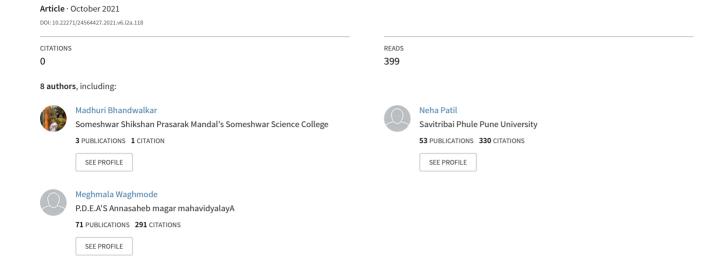
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Role of microorganisms in Vedic astrology: Mini review

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Abstract

Vedic astrology which is one of the most important study in India. Since ancient times, in India rituals were suggested as per the planets and other cosmic influences. Planets have the influence at cell level, eukaryotic, prokaryotic as well as viruses. Beside the concept of nakshatra tree, in this paper emphasis is given on the role of microorganisms in astrology. As a part of ritual, we are using the microbial products or processes. Microorganisms are also mentioned in Vedas. Biomineralization derived crystals has been suggested for healing practices. Meteroite-microbial interaction has also been reported which suggests extra-terrestrial existence of microorganisms.

Keywords: Microorganisms, astrology, biomineralization, crystals, meteorites

Introduction

Microorganisms are tiny living things that proved their terrestrial as well as extra-terrestrial life. Meteorites which has origin in outer space, has also been reported to have presence of Actinobacteria *Rubrobacter radiotolerans*, Proteobacteria and Bacteroidetes, iron/sulfur cycling organisms *Geobacter* spp. and *Desulfovibrio* spp (Tait *et al.*, 2017) [1]. Microbial fingerprint on extraterrestrial material, meteorites suggests the possibility of interaction of microorganisms with meteorites (from asteroids, Moon, or Mars) and subsequent mineralization (Milojevic *et al.*, 2019) [2].

Since ancient times, India has some traditional astrological remedies which uses fermented foods and microbial products or processes (biomineralization). This review is based on the interconnection of microbiology and astrology. There are main 7 planets *viz.*, Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn and 2 shadow planets *viz.*, Rahu and Ketu. Reference of microorganisms in Vedas is as "adrishta krimi" (Jakhmola, 2010) [3] where positive and negative aspects of them are available. As per the available report, not only human being but also small creatures like bacteria, virus are under the influence of planets and shows behavior accordingly. Planets also influences the growth of the cell. Considering the microorganisms, bacterial growth curve always has variations due to Kuja dosha (Planet: Mars) (Vegaraju et. al., 2020) [4]. Eclipses particularly solar eclipses has massive effect on the growth of bacteria and viruses (Vegaraju *et al.*, 2019) [5].

In this paper, more emphasis is given on Indian Vedic rituals for planets and associated microorganisms, by which we can put some light on microorganism's involvement for human wellbeing. Microorganisms are ubiquitous in nature. Microorganisms play both the beneficial as well as malefic role as that of planets. Some microorganisms play the role as probiotic i.e. microorganisms for life. These probiotics are especially present in fermented foods like pickle, curd, idli etc. As per the planets nature, tree and food has been suggested.

In India, there is concept to worship Nakshatra Tree (Āradhya Vruksha) for each group of people born under specific constellation. There are main Nakshatras which show astronomical signatures and have profound effect on human's nature (Table 1). Worshipping Nakshatra concept is like connecting the human inner environment with the nature by which Chakras (energy centers of body) can be activated (Gupta *et al.*, 2016) ^[6]. Microbiologists are doing the research on activities or contents in Āradhya Vruksha aided by microorganisms' involvement (Gupta *et al.*, 2016; Kakade and Chaphalkar. 2017) ^[6, 7]. Consumption of fermented foods like pickles, vinegars, and dry wines has been suggested to reduce the malefic effect of Saturn (https://kripalu.org).

