

**DETERMINATION OF SWELLING INDEX OF *TILA*(*SESAMUM INDICUM* LINN),  
*ERANDA*(*RICINUS COMMUNIS* LINN), *KULATTHA*(*DOLICHOS BIFLORUS* LINN),  
*VIDANGA*(*EMBELIA RIBES BURM. F.*)****\*Dr. Umakant N. Rabb**Associate Prof. Department of Dravyaguna Vijnana, Shri. Ravi Patil Health and Education Society's, Dr. Ravi Patil  
Ayurvedic Medical College, Hospital and Research Centre, Honaga, Belagavi, Karnataka, India.

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**\*Corresponding Author****Dr. Umakant N. Rabb**Associate Prof. Department of  
Dravyaguna Vijnana, Shri. Ravi  
Patil Health and Education  
Society's, Dr. Ravi Patil  
Ayurvedic Medical College,  
Hospital and Research Centre,  
Honaga, Belagavi, Karnataka,  
India.**ABSTRACT**

To determine the swelling of crude drugs in water, the drugs with mucilage absorb water and swell. In mucilage polysaccharide containing hexos and pentose sugars and uronic acids present in the cell walls of certain seeds. The higher the mucilage content, greater will be the swelling index. Mucilage swells by absorbing water. This helps in thickening the membranes and seed germination. As a bulk forming laxative in treatment of constipation. The outermost layers of plant diaspores may include a seed coat or pericarp which are composed of multiple cell layers of cell that surround the embryo and the endosperm. These cells have specialized cellular features that protect the embryo and influence seed dormancy, dispersal and germination. Mucilage is most commonly produced by the seed coat epidermal cells. The mucilage is deposited as an extracellular matrix between the primary cell wall and the plasma membrane. When mature seeds are exposed to water the hydrophilic mucilage extrudes and expands to form a hydro gel that encapsulates the seed. These mucilaginous drugs are soluble in dietary fiber which induce the peristaltic movements and relieves constipation. These mucilage is also help to disintegrate in formulation of tablets. The *Tila* seeds are *Katu*(Pungent), *Tikta*(Bitter), *Kashaya*(Astringent), in taste, *Katu Vipaka*(Pungent in post digestive effect), *Swadu* (Palatable), *Snigdha*(Demulcent), *Ushna*(Hot in potency). The *Eranda* is *Tikta*(Bitter), *Madhura*(Sweet), *Ushna Virya*(Hot in potency), *Malabhedaka* (Laxative). The *Kulattha* is *Tikta*(Bitter in taste), *Katu Vipaka* (Pungent at post digestive effect). *Vidanga* is *Katu Vipaka*(Pungent at post digestive effect), and *Krimi Nashaka*(Alleviates worms infestation). In the present work *Tila*(*Sesamum indicum* Linn), *Eranda*(*Ricinus communis* Linn), *Kulattha*(*Dolichos biflorus* Linn), *Vidanga* (*Embelia ribes* Burm. f.) are subjected for experimentation to assess the *Snigdha*(Demulcent), and *Ruksha* (Dryness).

**KEYWORDS:** Swelling index, Mucilage, disintegration, *Tila*, *Eranda*, *Vidanga*, *Kulattha*.**INTRODUCTION**

The swelling index is used to find the swelling capacity given drugs. When drug is dipped into the water in a measuring cylinder it gets swell up after some time by absorbing it. The drugs selected for this experimentation are *Tila*(*Sesamum indicum* Linn), *Eranda*(*Ricinus communis* Linn), *Kulattha*(*Dolichos biflorus* Linn), *Vidanga*(*Embelia ribes* Burm. f) and The pharmacological actions of these drugs are stated below;

***TILA*<sup>[1]</sup>****Botanical Name-** *Sesamum indicum* Linn**Family-** Pedaliaceae**Therapeutic Actions-** *Tila* seeds are *Katu*(Pungent), *Tikta*(Bitter), *Kashaya*(Astringent), in taste, *Katu Vipaka*(Pungent in post digestive effect), *Swadu* (Palatable), *Snigdha*(Demulcent), *Ushna*(Hot in potency),*Kapha-Pitta Shamaka*, *Balya*(Tonic), *Keshya*(Hair tonic), *Hima Sparsha*(Cold in touch), *Stanya*(Promotes breast milk), *Vrina Hita*(Heals wounds), *Dantya*(Strengthen the teeth), *Grahi*(Absorbent), *Vatagna*(Pacifies Vata), *Agniprada*(Increases appetite), *Shukrala*(Black seeds).***ERANDA*<sup>[2]</sup>****Botanical Name-** *Ricinus communis* Linn**Family-** Euphorbiaceae.**Therapeutic Actions-** The *Eranda* is *Tikta*(Bitter), *Madhura*(Sweet), *Ushna Virya*(Hot in potency), *Malabhedaka* (Laxative), subsides *Vata Dosha*, *Rakta Vikara*(Diseases of blood). Both types of *Eranda* are *Shukravardhaka* (Promotes semen), *Madhura*(Sweet), subside *Pitta*, *Vata Doshas*.

