



Phytochemical and pharmacological action of active constituent of *Trichodesma Indicum* (boraginaceae)

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ABSTRACT

- ▶ **Introduction:** *Trichodesma indica* (*Boraginaceae*) aerial parts is commonly used in the traditional systems of medicine against various ailments like urinary tract disorders, skin irritations, worm disturbances, as a component in health tonic preparation etc.
- ▶ **Objectives:** The present study gives first insight of anti-microbial, anthelmintic, anti-oxidant properties and preliminary phytochemical analysis of the aerial parts of *Trichodesma indica*.
- ▶ **Methodology:** All the analysis was done according to standard protocols.



► **Plant profile:**

- *Trichodesma Indicum*: Aerial parts (*Trichodesma Indicum*.) is cultivated primarily for its kernel obtained from the fruit which is chewed in its tender, ripe or processed form. It belongs to the family Boraginaceae.
- Kingdom – Plantae
 - -Angiosperms
 - -Eudicots
 - -Asterids
- Order - Unplaced
- Genus - Trichodesma



Geographical Source :

- ▶ 40-45 species distributed in Tropical and subtropical regions of Africa, Asia and Australia
 - ▶ One species in China.
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▶ TLC LAYER CHROMATOGRAPHY :

▶ Principle :

Separation of TLC is effected by the application of the mixture or the extract as a spot or thin line in to a sorbent that has been applied to a backing plate. Then it is placed into a tank with sufficient suitable solvent .The solvent front then migrates up the sorbent by capillary action, a process known as development.

- ▶ The information provided by a finished chromatogram includes the ‘migrating behavior’ of the separated substances. It is given in the form of R_f value (Retention factor)

$$\text{Rf} = \frac{\text{Compound distance from origin (midpoint)}}{\text{solvent front distance from origin}}$$

- ▶ solvent front distance from origin

- ▶ Profile of Ethanolic extract

- ▶ Stationary phase - silica gel G

- ▶ Mobile phase - chloroform+ethanol+25% ammonia

- ▶ (18:2:2)

- ▶ Acetone+ Diethyl ether +25% ammonia

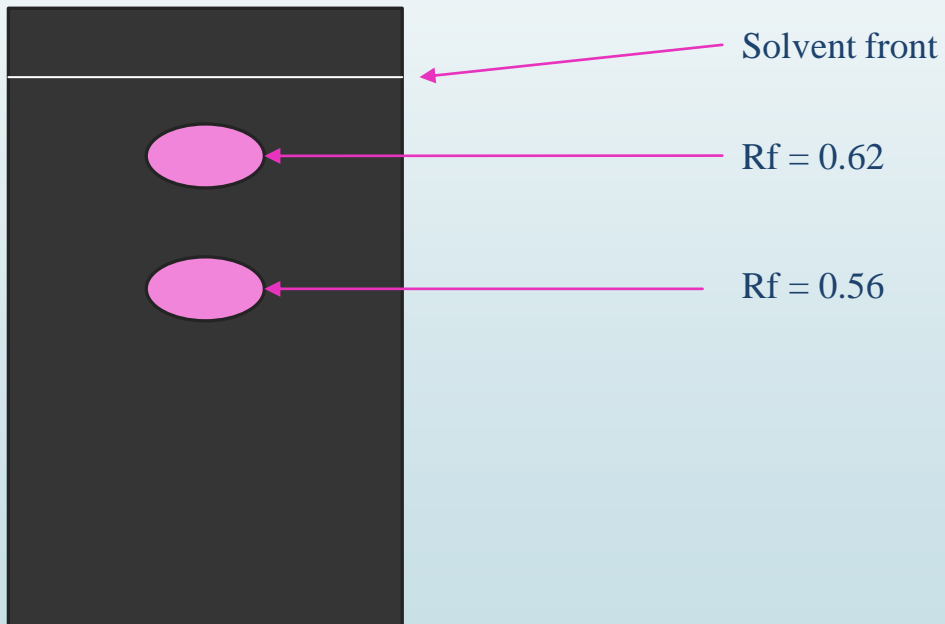
- ▶ (5:5:0.3)

