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Exothermic Reaction For Veerya Analysisof Rakta Punarnava(Boerhaviadiffusa Linn.) - An Experimental Study

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Abstract:*The potency of a dravya which enables the dravya to show its action is known as Veerya. It is considered as the active principle of a dravya. Actually it is the ultra chemical action of the drugs. It may be of two typesUshna (hot) andShita (cold). Their translation as hot or cold is not appropriate as these denote only to the temperature status, while the veerya is something more than that. Veerya is given prime importance in classics as this decides the karma. If the dravys becomes nirveerya, then the dravya is useless. So veerya (potency) of drug plays vital role in treatment principles. So to scrutinize the potency of the drug exothermic and endothermic reactions playimperative role.*

Key-words:*RaktaPunarnava, Veerya, Exothermic.*

Introduction: Many chemical reactions release energy in the form of heat, light, or sound. These are exothermic reactions. Exothermic reactions may occur spontaneously and result 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 ($\Delta H < 0$). In the lab, exothermic reactions produce heat or may even be explosive.

There are other chemical reactions that must absorb energy in order to proceed. These are endothermic reactions. Endothermic reactions cannot 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 ($+\Delta H$).

Examples of Endothermic and Exothermic Processes:

Photosynthesis is an example of an endothermic chemical reaction. In this process, plants use the energy from the sun to convert carbon dioxide and water into glucose and oxygen. This reaction requires

15MJ of energy (sunlight) for every kilogram of glucose that is produced:

$$Sunlight + 6CO_2(g) + H_2O(l) = C_6H_{12}O_6(aq.) + 6O_2(g)$$

An example of an exothermic reaction is the mixture of sodium and chlorine to yield table salt. This reaction produces 411 kJ of energy for each mole of salt that is produced:

$$Na(s) + 0.5Cl_2(s) = NaCl(s)$$

Demonstrations to Perform:

Many exothermic and endothermic reactions involve toxic chemicals, extreme heat or cold, or messy disposal methods. These demonstrations are safe and easy.[1]

Fig. 1: Powder of RaktaPunarnava

MATERIALS AND METHODS:

EXOTHERMIC REACTION FOR VEERYA ANALYSIS:

Procedure:

10 ml of water taken in a beaker and temperature were noted down for three times, then 10 grams of RaktaPunarnavachurnais added in water and changes in the temperature were noted down after 1 minute, 3 minutes and 5 minutes and a hour.[2]

Table No.1: Exothermic reaction of *Boerhaviadiffusa Linn*

Media			Duration		
Water	Water	Water	After 1 minute (*Boerhaviadiffusa* Linn)	After 3 minutes (*Boerhaviadiffusa*Linn)	After 5 minutes (*Boerhaviadiffusa*Linn)
75.6^{o}f	75.6^{o}f	75.6^{o}f	76.6^{0}f	77.4^{0}f	77.2^{0}f

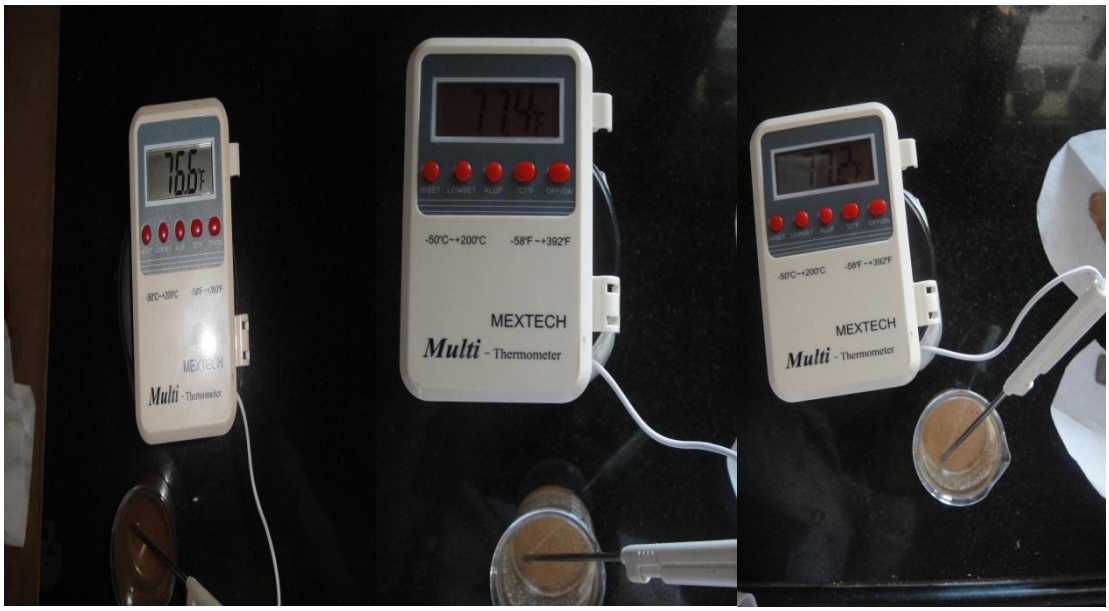

Image 1:After 1 minute Image 2: After 3 minutes Image 3: After 5 minutes

RESULT AND CONCLUSION:

From above said result it is clear thatRaktaPunarnava (*Boerhaviadiffusa*linn.) which is aushnaveeryadravya showed exothermic reaction and rise in the temperature variedfrom 1^{0}-

2^0 f. Temperature of water remains constant as 75.6^0 f, then readings were noted as 76.6^0 f, 77.4^0 f and 77.2^0 f respectively. From above said results it is proved that RaktaPunarnava is having Ushnaveerya action.

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