years and an impressive number of modern drugs have been isolated from natural source, many based on their use in traditional medicine. Various medicinal plant has been used for years in daily life to treat disease all over world. The present study reveals the medicinal values of cressa cretica. The objective this work is to formulate and evaluate a polyherbal Feed purpose for providing nutrition and growth and production from herbal ingredients Maize, Broken rice, Wheat, Polish rice, Rap seed, Dicalcium phosphate, Multivitamin, Lysine & Methionine then Cressa cretica extract, passed through Soxhlet apparatus for extraction of hole dried plant of cressa cretica. And evaluated for its organoleptic and physio-chemical, microscopical characters and chemical evaluation. Then extract is combined with noted herbal ingredient. This formulation stimulate increase the milk level, and enhance the animal health, and also stimulate synthesis of collagen. The advantage of herbal feed is their nontoxic nature, reduce the allergic reactions and time-tested usefulness of many ingredients. Thus, in the present work, we found good properties for the animal health and further optimization studies are required on this study to find the useful benefits of feed on animal use as nutritional product.

## Key word:

Cressa cretica, feed, Multivitamin, Lysine & Methionine



## INTRODUCTION

Herbal medicine is used by up to 80% of the population in developing countries. *Cressa cretica* L. is a popular halophytic plant and is used in folklore medicine for ailments including diabetes, ulcers, asthma, anthelmintic, stomachic, tonic and aphrodisiac purposes, enriches the blood, and is useful in constipation, leprosy, and urinary discharges. The plant is traditionally used in Bahrain as expectorant and ant bilious agent. Scientific evidence suggests its versatile biological functions such as its antibacterial, antifungal, antitussive, anticancer with some other plants, anti-inflammatory, and improving testicular function in rats. In this article, a comprehensive account of the morphology, phytochemical constituents, ethno botany, and biological activities are included in view of the recent findings of importance on the plant, *C. cretic*.

In the last few years there has been an exponential growth in the field of herbal medicine and these drugs are gaining popularity both in developing and developed countries because of their natural origin and less side effects. Many traditional medicines in use are derived from medicinal plants, minerals and organic matter. A number of medicinal plants, traditionally used for over 1000 years named Ramayana are present in herbal preparations of Indian traditional health care systems.<sup>2</sup> In Indian systems of medicine most practitioners formulate and dispense their own recipes<sup>(1)</sup>.



### **Cressa cretica plant**

*Cretica* is a widely grown halophytic plant, known in Arabic as “Molleih” or “Nadewa” The plant, commonly found in coastal areas, is a small erect dwarf shrub, which is remarkably salt-tolerant. Ethnobotanical studies have reported that *c. cretica* has a stomachic, anthelmic and tonic



and in useful in constipation leprosy, asthma, urinary discharges, and in the treatment of diabetes and general debility. The plant is also known as antibilious and anti-tubercular and as an expectorant.

• **Properties of Cressa cretica :**

1. **Anti-inflammatory:** May help reduce inflammation and pain.
2. **Antimicrobial :** May help prevent infection and promote healing.
3. **Antioxidant :** May help protect against oxidative stress and cell damage.
4. **Anti-Ulcer :** May help reduce the severity and duration of ulcers .

**Animal Feed :**

Animal feed is the food given to animals which are domestic often refers to fodder in course of care and management of farm animals by humans for profit. Supply of quality feed ensures the health of animals. Various feeds include poultry feed, sheep husbandry, cat food, pet food, pig farming, cattle feeding, dog food, equine nutrition and bird food. It is possible to formulate balanced rations for growing and lactating animals only if the feed used conforms to the laid down specifications, for energy, protein, minerals, vitamins, etc. In order to provide animals with necessary nutrients to meet their requirements for maintenance, growth, pregnancy, and production of milk, to reduce the risks of animal health and to minimize excretions and emissions into the environment, the chemical composition of cattle feed used in the diet has to be precisely known(2).



**Animal Feed**



## METHADODOLOGY

- **Collection of plant material :**

The leaves of plant *Cressa cretica* is *Cressa cretica* (Linn) this species is also known as Rudravanti. Were collected from the local area of Maharashtra including Mumbai, Kolhapur, Pune Raygad Ratnagiri, Satara and ahilya nagar. *Cressa cretica* is typically cultivated during the spring and summer months. Earth One notes that repotting can be done in spring or early summer, and cuttings can be taken in the spring or summer and rooted in sandy soil. The plant's lifecycle also continues in the summer period when salt marsh areas drain. Additionally, the plant starts to shoot in the beginning of June and flowers and fruits from June to August withering in September (3).