- ▶ Solvent front cm - 7.5 cm

- ▶ Visualization - Dragondroff Reagent

TLC pattern of ethanolic extract :

Spot no.	Obs.	R.f
1	Pink	0.56
2	Pink	0.62





➤ **Chemical testing:**

➤ **Mayer's test:**

2-3ml filtrate with few drops Mayer's reagent, gives ppt

➤ **Wagner's test:**

2-3ml filtrate with few drops Wagner's reagent gives reddish brown ppt

➤ **Dragendorff's test:**

To 2-3ml filtrate, add few drops Dragendorff's reagent, Orange ppt is formed.

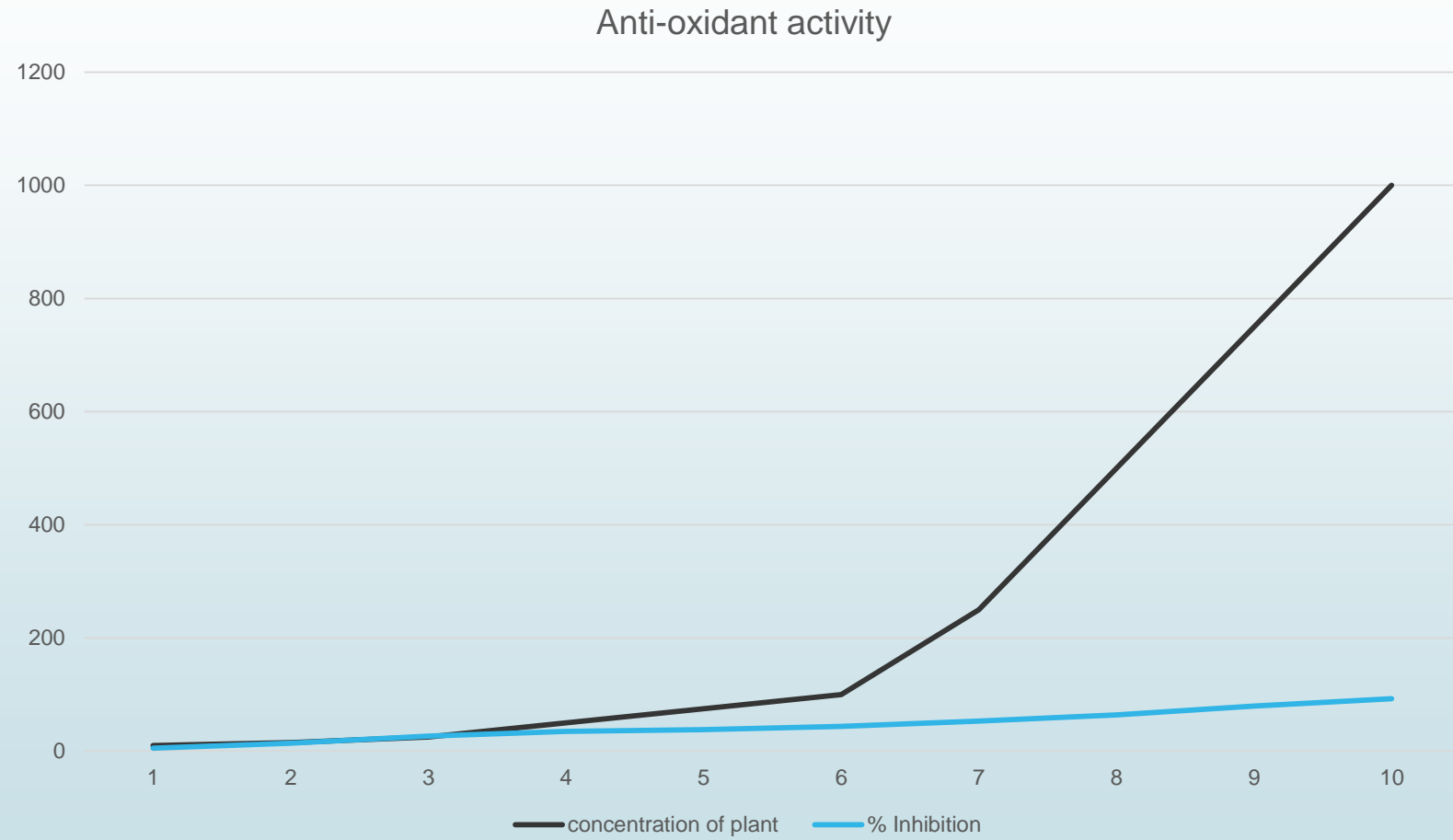
PHYTOCHEMISTRY :

