

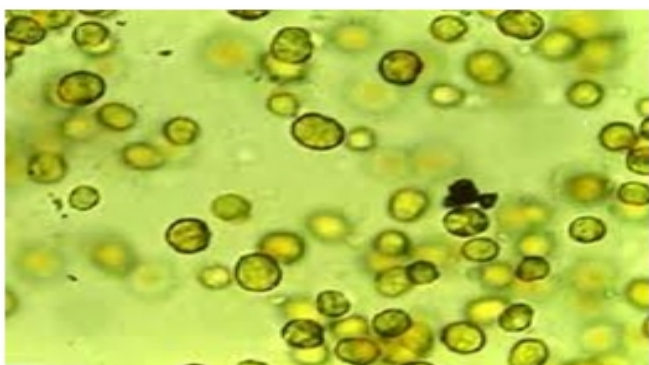
MICROBIOLOGY BEHIND CORAL BLEACHING

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Coral Bleaching is a serious problem affecting the reefs of Maldives. A major coral bleaching was reported on 1998 which affected 98 percent of coral reefs in Maldives. Coral Bleaching is mainly due to loss of symbiotic protozoa from the coral polyps.

This article will look closely on the microorganism involved in the Coral Bleaching and stress involved in perspective of the microorganism.

Zooxanthellae



Zooxanthellae are flagellate protozoa (commonly mistaken for an algae) that are golden-brown. They are symbiotic organisms which live inside the host (coral). Coral bleaching is due to stress induced expulsion, death or loss of pigmentation in Zooxanthellae.

In the ambient environment, Zooxanthellae and coral are in a symbiotic relationship in which the coral obtain enhanced growth and clarification rate. In return the protozoa get shelter and protection against predators.

Zooxanthellae directly or indirectly experience the stress that their containing coral undergo. Two of the frequent stress includes exposure to air during the low tide and damage from solar radiation in shallow water.

Predominant cause of coral bleaching is fluctuation of temperature. The protozoans loose their cell adhesion and get detached from the endodermal cells of corals.

Changes in water chemistry also affect the mutuality relationship between the Zooxanthellae and corals. Decrease in pH (acidification) of oceans is mainly due to uptake of anthropogenic (produced due to human activities) Carbon dioxide from atmosphere. Acidity of sea water affects the enzymes present in the Zooxanthellae resulting death.

Corals reefs are indispensable for the islands. So next time when you hear about coral bleaching please remember about these small fascinating organisms which is essential for the growth of the coral reefs.



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