

Dog Vomit Slime Mold, *Fuligo septica*



Dog vomit slime mold.

Protocista (Protista) more closely related to amoebas and certain seaweeds than fungi. Slime molds do not have the threadlike filaments called hyphae (collectively called mycelium) that most fungi have in their vegetative state, but instead are made up of a multinucleate mass of protoplasm with no cell walls within a cell membrane, called a plasmodium. The plasmodium, which varies greatly in size depending on the species, moves around like a huge amoeba as the cells multiply, streaming over the surface engulfing decaying organic materials and consuming the microbes (especially bacteria) that inhabit them as it goes.

Many people get quite concerned when a whitish to bright yellow or orange patch that looks like a dog threw up suddenly appears seemingly out of nowhere on the ground. With the apt common name of dog vomit slime mold (or less accurately dog vomit fungus) the species *Fuligo septica*, with a worldwide distribution, is one of nature's interesting oddities.

Even though it is often referred to as a fungus, slime molds – myxomycetes – are now thought to be a different type of primitive organism in the kingdom



Slime mold *Fuligo septica*.

It isn't until the slimy plasmodium changes into a spore-bearing "fruiting body" that most people notice it. This change occurs when its food supply is exhausted or conditions become too dry. The transformation can occur very rapidly – sometimes within hours. The "fruiting body" takes various forms depending on the species. In the dog vomit slime mold, the transparent plasmodium (like an egg white) changes into an aethalium (plural, aethalia), a thickened, cushion-like, irregularly shaped structure containing numerous spores. This usually begins in the evening, so



The bright yellow slime mold coming out of the ground about 9:00 p.m. (L) has transformed into a mounded light yellow aethalium by 7:00 a.m. the next morning (R).

that by the next day the "vomit" has "magically" appeared. The whitish, tan, bright yellow, or orange fluffy or foamy-looking aethalia range greatly in size, from a few inches to up to two feet across. The color likely inspired another common name for this slime mold of "scrambled egg fungus". The surface of the aethalium sometimes develops dark red liquified areas as it ages, making it look like it is bleeding.



Closeup of the fresh aethalium.



The aethelium soon matures into a harder mass, losing its bright color. Underneath the crusty, powdery surface a mass of dark brown spores develops, not in distinct sporangia like more advanced slime molds have. The millions of spores are released when the surface is broken by animals, people, or rain, and are disseminated by wind to other areas. Run a stream of water onto a mature aethelium and a cloud of spores rises up like dark smoke. The mass will eventually disintegrate and disappear.



The aethelium quickly dries up and changes color. At 7:00 a.m. the aethelium was fresh and bright yellow; by 4:30 p.m. the same day it was dry, crusty and orange in color. This large specimen was 22" across.

The dusty, pinkish-brown spores are round and slightly spiny (under magnification). The spores will remain dormant but viable for several years until conditions are right. The spores germinate in warm, moist conditions to form myxamoebae or flagellated swarm cells, which later fuse to form the plasmodium.



A cross section of the aethelium, showing the mass of brown spores embedded in the structure.



Dog vomit slime mold is most common on hardwood mulch in urban areas.

Slime molds are most often found in moist, shady areas with abundant organic matter, such as dead leaves and wood, although they may move to bright areas when ready to change to the "fruiting body". Slime molds are saprophytic, meaning they derive nourishment from decaying organic materials, and will not attack living plants (although they might over-run a small plant in the vicinity). Their ecological role in nature is to break down dead materials to recycle the nutrients for other species to utilize. The dog vomit slime mold occurs in forested areas, but typically causes more concern when growing near homes or buildings. This species is most commonly seen on hardwood mulch, but also occurs on rotting logs, in leaf litter, and along untreated lumber. Fresh mulch is more likely to support slime mold growth than older, more decayed mulch.



Dog vomit slime mold aethalia vary greatly in size, color, and shapes.

Dog vomit slime mold can occur anytime from late spring through fall. It needs moisture to thrive, so is frequently seen after soaking rains when it is hot and humid.



A slime mold moves up a 6" high wooden raised bed from the bark mulch at 7pm (L), reaching the top of the wood by 10 pm (C). The move is completed and the plasmodium transformed to aethalium by the next morning (R).

Although many people are alarmed, grossed out, or frightened by it, this slime mold is harmless to plants, pets, and humans (although the dusty spores can irritate people with allergies, asthma, or other respiratory conditions). Slime molds are usually only a cosmetic problem and will disappear on their own in a few days. There is generally no need to control these odd organisms, but if it is really bothering someone, an aethalium can be raked out or scraped off, or broken up and allowed to dry out to make it less noticeable. Stirring up the mulch will help break up any plasmodia as well as dry out the area to make it less hospitable for slime mold growth. Using something other than hardwood bark for mulch (such as gravel, pine bark, cedar bark, or pine straw) and reducing excessive watering will reduce the likelihood of the slime mold showing up, but won't eliminate it. There is no way to eliminate the organism, other than getting rid of everything it feeds on, which is nearly impossible other than by paving the entire property.



Real vomit (from a cat, not a dog) that looks a lot like an old slime mold aethalium.

– Susan Mahr, University of Wisconsin - Madison

Additional Information:

- ✔ Slime Molds – UWEX Publication XHT 1091 on the Wisconsin Horticulture website at hort.uwex.edu/articles/slime-molds/
- ✔ *Fuligo septica*, the dog vomit slime mold – Tom Volk's Fungus of the month for June 1999 on the UW Botany website at botit.botany.wisc.edu/toms_fungi/june99.html
- ✔ Slime Molds, Revealed – a slide show on the PBS Newshour website at www.pbs.org/newshour/slideshow/multimedia-slimemoldsfinal/