**Collection of plant**

**Synonyms:**

<b>Sanskrit</b>	Rudravanti
<b>Marathi</b>	Lona, Rudravanti
<b>Hindi</b>	Rudravanti

**Taxonomic classification:**

<b>Kingdom</b>	Plantae
<b>Phyllum</b>	Angiosperms
<b>Class</b>	Magnoliatae
<b>Subclass</b>	Asteridae



Order	Polemoniales
Family	Convolvulaceae
Genus	Cressa
Species	Cretica

• **Equipment and Documentation :**

Essential tools for plant collection include:

- Field knives or scissors
- Gloves
- Field notebooks or collection sheets
- GPS device or mobile for geolocation tagging
- Cloth or paper bags for storing samples
- Labels indicating plant name, date, location, and collector’s name(4)

**Identification of plant:**

Incorrect identification of plant species can lead to **ineffective or toxic formulations**, posing serious risks to patient health. Hence, authentication of the plant material is critical, especially in pharmacognosy, herbal research, and drug development.

*Cressa cretica* has several regional names and morphological similarities with other halophytic species, making taxonomic identification essential.

**Morphological Identification**

Botanists begin the authentication process by examining the **morphological characteristics:**

- **Growth form:** Prostrate or decumbent woody herb
- **Leaves:** Small, linear-oblong, fleshy, densely hairy
- **Stems:** Woody at base, with branched, hairy shoots
- **Flowers:** Small, sessile, white to pale pink, arranged in dense clusters
- **Fruits:** Small capsules with one or two seeds(5)

**Drying and Processing:**



## Cleaning and Pre-Drying

Before drying, collected material is:

- **Washed lightly** with distilled or clean tap water to remove soil and dust
- **Spread on clean cotton cloths or mesh trays** in a single layer
- Allowed to drain and air dry under shade

## Drying Techniques:

There are several drying techniques depending on scale and purpose:

- **Shade Drying:** Most suitable for medicinal herbs like *Cressa cretica* to retain phytochemicals
- **Oven Drying:** Controlled drying at 40–50°C for research or pharmaceutical-grade use
- **Solar Dryers:** Used in rural or semi-urban settings with controlled ventilation

## Pulverizing and Storage:

Once dried, plant parts are powdered using grinders. Powdered materials are passed through sieves for uniformity and stored in:

- **Air-tight containers** (glass jars or HDPE containers)
- **Cool, dark environments** to prevent photo degradation

Each container is labeled with:

- Plant name
- Part used
- Date of collection and drying
- Batch number (for industrial use)(6)

## 2. Ingredient :

### I. ENERGY:

Maize, Broken Rice, Wheat, Bajra,

### II. PLANT PROTEIN :

Cressa Cretica

### III. ANIMAL PROTEIN:



Fish Oil, Meat Bone Meal

**IV. ANIMAL FAT:**

Mutton Tallow

**V. VEGETABLE FAT:**

Soya Crude Oil

**VI. CALCIUM SOURCE :**

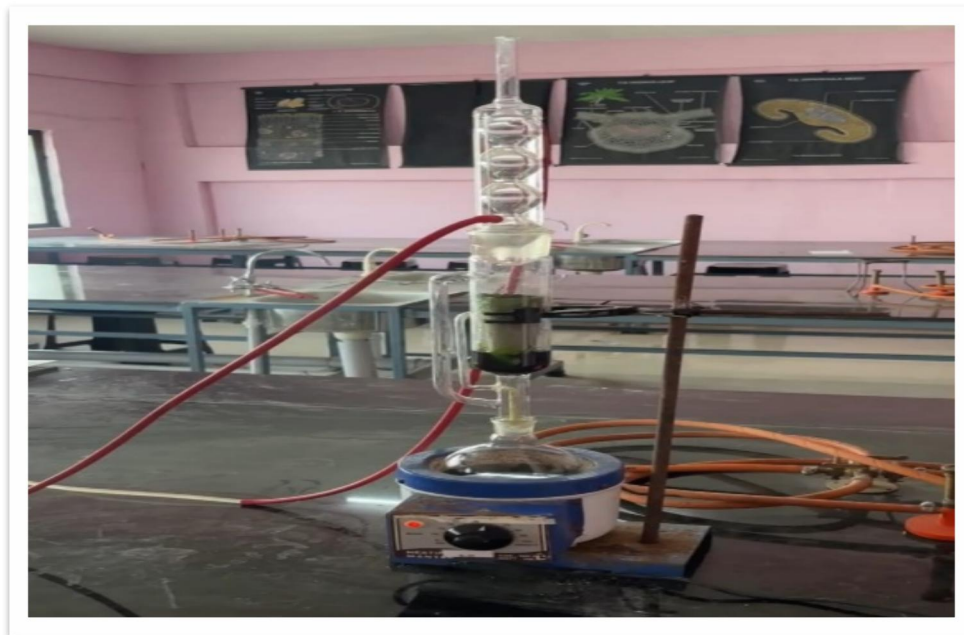
Lime Stone Powder (8)

### **Experimental data**

#### **Extraction process:**

After giving Cressa Cretica Plant, a thorough rinse with distilled water, the leaves parts were carefully separated. In accordance with the procedure outlined by Van-Acker et al., the Levels were air dried in a sun light or shed net at atmosphere Temperature for 48 hours, then ground into a fine powder and put through a 24-mesh screen. Using the Soxhlet extraction method, a 100-gram powdered sample was extracted for six hours at room temperature using either 800 mL of ethanol, methanol, dichloromethane, acetone, hexane, or ethyl acetate.

