

FORENSIC MEDICINE

## IRRITANT PLANTS

# CROTON TIGLIUM

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Roll No.8

# IRRITANT PLANTS

## CLASSIFICATION

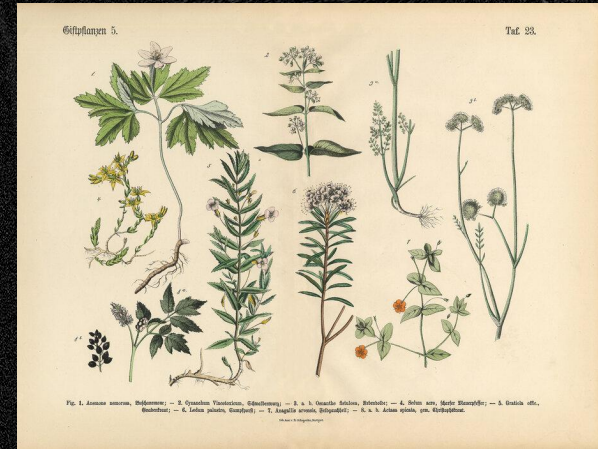
### 1. Oropharyngeal Irritant Plants

Eg. : Caladium, Dumbcane



### 2. Gastric Irritant Plants

Eg. : Castor, Colocynth, Croton, Daffodil, Marking nut, Rosary pea, Spider lily



### 3. Intestinal Irritant Plants

Eg.: English ivy, Horse chestnut, Pokeweed



### 4. Dermal Irritant Plants

Eg.: Bull nettle, poison ivy



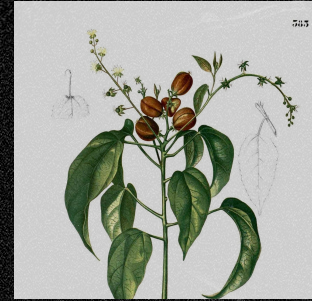
# Croton Tiglium

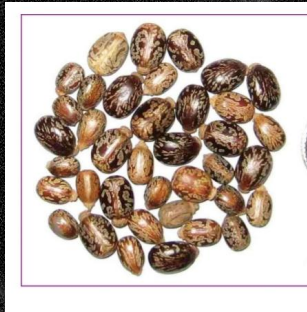
(നെൽപാല , നീർവാളം)

Botanical Name: *Croton tiglium*

## Physical Appearance

- This plant belonging to family Euphorbiaceae grows well in Assam, Bengal, and the Western Ghats.
- It is a small evergreen tree with ovate or elliptical leaves which are narrow-pointed, toothed, and 2 to 4 inches long, varying in colour from metallic green to bronze, orange, or yellowish
- Seeds are oval, smooth, 1 to 2 cm long, and brownish in colour





| S.No | Feature                | Castor seeds                                                        | Croton seeds                                                                  |
|------|------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 1.   | Appearance             | Shiny brown with mottled patches. Appear polished.                  | Dark brown, or dull gray shell, which on scraping becomes black. Appear dull. |
| 2.   | Size                   | Two sizes. Smaller is $1.25 \times 0.85$ cm. Larger double the size | One size. Almost same as the smaller castor seed                              |
| 3.   | Cross section of lumen | Circular                                                            | Slit like with radiating creases                                              |



**Fig. 37.4:** Seeds of *Croton tiglium*

## Uses

The seeds, oil, and root extract are used as a drastic **purgative** in folk medicine.



## Toxic Part

Stem, leaves, seeds.



## Fatal dose:

Seeds- 4 , croton oil-20 drops

*Fatal period: 6 hours to 3 days*

## Toxic Principles

- Crotin (toxalbumen).
- Crotonoside (glycoside).

# Clinical Features

## Ingestion

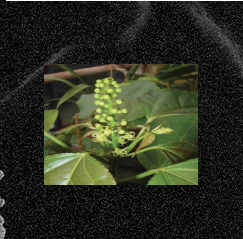
(1) GIT - Ingestion results in burning pain in the upper GI tract, vomiting, tenesmus, watery or blood-stained diarrhoea

(2) Systemic - hypotension, collapse, coma, and death

## Application on skin

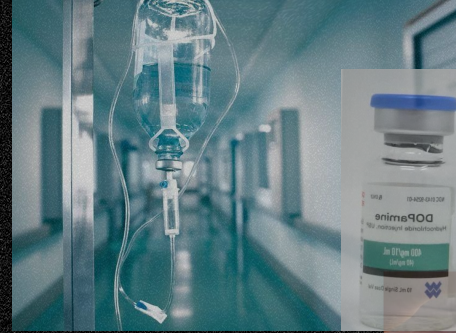
Rubbing the latex of these plants to the face, or chewing on the stem may result in erythema, swelling, and blistering. Initial symptoms of reddening and swelling occur in 2 to 8 hours, with vesicle and blister formation peaking in 4 to 12 hours.

Severity depends on the amount of plant latex and the duration of contact.



# Treatment

1. Decontamination : gastric lavage
2. Treatment of shock with IV fluids and dopamine.
3. Administration of cold milk may alleviate the GI irritation.



## Postmortem Appearance

- Mucosa of GIT: congested , inflamed , excoriated
- All internal organs : congested

# Medicolegal Importance

- **Accidental poisoning** : results from ingesting croton seeds or oil by mistake, or when taken in large doses as medicine (purgative), or by inhalation of dust.
- Ayurveda : may cause poisoning if incorrectly used
- Abortifacient – Root and oil
- Suicide and homicide: rare
- Arrow poisoning
- Chemical peels
- Poisoning animals
- Additive to fuel ( US in world war II)



**Reference:**

Modern Medical Toxicology - V V Pillay 4th edition

Forensic Medicine and Toxicology - Anil Aggrawal

THANK YOU