I J R B A T, Issue (Special-15), Feb 2020: 96-97 e-ISSN 2347 – 517X
A Double-Blind Peer Reviewed & Refereed Journal OPEN ACCESS Original Article
INTERNATIONAL JOURNAL OF RESEARCHES IN BIOSCIENCES, AGRICULTURE AND TECHNOLOGY

A REVIEW: EFFECT OF RISE IN GLOBAL TEMPERATURE ON WATER BEAR (TARDIGRADE) - MAHABALESHWAR

***Hema J. Konge, Jagdish L. Konge**
Department of Botany
New Arts, Commerce and Science College, Ahmednagar
*Corresponding Author: kongehema1@gmail.com

ABSTRACT:

Micro animals which live in both fresh and salt water, are famous for their ability to survive extremes that would kill other organisms. But new research finds that the creatures rapidly wilt under heat. Water temperatures of about 100 degrees Fahrenheit (37.8 degrees Celsius) can kill tardigrades in only a day. As global temperatures rise, that could become a problem for these animals, the authors of the new study said. "Tardigrades are definitely not the almost-indestructible organism as advertised in so many popular science websites."

Key words: - Tardigrads, Temperature, Dormancy, Cryobiosis.

NTRODUCTION:

The Scientist Dr. **Johann Goeze** discovered Water Bear in 1773 (Germany), called them little water bears and also known as moss piglets. They are water dwelling eight legged segmented microscopic animals. Water Bear cannot be seen by naked eyes. In 1777 Water Bear are classified as follows. Kingdom: Animalia Phylum: Water Bear Scientific name: Tardigrada given by Italian scientist Spallanzani (1777). Habitat: Tardigrades are found everywhere from deep sea -13,000 ft to mountaintops 20,000 ft and volcanic mud and from Antartic to rainforests. These animals survive in extreme environment such as extreme high pressure and low pressure, exposure to extreme temperatures, starvation, radiation, air deprivation, dehydration. Exposure to outer space, in 2008 (Jonssen et al.) tardigrades survived exposure to space without loss in survival. 1150 species found from the phylum Tardigrada it is a part of Superphylum Ecdysozoa. Water Bear fossils dating from 530 million years ago, in the Cambrian period. Reproduction in Tardigrades are oviparous, and fertilization is usually external but, in some species, have internal fertilization, with mating occurring before the female fully sheds her cuticle. When the substrate dries or freezes, Water Bear achieve dormancy (quiescence) by entering Cryptobiosis, specifically Anhydrobiosis or Cryobiosis, respectively.

MATERIAL AND METHOD:

In present study 15 different moss samples were collected from different localities of Mahabaleshwar. Tardigrades found in those samples using microscope. Then they were separated in following two groups.

1. Control Incubated at normal temperature.
2. Other group incubated 1 degree higher than normal temp at 38c

OBSERVATION:

Normal temp Tardigrades survived and other one degree higher died

CONCLUSION:

These micro animals, which live in both fresh and salt water, are famous for their ability to survive extremes that would kill other organisms. But new research finds that the creatures rapidly wilt under heat. Water temperatures of about 100 degrees Fahrenheit (37.8 degrees Celsius) can kill tardigrades in only a day. As global

temperatures rise that could become a problem for these animals.

ACKNOWLEDGEMENT:

Authors are thankful for presenting such a work to peoples of Mahabaleshwer, and to Principal of New Arts, Commerce and Science College, Ahmednagar for providing necessary facilities for this work. The authors are thankful to Head Department of Botany New Arts, Commerce and Science College, Ahmednagar for encouragement and support.

REFERENCES:

Adorable Tardigrades having a surprising, Fatal Weakness article by Stephanie Pappas

Science: Wter Bears Have Fatal Weakness- heat by QueersciFi.com