INTRODUCTION

cardamom Sookshma Ela(Elettaria cardamomum Maton) and the Sthooela Ela(Anomum subulatum Roxb) can be found in Bhavaprakasha Nighantu[4], Dhanwantari Nighantu[5], and Katiyadeva Nighantu[6]. In case of retention of urine and dysuria[7] the powder of Elettaria cardamomum and Amalaki Rasa(Juice of Emblica officinalis) is advised. In the progressive cataract the Ela(Elettaria cardamomum Maton) powder is immersed in Goat’s urine for three days and used as Anjana(Officium)[8]. Arab traders first introduced cardamom to the west and the Greeks and Romans used it for perfume, medicine and flavouring agent. The cardamom may have been used in Ayurvedic medicine as early as the 4th century BC[9]. It is one of the contributor of Masala tea in India. It is one of the ingredient in Chayavanaprasha. The cardamom is used as a food plant by the larvae of the moth Endoclita hosei[10]. It is commonly used in indigestion, nausea, vomiting, pulmonary diseases, stomachache, heartburn, throat troubles, congestion of the lungs, kidney stones[11].

AIM OF THE STUDY
The review aims to provide brief introduction, pharmacological actions, traditional uses, modern research activities, botanical description, chemical composition, biological activities on the basis of digital scientific database.

MATERIAL AND METHODS
A survey was done by online as well as Ayurvedic classical texts books. The data were obtained by several electronic scientific databases, articles, and the additional information was obtained and discussed from the various Ayurvedic classical texts.

RESULTS
The Elettaria cardamomum Maton and Anomum subulatum Roxb are perennial herbaceous plant belong to Zingiberaceae family. The cardamom fruits are widely used as spices and flavouring agents in foods, and are often recognized by it’s health properties. The drug showed the importance of chemical constituents including carbohydrates, proteins, minerals, lipids, essential oils, flavonoids, terpenoids, carotenoids. The drugs possess biological roles such as antioxidant, antibacterial, gastroprotective, anti inflammatory, analgesic, anti spasmodic and insecticidal activities. The drug powder also helps in chronic cigarette de-addiction. The results supports with an Ayurvedic view like Mukha Shodhana(Cleanses oral cavity), Durgandha Nashanat(Releives bad breath) due to it’s antibacterial actions Rochana(Promotes taste), Deepana(Appetizer), Pachana(Digestive), and Anulomana(Promotes normal evacuation of stool) due to it’s gastro protective action. I The Hridya(Cardio tonic) action is due to its anti oxidant property therefore advised in Hridaya Daurbalyat(Cardiac weakness). It helps to alleviate Kasa(Cough), Shwasa(Dyspnoea) due to it’s anti inflammatory actions. Balya(Tonic) and recommended in Daurbalya(General weakness), and Kshaya Roga(Tuberculosis) due to it’s anti inflammatory, antibacterial and anti oxidant properties.

DISCUSSION
The data of Sookshma Ela(Elettaria cardamomum Maton) and Sthooela Ela(Anomum subulatum Roxb) were obtained by several electronic scientific databases, articles, and the additional information was obtained and discussed from the various Ayurvedic classical texts.

Botanical Description[12].

Ela(Elettaria cardamomum Maton) is a robust perenial herb, up to 5mts tall, growing in a thick clump, with branched rhizomes from which arise 10-20 erect leafy shoots composed of the leaf sheaths and numerous decumbent flowering shoots.

Patra(Leaves)-Distichous petiole up to 2.5 cm long, sheathing at base and together with other sheaths forming at base and together with other sheaths forming the pseudostem; ligule entire, up to 1cm long, blade lanceolate, 25-100cms by 5-15cms, apex acuminate, dark green and glabrous above, light green and glabrous or pubescent beneath.

Pushpa Manjari(Inflorescence)- A prostrate, panicle, up to 1.2 m long, arising from the rhizome at the base of a leafy shoot; bracts alternate, lanceolate, up to 3cm each with an axillary, usually 2-3 flowered cincinnus; bracteole tubular, up to 2.5cms long.

Flowers bisexual, zygomorphic, about 4cms long. Calyx tubular, up 2cms long, with 2-3 teeth, green, corolla tubular, 3-lobed, tube as long as the calyx, lobes 1-1.5 cms long, up to lcm wide, obscurely 3 lobed, white but streaked with violet; lateral staminodes inconspicuous, subulate, anther sessile, thecas about 1cm long, parallel, connective prolonged into a short crest; pistil with 2-3 mm long ovary, style slightly longer than antther, stigma capitate, small.