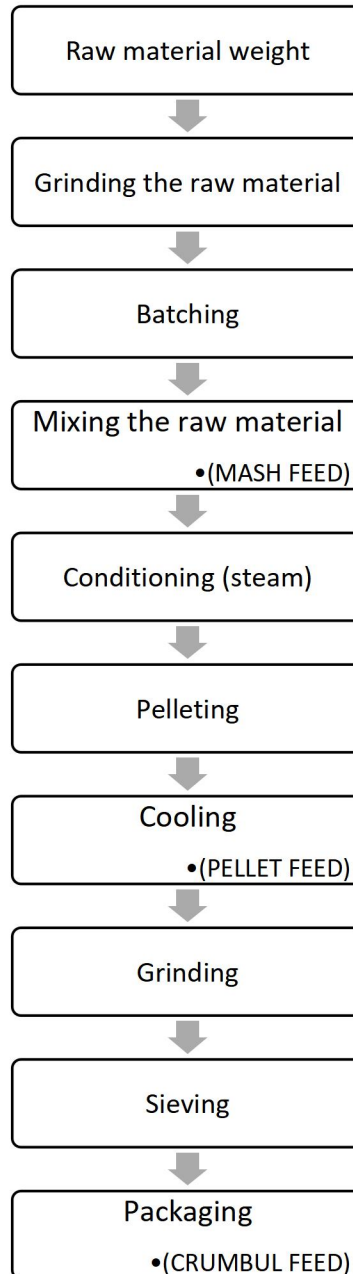
Leaves part were removed from the mixture by filtering it with Whatsman filter paper. To guarantee thorough extraction, the residue was extracted twice more under the same circumstances. A rotary evaporator was used to filter and evaporate the extracts to dryness at 60°C under decreased pressure. Before being used, the extracts were kept in a refrigerator at 4°C in dark bottles.



**Extraction of curcuma**



**General procedure for animal feed:**



**Procedure:**

- 1) **Accurately weight raw material as mentioned above.**
- 2) **Reduce the partical size of raw material.**
- 3) **Mix ingredients in specific orders.**



- 4) **Combine ingredients in a mixer to create a uniform blend.**
- 5) **Package and store the product in clean and dry place.**



**Product**

**Formulation Table:**

<b>Ingredient</b>	<b>Quantity for 1kg</b>
Maize	<b>0.42 gm.</b>
Broken rice	<b>0.118 gm.</b>
Wheat	<b>0.05 gm.</b>
Cressa critica	<b>0.33 gm.</b>
Polish rice	<b>0.03 gm.</b>
Rap seed	<b>0.015 gm.</b>
Dicalcium phosphate	<b>0.011 gm.</b>
Multivitamin	<b>0.005 gm.</b>



Lysine + methionine	0.012 gm.
Crude oil	0.01 gm.

## Evaluation

Feed evaluation involves assessing the quality and suitability of feedstuffs for animal

### 1. Colour:

color can reveal information about its nutritional value, maturity, and freshness. A rich nutrient profile is suggested by a green forage, which has a higher chlorophyll content, whereas oxidation or spoiling may be indicated by a brown or dark color

### 2. Odour:

High-quality feed usually has a pleasant, fresh smell, whereas musty or sour smells could be signs of fermentation, mold growth, or spoiling. Additionally, odor can be used to identify problems such as fermentation in silage or rancidity in fats.

### 3. Taste :

Each ingredient has a different taste, any change in the taste like bitterness in grains, soya, sunflower oil meal and groundnut cake indicates the presence of mycotoxins. The level of salt can be detected by tasting the ingredient and the feed. Bitter taste of rice polish indicates rancidity of fatty acids.

### 4. PH measurement :

pH measurement for animal feed is a crucial aspect of quality control and nutritional balance. A proper pH level in feed helps maintain the health and digestive system of animals. The pH of feed can range from 5.42 to 7.30, with individual ingredients varying from 5.21 to 11.51(9).

#### • Methods for Measuring pH in Feed:

##### I. pH Meters:

Portable pH meters can be used for accurate measurements of feed pH.

##### II. pH Strips:

PH strips or paper can also be used to determine the pH of feed samples (10).

**RESULT AND CONCLUSION.**

Properly formulated animal feed is crucial for **livestock health, productivity, and the production of safe and quality** animal products.

Optimizing feed quality leads to **increased weight gain, higher milk yields, and improved reproductive performance**, while **poor quality can result in stunted growth, reduced milk production, and increased disease susceptibility**.

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