Screening of phytochemicals in *Cleome viscosa* and *Trichodesma indicum*

Phytochemicals

Alkaloids	Leaf	Fruit	Root
Mayer's test	—	+	+
Dragondroff's test	—	+	+
Wagnor's test	—	+	+
Polyphenols	+	+	+
Ferric chloride test	+	+	+
Lead acetate test	+	+	+
Flavonoids	+	+	+
Concentrated H ₂ SO ₄ test	+	+	+
NaOH test	+	+	+
Schinodo's test	+	+	+

➤ Anti-oxidant activity:





► PHARMACOLOGICAL ACTION:

► Anthelmintic property

The standard Albendazole (25mg /ml) and the test solutions of *Trichodesma Indicum*(25,50, 100 mg/ml) were evaluated for anthelmintic activity with Indian adult earthworm *Pheretima posthuma*. Observations were made for the time taken for paralysis and death of individual worms up to four hours of test period. Time for paralysis was noted when no movement of any sort could be observed except when the worms were shaken vigorously. Time for death of worms were recorded after ascertaining that the worms neither moved when shaken vigorously nor when dipped in warm water of 50 °C. And compared with the extract sample.

➤ Antimicrobial Activity :

- The following strains of Gram positive and Gram negative organisms have been used for study

SR.O.	Microorganisms	Strain type
1	Bacillus subtilis	NCIM2063
2	Staphylococcus aureus	NCIM2608
3	Escherchia Coli	NCIM2065

Results of ethanolic extract :

Sr.no.	microorganisms	Zone of Inhibition	MEAN	STD.
1	Bacillus subtillis	20	20	24.33
2	S.Aureus	18	18	22
3	E.coli	21	21	23.7



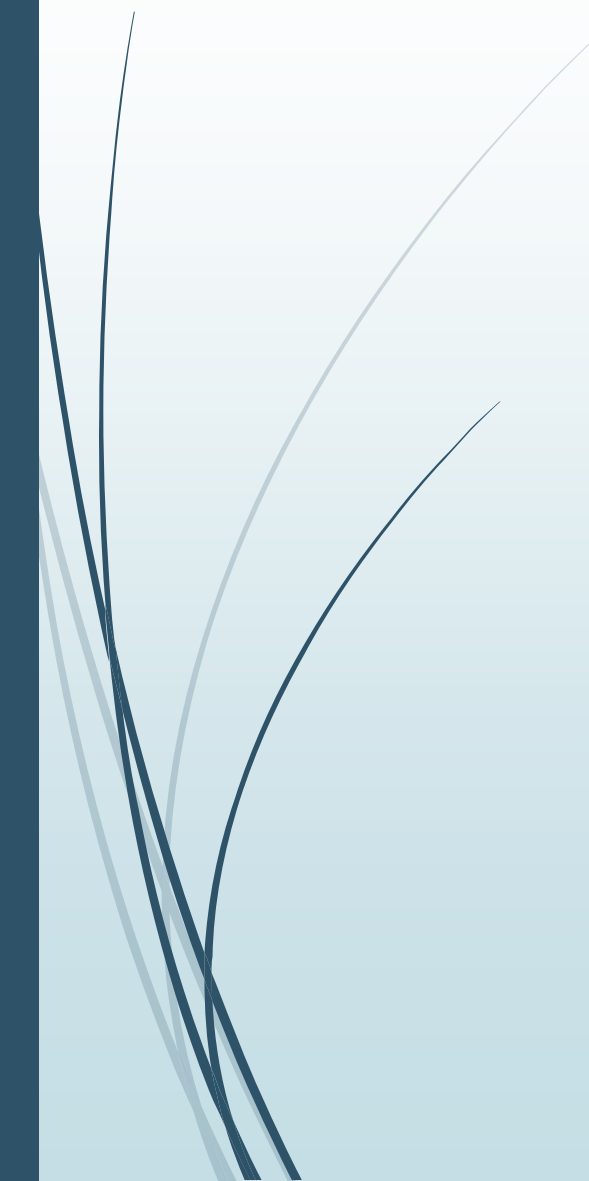
► Results:

