

**EXOTHERMIC REACTION FOR VEERYA ANALYSIS OF TULSI (OCIMUM  
SANCTUM)****Dr. Pritish Shantaram Naik\***Associate professor in Department of Dravyaguna, Government Ayurved College, Jalgaon  
M.H. India.**\*Corresponding Author: Dr. Pritish Shantaram Naik**

Associate professor in Department of Dravyaguna, Government Ayurved College, Jalgaon M.H. India.

Email ID: [prishnaik68@gmail.com](mailto:prishnaik68@gmail.com).

Article Received on 23/11/2021

Article Revised on 13/12/2021

Article Accepted on 02/01/2022

**ABSTRACT**

Tulasi or Vaishnavi holy basil is a sacred *Ocimum* medicinal and therapeutic value in Hindu belief. Hindus regard it as an earthly manifestation of the goddess Tulsi; she is regarded as a great worshipper of the god Vishnu. Usually, plant leaves or dal are offered in every hymen and ritualistic worship of Vishnu and his incarnation Lord Krishna. Traditionally, In India, Tulsi is planted in the centre of the central courtyard of Hindu houses. The potency of *adravya* which permits the same to revelation its act is known as *veerya*. *Veerya* is really the ultra chemical act of the drugs which can be of two types *Ushna* (hot) and *Shita* (cold). Their conversion as hot or cold however is not suitable as it represents temperature only, while the *veerya* is something more than that. *Veerya* is given chief prominence in classics as it illuminates the *karma* of a *dravya*. The *dravya* converts *nirveerya*, then it is deliberated as having no pharmacological act residual. So *veerya* potency of drug shows vital role in the treatment of the disease. To inspect the potency of the drug the perception of exothermic and endothermic reactions can play an authoritative roles is used here taking Tulsi as an example.

**KEYWORDS:** Tulsi, *Ocimum sanctum*, *Veerya*, Exothermic Reaction.**1. INTRODUCTION**

The chemical reactions which issue energy in the method of heat, light or sound are known as exothermic reactions. Exothermic reactions may occur instinctively and outcome in higher randomness or entropy ( $+\Delta S > 0$ ) of the system. They are denoted by a negative heat flow heat is lost to the surroundings and decrease in enthalpy ( $+\Delta H < 0$ ) the laboratory, exothermic reactions produce heat or may even be explosive.

There are other chemical reactions that absorb energy in order to proceed and are known as endothermic reactions. Endothermic reactions don't occur spontaneously. Work must be done in order to get these reactions to occur. When endothermic reactions absorb energy, a temperature drop is measured during the reaction. Endothermic reactions are characterized by positive heat flow (into the reaction) and an increase in enthalpy ( $++\Delta H$ ).

**MATERIALS AND METHODS****Exothermic Reaction for Veerya Analysis****Procedure**

3 samples of 6 month old Tulsi from the time of harvest were authenticated for their genuineness by drug testing

Laboratory Government Ayurved College, Jalgaon M.H. India. 10 ml of distilled water was taken separately in 3 identical glass beakers and temperature was noted down for three times in each beaker, then 15 grams of Tulsi powder was added respectively to all the three beakers and change in temperature was noted after 2 minute, 4 minutes and 6 minutes.<sup>[1]</sup>

**Method of observation**

A handheld digital thermometer ST92J9 was used for temperature measurement. It had a stainless steel sensor probe with 1 Meter wire 10 ml water taken first in all beakers respectively. Probe of thermometer introduced in water sample and instrument switched on at different time as 2 mt., 4 mt. and 6 mt. Temperature was noted at respective times. Yurther sample was mixed in water and then probe of thermometer was introduced again. The temperature was measured again at a difference of 2 mt., 4 mt. and 6 mt.

Figure 1: *O. sanctum* (Tulsi).Table 1: Change in temperature upon immersion of Tulsi (*O. sanctum*) in Water.

Sample	Media (Water)			Media + Sample		
	After 2 Minute Temperature	After 4 Minute Temperature	After 6 Minute Temperature	After 2 Minute Temperature	After 4 Minute Temperature	After 6 Minute Temperature
1 <sup>st</sup>	75.4 °F	75.4 °F	75.4 °F	76.4 °F	77.5 °F	78.2 °F
2 <sup>nd</sup>	75.5 °F	75.5 °F	75.6 °F	76.5 °F	77.5 °F	78.4 °F
3 <sup>rd</sup>	75.4 °F	75.4 °F	75.5 °F	76.8 °F	77.8 °F	78.4 °F

## RESULT AND CONCLUSION

From above shown results (Table. 1) it is proposed that Tulsi (*O. sanctum*) (showed exothermic reaction as temperature of water remaining constant 75.4 °F to 75.5 °F, Rise in the temperature varied from 1 to 2 °F which proves that Tulsi has *ushna veerya* property. This was an initial attempt to test the concept of *veerya* on the basis of modern scientific parameters. On the basis of this study, it can be proposed that other *ushna veerya dravya* may also exhibit exothermic reaction and similarly *sheeta veerya* to show endothermic reaction. *Anushna veerya dravya* (neither hot nor cold) are expected to show no change in temperature in this particular method of *veerya* analysis which needs to be evaluated through thorough experimentation.

## REFERENCES

1. Anne Marie, Helmenstine, Endothermic and Exothermic Reactions Enthalpy, Entropy, and Spontaneity, available at <http://chemistry.about.com/cs/generalchemistry/a/aa051903a.htm>. (last accessed on 07/05/21).