

# Roof Algae Health Concerns

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Having your roof cleaned actually makes sense. It isn't just aesthetics. While people like to say that dirty roofs lower a property's value and may make it hard to sell, the "dirt" on a roof actually shortens its life span and can even present a health hazard. Furthermore, the "dark stains" on a roof act as a sponge to absorb the sun's heat, which causes a rise in the temperature inside a home or building, creating higher air conditioning bills.

The dirt isn't just dust – It's alive. Some of the black or very dark roof stains are caused by a resilient type of algae, *Gloeocapsa magma* (a type of blue-green algae commonly found in climates with warm, humid summers). The algae grow in standing water, as well as in our lakes and ponds. The algal spores are carried to our roofs from the water sources by the wind and birds, and then from roof to roof where it grows and feeds on the limestone filler in asphalt shingles and the real dirt on tile roofs maybe in some cases the tiles themselves. Worse still, as the algae grow, they retain water and foster the growth of other roof inhabitants.

The black stains are also very likely to harbor a number of molds or fungi. Unlike algae the fungi on our roofs lacks chlorophyll. They are unable to manufacture food from raw materials. So, it must get nutrition from some form of organic matter. To thrive, these heterotrophs, who used to be called saprophytes, also require a warm, humid environment.

Fungi normally begin their life cycle as an airborne spore that settles on roofs. The spores on the northern exposure of the roof stand a better chance of survival because that portion of the roof is the last part to dry after a rain or morning dew. This raises the humidity on the surface of the roof, thus creating a perfect feeding and breeding ground.

While not all mold (fungi) and algae pose a health danger, some are harmful, especially for us older folks, younger children and people who suffer from asthma and respiratory problems. Their spores, which are on your roof, can get inside your home because they end up on the driveway and walkways from rain, and are easily tracked inside. They can even be drawn into our air conditioning systems and eventually populate our ducts.

Different mold species can have varying health effects, but it is important to remember that any excessive mold growth needs to be taken care of, regardless of the species. Any excessive mold growth can lead to increased allergies, toxicity, and house/building structural problems.

In conclusion, during the digestion of substrates, fungi secrete enzymes into nutrients in order to break down complex compounds into simpler compounds that can be taken up by the fungi and used as nutrition. These digested nutrients produce secondary metabolic byproducts called mycotoxins that are released to give the fungi a competitive edge over other microorganisms and fungi. Unfortunately, mycotoxins can also be toxic to humans causing a variety of responses including cold/flu-like symptoms, sore throats, headaches, nose bleeds, fatigue, diarrhea, dermatitis, and immune suppression. Some mycotoxins may also be carcinogenic and teratogenic. Molds that have been known to potentially produce these toxins are Acremonium, Alternaria, Aspergillus, Chaetomium, Cladosporium, Fusarium, Penicillium, and Stachybotrys.