The ethanolic extract produced significant anti-bacterial, anti-fungal and anthelmintic properties in a dose-dependent manner. Preliminary phytochemical screening revealed the presence of alkaloids, steroids, flavonoids, tannins and phenols that may be the reason for its biological properties.



► Conclusion:

This paper reporting the medicinal property of *Trichodesma indica* aerial parts and the further procedures of identification and isolation of active principles are in progress.



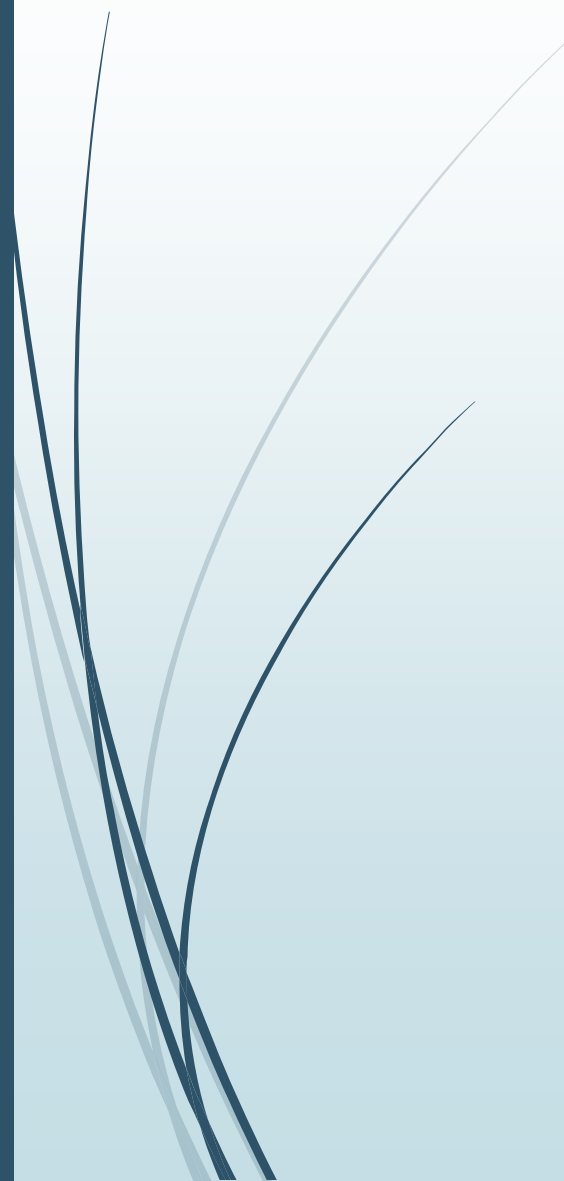


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Acknowledgement :





THANK YOU...