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Table 1: Nakshatra Tree (Āradhya Vruksha) with their Astronomical Signatures

Aaradhya Vruksha (Nakshatra Tree)	Nakshatra	Associated Microorganisms	Plant's Activity	Reference
Anthocephalus kadamba (Kadamba)		Bacillus megaterium, Bacillus axarquiensis, Bacillus safensis, B. pumilus, Bacillus cereus and Ochromobacterium sp.		Kakade and Chaphalkar. 2017
Azadirachta indica (Neem)	Uttara bhadrapada nakshatra)	Arthrobacter protophormiae, Bacillus cereus and Alcaligenes faecalis	Immunomodulatory, antimicrobial	Gupta et al., 2016
Ficus religiosa (Peepal)	Pushya	Aspergillus niger and Fusarium	Antiulcer, Antibacterial, Antidiabetic, in the treatment of gonorrhea and skin diseases, Immunomodulatory, antoconvulsant, Hypolipidemic	Chandrasekar <i>et</i> al., 2010 [9]

Healing Crystals-Fossilized Minerals

Crystals have composition which facilitates to maintain good vibes and helps in mind control. Crystals is one of the effective remedy suggested in occult science for peaceful life. Crystals are naturally derived material which interact with the body chakras and empower the creativity of the wearer. Crystals are generally salt and minerals of silicon, copper, aluminium, ferrous and carbon. Crystals are the biomineralized product where sublithic bacteria, fungi and other live organisms play vital role. Such organically synthesized crystals have specific architecture referred as bio signatures, with rounded shapes (Götze *et al.*, 2019) [10].

Walter and Reissmann reported the involvement of fungi in moss-agate formation. Quartz stones found in Vestfold Hills, Eastern Antarctica, has been reported to have sublithic cyanobacterial communities i.e. oscillatorian cyanobacteria, with morphology typical of the Lyngbya/ Phormidium/ Plectonema group (Smith *et al.*, 2000). Biological desilication could transform insoluble crystalline form of the quartz to soluble amorphous form (Teng and Wang 2021) [12].

Pearls are recommended to get blessings of moon planet in astrological remedies as it helps the bearer to control mind.

Report is available where scientist reported role of bacteria in cave pearl biosynthesis. Live microorganisms produce extracellular polymeric substance and crystals which form the inner and outer part of this pearl. Even biofilm maintain the growth of the pearls by protecting them from adverse environmental conditions (Gradziński 2001) [13].

A valuable gemstone/crystal Amethyst is the member of quartz family with purple coloration due to the presence of tetravalent iron in the crystal (Rossman 1994)^[14]. Deposits of amethyst are found in southern Brazil (Ametista do Sul) and Uruguay (Artigas) where environment is low silica and radioactive element plus a reducing, Fe2+-dominated environment (Baretto and Bittar 2010)^[15]. Sulphate reducing bacteria play the role in the formation of amethyst at Ametista do Sul, Brazil (Gilg *et al.*, 2014)^[16]. Metabolic product of *Desulfovibrio desulfuricans* was reported for its usage in the separation of quartz from hematite with the process of microbially induced flotation.

Saccharomyces cerevisiae, yeast, also has been reported for the microbially induced flotation by which separation of quartz from hematite was demonstrated (Natarajan, and Padukone, 2012)^[17].

 $\textbf{Table 2:} \ \textbf{The Most Common Crystals and Corresponding Chemical Nature}$

Name of the Crystal	Chemical Nature	
Amethyst	Quartz	
Carnelian	SiO2	
Citrine	Quartz	
Garnet	Silicate minerals	
Hematite	Ferric oxide	
Jade	NaAlSi2O6 minerals	
Lapis lazuli	Aggregate minerals like lazurite, calcite and pyrite	
Malachite	Green copper carbonate mineral	
Pyrite	Iron disulfide mineral	
Moss Agate	Silicon dioxide	
Turquoise	Phosphate of copper and aluminium	

Conclusion

Microorganisms which are ubiquitous in nature with terrestrial as well as extraterrestrial life. Microorganisms has both positive and negative impact on nature, based on the planetary influence. Their behavior is also dependent on the: desh (location), kaal (timing) and patra (individualistic approach). In vedic astrology, some rituals which are suggested to reduce the malefic effect of planets, has some involvement of microorganisms in the form of process or product.

Conflicts of Interest

The authors declare that they have no conflict of interest.

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