

Black mold on stored garlic (*Aspergillus* spp.)

Moho negro (Sp.)

Cause

- *Aspergillus niger* van Tiegham (Mathur & Mathur)
- *A. ochraceus* K. Wilh. (= *A. alutaceus* Berk. & Curt.)

Symptoms

Outer scales or the neck will show black streaking due to dark fungal growth. Bruised areas may also be discolored. Initially infected tissues look water soaked; they then become dry and shrivel, with masses of black spores visible between the outer scales.

Occurrence

This disease is common in warm dry climates and is more prevalent on onion than garlic. *A. niger* has a worldwide distribution. *A. ochraceus*, a common fungus found in soil in N. America, has been recovered from garlic cloves in Oregon and Washington but was not found to be consistently aggressive. Black mold on garlic has been an infrequent and minor problem in Oregon.

Disease cycle

Aspergillus is a fungus which survives in the soil on dead plant tissues; it may also be carried on seed. Species of *Aspergillus* are very common in the soil and in the air. Spores produced in diseased plant debris or in soil infect the current years' growth.



Aspergillus niger on garlic cloves. (Photo by Oregon State University Plant Clinic)

The fungus is not a vigorous pathogen. Tissues injured by bruising or mechanical damage are often first colonized, or the fungus may gain entry through the basal plate. Infection can also take place in the neck when the foliage dries after harvest. As the fungus takes hold, black streaking develops in the dead outer scales, and then in the fleshy cloves. *Aspergillus* infection may be followed by entry of other pathogens, including soft rot bacteria. The fungus is known to produce mycotoxins in infected tissue.

Management

- Store bulbs at low temperature and low humidity

- Avoid bruising and mechanical injury to bulbs at harvest and when storing
- Chemical control is not recommended

References

- Rath, G.C. & G.N. Mohanty, 1985. *Aspergillus* rot of stored garlic and its control. Indian J. Mycol. And Pl. Pathol. 15:323-324.
- Schwartz, H.F. & Krishna Mohan, 2006. Compendium of onion and garlic diseases and pests, 2nd Ed. APS Press.
- UC IPM Online. State wide Integrated Pest Management Program.
<http://www.ipm.ucdavis.edu/PMG/r584100411.html>