**KULATTHA**<sup>[3]</sup>**Botanical Name-** *Dolichos biflorus* Linn**Family-** Leguminosae**Therapeutic Actions-** The *Kulattha* is *Tikta* (Bitter in taste), *Katu Vipaka* (Pungent at post digestive effect), *Chakshushya* (Good for eyes), *Vrina Ropaka* (Heals wound and ulcer), alleviate *Vibandha* (Constipation), *Adhmana* (Distention of abdomen), *Arsha Shoola* (Haemorrhoidal pain).**VIDANGA**<sup>[4]</sup>**Botanical Name-** *Embelia ribes* Burm f.**Family-** Myrsinaceae**Therapeutic Actions-** It is *Katu Vipaka* (Pungent at post digestive effect), and *Krimi Nashaka* (Alleviates worms infestation). It Subsidies *Kapha* and *Vata Doshas*, *Shoola* (Pain), *Anaha* (Flatulence), *Arti* (Spasmodic pain).**MATERIALS AND METHODS**

- Measuring cylinder
- Stopper
- Distilled water
- Spatula
- Weighing machine

**RESULTS**

SL.NO	DRUGS	SWELLING INDEX
1.	<i>Tila</i> ( <i>Sesamum indicum</i> Linn)	2.5ml
2.	<i>Eranda</i> ( <i>Ricinus communis</i> Linn),	1.5ml
3.	<i>Kulattha</i> ( <i>Dolichos biflorus</i> Linn),	3.75ml
4.	<i>Vidanga</i> ( <i>Embelia ribes</i> Burm. f).	5.5ml

**DISCUSSION**

The drugs *Tila* (*Sesamum indicum* Linn) seeds are *Katu* (Pungent), *Tikta* (Bitter), *Kashaya* (Astringent), in taste, *Katu Vipaka* (Pungent in post digestive effect), *Swadu* (Palatable), *Snigdha* (Demulcent), *Ushna* (Hot in potency), *Kapha-Pitta Shamaka*, *Balya* (Tonic), *Keshya* (Hair tonic). The *Eranda* (*Ricinus communis* Linn) is *Tikta* (Bitter), *Madhura* (Sweet), *Ushna Virya* (Hot in potency), *Malabhedaka* (Laxative), subsides *Vata Dosh*, *Rakta Vikara* (Diseases of blood). Both types of *Eranda* are *Shukravardhaka* (Promotes semen), *Madhura* (Sweet), subside *Pitta*, *Vata Doshas*. The *Kulattha* (*Dolichos biflorus* Linn) is *Tikta* (Bitter in taste), *Katu Vipaka* (Pungent at post digestive effect), *Chakshushya* (Good for eyes), *Vrina Ropaka* (Heals wound and ulcer), alleviate *Vibandha* (Constipation), *Adhmana* (Distention of abdomen), *Arsha Shoola* (Haemorrhoidal pain). The *Vidanga* (*Embelia ribes* Burm. f.) is *Katu Vipaka* (Pungent at post digestive effect), and *Krimi Nashaka* (Alleviates worms infestation). It Subsidies *Kapha* and *Vata Doshas*, *Shoola* (Pain), *Anaha* (Flatulence), *Arti* (Spasmodic pain).

**Calculation****Swelling index**= Final volume - Initial volume

- Sample of crude drugs

**METHOD / PROCEDURE**

- Weigh about 1 gm of given sample of crude drug.
- Transfer the sample to 25ml measuring cylinder and fill up to 25 ml mark with distilled water.
- Close the measuring cylinder by stopper and leave it undisturbed for 24 hours after shaking it well.
- After 24 hours observe the measuring cylinder and measure the volume occupied by the swollen drug.
- Genuine seed of sample occupy volume not less than 10ml.

**AIMS AND OBJECTIVES**

- To determine the swelling index of the *Tila* (*Sesamum indicum* Linn), *Eranda* (*Ricinus communis* Linn), *Kulattha* (*Dolichos biflorus* Linn), *Vidanga* (*Embelia ribes* Burm. f.).
- To find out the swelling capacity of the *Tila* (*Sesamum indicum* Linn), *Eranda* (*Ricinus communis* Linn), *Kulattha* (*Dolichos biflorus* Linn), *Vidanga* (*Embelia ribes* Burm. f.).

**CONCLUSION**

Swelling index of the given samples of crude drugs of *Tila* (*Sesamum indicum* Linn) is **2.5ml**, *Eranda* (*Ricinus communis* Linn) is **1.5ml**, *Kulattha* (*Dolichos biflorus* Linn) is **3.75ml**, *Vidanga* (*Embelia ribes* Burm. f) is **5.5ml**. The *Tila* (*Sesamum indicum* Linn) and *Eranda* (*Ricinus communis* Linn), are *Snigdha* (Demulcent) and have less absorption than the *Kulattha* (*Dolichos biflorus* Linn) and *Vidanga* (*Embelia ribes* Burm. f) as they are *Ruksha* (Dry) in nature. These mucilagenous drugs are soluble in dietary fiber which induce the peristaltic movements and relieves constipation. Helps to disintegrate in formulation of tablets.

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