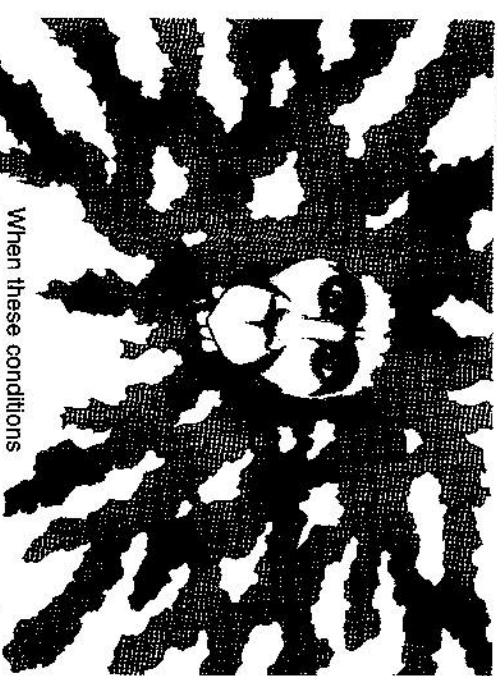


The entire biosphere, from deep in the soil to high in the atmosphere is loaded with molds and their spores. Molds decompose dead organic matter in the environment. Molds are "Digesters" and "Recyclers" of almost any organic material. They need a nutrient base to thrive, which can be almost anything (e.g. starch, sugar, cellulose, lignins, fats, proteins, and complex hydrocarbons). In addition to a nutrient base, molds need moisture on the growing surface, normally determined to mean a surface containing above 70% relative humidity. Also, mold needs a temperature range between 40 degrees and 100 degrees (F). Finally, mold needs oxygen. When these conditions are present, molds grow by producing tiny spores into the air, much like plants produce seeds.



When these conditions have been removed from a once growing mold colony, the colony becomes dormant but can revitalize when the growth conditions resume. Although mold and mold spores are microscopic, thriving mold growth colonies on visible surfaces can be seen. They are recognizable as black, brown, green, or white splashes.

MOLD AND HEALTH:

Generally, people with allergies are the ones affected by mold presence. Humans are generally unaffected by the multitude of mold fungi because we have a vast and complicated immune system. However, when this immune system is deficient in some way, we are said to have an allergy. Mold spores contain allergens, irritants and, in some cases, toxins. People with allergies to molds are thought to constitute up to 20% of the population.

There are degrees of allergies (sensitivities) to mold. Some may only experience slight discomfort such as a mild headache while others may have more severe reactions such as nausea. Adverse health affects from exposure to mold are produced by a complex inter-relationship among the type of mold, extent of exposure, the individual's sensitivities, and the individual's age. According to the Center for Disease Control (CDC) in their publication: *Questions and Answers about Stachybotrys Chartarum and Other Molds*: "There are very few case reports that toxic molds (those containing certain mycotoxins) inside homes can cause unique or rare health conditions such as pulmonary hemorrhage or memory loss. These case reports are rare, and a causal link between the presence of the toxic mold and these conditions has not been proven". However, although the science is not yet fully understood as to the sorts of harm and the required doses of potentially toxic spores resulting in serious illness, there is a consensus among health professionals that people should avoid living around indoor, moldy environments.

MOLD CONTROL:

Unlike bacteria, mold like a damp growing surface, not a wet environment. For example, bacteria thrive in sump pits while mold would thrive in a poorly ventilated bathroom. Remove the moisture and you control the mold. Therefore, the first and essential step to mold control is to identify and correct the source of moisture.

There are 13 recognized sources of water vapor (moisture) in a house:

1. Roofleaks
2. Leaking Gutters
3. Overgrowth of Foundation Plantings
4. Poor grading
5. Overcrowding
6. Unvented Dryers
7. No Bath Exhaust Fan
8. Unconditioned Foundation Crawl Space
9. Underinsulation
10. Use of Heavy Drapes Over Windows (particularly tight replacement windows)
11. Excessive Humidification
12. Unheated, uninsulated Wall or Ceiling Surfaces (e.g. closets that are isolated from conditioned space by unvented doors or excessive storage)
13. Unvented Heating Equipment.

Home Inspectors who are members of the American Society of Home Inspectors (ASHI) are normally skilled in analyzing such water and moisture problems.

Where houses have frequent air changes and good water control, inside and out, mold cannot thrive. This task is much more difficult today than thirty years ago because our building envelopes are tighter and almost everyone uses air conditioning.



Once moisture source control has been addressed satisfactorily, the mold colonies should be removed. This can be a simple or complex procedure depending on the extent of growth and location of that growth.

If the growth is fairly small and on readily accessible areas, bleach will usually be quite effective. The Center for Disease Control (CDC) states that "...in most cases molds can be removed by a thorough cleaning with bleach and water". Remediation experts recommend using bleach in a 10:1 ratio with water (10 parts water to 1 part bleach). On the other hand, mold growth can be pervasive and concealed in wall cavities, ducts, behind vinyl wallpaper, or in carpet. In these instances you will need professional, outside help. Consult our Professional Resources section of this report for remediation experts. Professional authorities such as the United States Environmental Protection Agency (USEPA) and the United States Center for Disease Control (CDC) advise that all molds should be treated the same. That is, because of the complex and not fully understood relationship of molds to health, we should control and remove all varieties of mold. Although the press and