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SHORT COMMUNIATION

Theory for the establishment of self- medication in wildlife

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ABSTRACT

Animals always consume some plants and soil which do not come under their preferred food. They consume those foods in a particular period. Such behaviors indicate that they do self medication. The self medication behaviors could be the source of future pharmacological agents and also will be helpful in wildlife management. Keeping this in view, an attempt has been done to understand the wildlife behaviors through field works. The study proposed a theory for the establishment of self-medication in wildlife by the authors. The proposed theory will be known as " *THEORY OF SELF MEDICATION IN WILDLIFE*".

INTRODUCTION

The existence of human beings with plants and animals indicate the potential of biowealth as prophylactic and curative agents (Sofowora et al. 2013). The literature indicates that early human recognized the plants potential against particular diseases & disorders (Petrovska 2012). The question arise that how they knew the curative properties of a plants? Is it comes from super terrestrial powers? or gift of alien activities? or something unknown, not conceptualized? or from wildlife? The early anthropology indicates that somehow this skills developed by observing the self-medication in wildlife as they exist with human beings since

prehistory. The modern literature also indicates the self-medication in wildlife (Huffman 1997; Shurkin 2014). Whenever the wildlife face some health problems, they consume unusual things or plants which do not come under their preferred foods. It is also observed that those plant species have less or no nutritional values but high concentration of secondary metabolites. Those secondary metabolites are responsible to be curative agents. Screening of such plants from the unusual feeding behavior of wildlife, would be helpful to understand the medicinal potential of a plant species. Such understanding will be useful to fight against anti-microbial resistance and future upcoming lethal diseases. They could be the source for the extraction of specific secondary metabolites for drug development. Study of such behaviors of wildlife could be helpful to make long-term conservation strategies and to reduce the wildlife diseases in natural way. Therefore, an attempt has been done to understand the wildlife behaviors during many projects related to floristic works, biodiversity assessment and restoration from 2007 to 2021 in different states of India. During the field works, it was noticed that there is need of a theory on self-medication in wildlife for wide uses. Hence, a theory is proposed to determine the desired plant species from self-medication behaviors of wildlife.

METHODOLOGY

A survey was made From 2007 to 2021 in different states of India (Jharkhand, Uttarakhand, Odisha, Kerala, Manipur, Sikkim, Rajasthan). Authors have observed in many wildlife behaviors and raised the questions like why Asian Elephant consume the stem of *Tinospora cordifolia* (Figure 1) & *Cocinia grandis*? (Figure 2), Why Indian Skimmer or other threatened birds lay eggs near *Sacharram spontenum* & *Polygonum barbatum*, Why some birds put the leaves of *Azardichta indica* in their nest etc. These questions were also studied from literature (Huffman 1997; Shurkin 2014) and after critical observations, the theory is proposed for self-medications in wildlife.

RESULTS AND DISCUSSION

After critical analysis of questions mentioned in the methodology, a theory is proposed as "Sanjeet's Theory of Self Medication in Wildlife" (STSMW). The answer of raised questions is self-medication. Then, First Author (Dr. Sanjeet Kumar) gave a statement, "*IF WE COULD READ THE ANIMAL BEHAVIOURS, COULD READ THE KEY POTENTIAL OF MEDICINAL PLANTS*".

Figure 1: Stem of *Tinospora cordifolia* from the elephant dung (Not fully consumed)

Figure 2: Stem of *Cocinia grandis* from the elephant dung (Not fully consumed)

Therefore, for establishing the self-medication, we proposed the theory to know the wild plants which could come under the self-medication agents. The proposed theory is following:

1. The plant consumed cannot be a regular part of the animal's diet.

2. The plant must provide little or no nutritional value to the animal.

3. The plant must be consumed during those times of year when parasites are most likely to cause infections.

4. Other animals in the group don't participate.

The STSMW could be helpful to screen the medicinal plants from self-medication behavior of wildlife. The theory also could be helpful in pharmacological industry and wildlife conservation.

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