

Aspergillus Fruit Rot of Pomegranate (*Punica granatum*)

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Figure 1 (left) and Figure 2 (right). Discolored pomegranate rind (left) and rotted seed (arils) with black powdery spores (right).

Pomegranate (*Punica granatum*) is an ideal fruit tree/shrub to grow in the semi-arid Southwest and has gained popularity with backyard growers due to its high nutrient content. Pomegranate is well adapted to a wide range of climate conditions and has an optimum growth in USDA plant hardiness zones 8-11 with some varieties extending into zones 6-11. New Mexico has a majority of USDA growing zones from 6 to 8 which are well suited for growing pomegranates. However, *Aspergillus* Fruit Rot is a commonly found postharvest plant disease that impacts production of pomegranate found worldwide, and infected samples submitted through the New Mexico State University Plant Diagnostic Clinic indicate that it is present in New Mexico as well.

SYMPTOMS

Exterior symptoms of *Aspergillus* Fruit Rot include a slight off-color, such as a pale red of the rind with other fruit showing a yellow to brown-red discoloration (Figure 1). Once the fruit is cut open after harvest, the infection is noticeable with brown to black rotted seeds (arils) with black powdery sporulation (Figure 2). Therefore, the disease is also known as “black heart” or “heart rot”. If there are cracks within the rind, black sporulation can occur here as well.

BIOLOGY OF ASPERGILLUS

As the name suggests, it is caused by the fungi *Aspergillus niger* and *Aspergillus tubingensis*. Infection and colonization of the fungi typically follows a rain or irrigation event during flowering and early fruit development. Infection is also most often associated with feeding by hemipterans (true bugs) such as leaf-footed bugs but can also be caused by fruit cracking through overwatering or sunburn or through physical injury. The fungus survives over the winter in plant debris as well as in mummified fruit. The airborne spores of *Aspergillus* can enter fruit cracks by wind-blown soil and dust.

MANAGEMENT

Unfortunately, preharvest fungicides are generally ineffective due to fruit crown covering the blossom tissues. Therefore, cultural practices are most effective for managing this disease. Practices such as sanitation with removal of old and mummified fruit from the previous season and removal of dead branches can reduce disease incidence. Appropriate irrigation practices are important to avoid water stress and fruit cracking by overwatering. Management of hemipterans that feed and damage the fruit that enable fungal entry is also important. For more information on hemipteran management, consult NMSU Cooperative Extension Guide H-184, Integrated Pest Management (IPM) Strategies for Insect Pests of Fruit Trees in New Mexico (<https://pubs.nmsu.edu/h/H184/index.html>).



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