Phala(Fruit) - A globose or sub cylindrical trilocular capsule, 1-2 cm long, pale green to yellow, drying brown.
**Beeja (Seeds)** - 15-20 per fruit, angled, about 3mm long, dark brown, aromatic, with thin mucilaginous aril.

**Chemical Composition**

The dried fruit of cardamom contains an essential oil, fixed oil, pigments, proteins, cellulose, pentosans, sugars, starch, silica, calcium oxalate, and minerals. The approximate composition of dried fruits per 100gms is water 20g, protein 10g, fat 2g, carbohydrates 42g, fibre 20g, ash 6g. The major constituent of seed is starch up to 50% while in husk it is crude fibre up to 31%. The whole cardamom fruits usually have an essential oil content of 3.5-7%. The essential oil located predominantly in seeds which comprise 59%-79% of the whole dried fruit weight. The seeds of freshly harvested cardamom may contain as much as 11% essential oil. Cardamom oil is best obtained by steam distillation of fresh seeds. It is colourless or pale yellow oil which darkens when exposure to light. The essential oil comprises mainly 1,8-cineole 20%-60% and alpha terpinyl acetate 20%-53% together with smaller amounts of other oxygenated monoterpenes, monoterpen hydrocarbons and sesquiterpenes. This oil gives cardamom the pleasant odour and the characteristic warm, slightly pungent taste. The fatty oil content of the fruit has been reported to range from 1%-10%, the oil is predominantly present in the seed. Ten fatty acids have been identified with the major constituents being palmitic 28%-38%, oleic 43%-44% and linoleic acids 2%-16%.

**Synonyms**

- Triputa - The fruit is triangular shaped and has three surfaces.
- Puta -
- Nishkuti - The seeds enclosed by leathery layer like pouch.
- Bahula - The fruit has many seeds.
- Truti - The seeds are very small.
- Upakunchika - Fruits are contracted.
- Bahula Gandha - Elas has strong and pleasant odour.
- Bhula Truti - More seeds
- Tuthya - It alleviates pricking pain.
- Chandra - Coolant similar to moon
- Baala - Smaller variety
- Tridiva - Triangular shaped fruit
- Mashi - Seeds are black in colour
- Trivodbhuta - Triangular shaped ,Pod fruit
- Kanyak - Possess small seeds
- Chandrabala - Coolant similar to moon.
- Dravidi - Cultivated in south India

**Brihad Ela** - Bigger Variety
**Patra Ela** - Pseudo stem
**Twag Sugandhika** - Aromatic plant
**Kapota Varna** - Looks like colour of pigeon
**Bala Ela** - Smaller variety

**GANA**

According to Acharya Charaka[15], Shwasahara Gana, Angamara Prashamana Gana, Katuka Skandha, Shiro Virechanopaga Gana.
According to Acharya Sushruta[16], Eladi
According to Acharya Vagbhat[17], Eladi
According to Dhanwantari Nighantu[18],
According to Raja Nighantu[19].
According to Madanapala Nighantu[20].
According to Kayadeva Nighantu[21].
According to Priya Nighantu[22].
According to Bhavaprakasha Nighantu[23].
According to Chandra Nighantu[24].

**Adulteration And Substitution**


**Rasa Panchaka**

- **Rasa** - Katu, Madhura
- **Guna** - Laghu, Ruksha
- **Virya** - Sheeta Virya
- **Vipaka** - Madhura

**Pharmacological Actions As Per Ayurvedic Science**

**Dosha Karma** - It is Tridoshahara (Alleviates three Doshas), recommended in diseases of Vata, Pitta and Kapha

**Sansthanika Karma** (Systemic actions) - Pachana

**Sansthana** - It is Mukha Shodhana (Cleanses oral cavity), *Durgandha Nashana* (Relieves bad breath), *Chardinigranana* (Subsides vomiting), *Trishna Nigrahana* (Subsides excess thirst), *Rochana* (Promotes...
taste), Deepana(Appetizer), Pachana(Digestive), and Anulomana(Promotes normal evacuation of stool). It is indicated in Mukha Roga(Diseases of mouth), Vamana(Vomiting), Trishna(Excess thirst), Aruchi(Loss of taste), Agnimandhya(Loss of appetite), Udarashoolaa(Pain abdomen), Adhmana(Distention of abdomen), Arsha(Haemorrhoids).

Raktavaha Sansthanaa- It is Hridya(Cardio tonic) therefore advised in Hridaya Daurbalya(Cardiac weakness).

Shwasana Sansthanaa- It is Kapha Nissarakaa. It helps to alleviate Kasa(Cough), Shwasa(Dyspnoea).

Mutravaha Sansthanaa- It is Mutrajananaa(Promotes urination). It is recommended in Mutraakrichra(Dysuria).

Tapakrama- It is Daha Prashamanaa(Alleviates heat). It alleviates Daha Roga.

Satmikaraana- It is Balya(Tonic). It is used in Daurbalya(General weakness), and Kshaya Roga(Tuberculosis).

Part used- Beeja(Seeds)

Formulations- Elakanadi Kashaya, Eladi Ghrita, Eladi Taila, Chaturjataka Churna.

Dosage- Choorna(Powder)- 0.5 -1gm

Pharmacological Actions As Per Modern Science-

The volatile oils were demonstrated to be good sources of bio active compounds, in the form of cyclic and acyclic, non-oxygenated or oxygenated hydrocarbons of monoterpenes, sesquiterpenes and diterpenes. It is used in the treatment of relieving pain, wounds, nausea, cancer lesions in folk medicines[27]. The extract haves have potential for being used as preservatives in the food industry owing to their antibacterial and flavouring properties, and are considered as preferred alternative to synthetic compounds[28]. The essential oils of Elettaria cardamomum Maton grown in India, and Guatemala on shows significant actions on Gram negative bacteria and Gastro intestinal disorders[29]. In 2018, several species were removed from Elettaria and placed in a new genus called Sulettaria. These species are recognized as of October 2018- Elettaria brachycalyx S. Sakai & Nagam, Sarawak, Elettaria kapitensis S. Sakai & Nagam, Sarawak, Elettaria linearicristata S. Sakai & Nagam, Sarawak, Elettaria longipilosa S. Saki & Nagam, Sarawak, Elettaria multiflora(Ridl) R.M.Sm, Sumatra, Sarawak, Elettaria rubida R.M.Sm, Sabah, Sarawak, Elettaria surculosa(K.Schum) B. L. Burtt and R.M.Sm, Sarawak Poulsen, Axel; Baserud Mathisen, Helena; Newman, Mark; Ardiyani, Marlinia; Lofthus, Bjora, Charlotte(2018-08-01)[30]. Decoction of Amomum subulatum rhizomes are used in the therapy of jaundice[31].

Antibacterial Activity[32]. The ethanol extract of E. cardamomum possess antibacterial action at the dose of 512micro gram/ml.

Gastroprotective activity[33]. The Gastroprotective activity of E. cardamomum was found in the petroleum ether soluble extract which inhibited lesions by nearly 100%at 12.5 mg/kg in the aspirin-induced gastric ulcer. Methanol extract also possess gastroprotective effect.

Anti-inflammatory, Analgesic and Antispasmodic Activity[34]. Seeds of E.cardamomum possess anti inflammatory, analgesic and antispasmodic. In carrageenan induced rat paw oedema the oil extract of E. cardamomum seeds, in doses of 175 and 280 micro liters/kg were found to reduce the inflammation. Analgesic activity was evaluated by p-benzoquinone-induced writing method but antispasmodic activity was evaluated in vitro. Studies reveal that antispasmodic action is produced through muscarinic receptor blockage.

Antioxidant property[35]. The cardamom oil is effective as an antioxidant property because of glutathione.

Cigarette De-addiction[36]. The cardamom used to ease cigarette addiction. Eating a few seeds of cardamom can safely be recommended to initially minimize the number of cigarettes being smoked and slowly the smoker may give up the chronic addiction to chain smocking.

Skin disorders[37]. The 27 group of plants including cardamom is used in promoting skin complexion, destroying itching and pustules

CONCLUSION

The Elettaria cardamomum Maton and Amomum subulatum Roxb are perennial herbaceous plant belongs to Zingiberaceae family. The seed pods have a strong, camphor like flavour, used as spice. The drugs posses biological roles such as antioxidant, antibacterial, gastroprotective, anti inflammatory, analgesic, anti spasmodic and insecticidal activities. The present work dealt with the data were obtained by several electronic scientific databases, articles, and the additional information is obtained from the various Ayurvedic classical texts.

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