OSU Plant Clinic
Department of Botany & Plant Pathology

Oregon State University Extension Service

Eriophyd Mites on Stored Garlic

Ácaro del ajo, Eriófido del ajo (Sp.)

Cause

The dry bulb mite, *Aceria tulipae* Keifer (= *Eriophyes tulipae*)

This is an eriophyid mite, which are different from other mites that infest garlic, such as bulb mites. Eriophyid mites are tiny banana-shaped creatures that are too small to see without magnification.

Symptoms

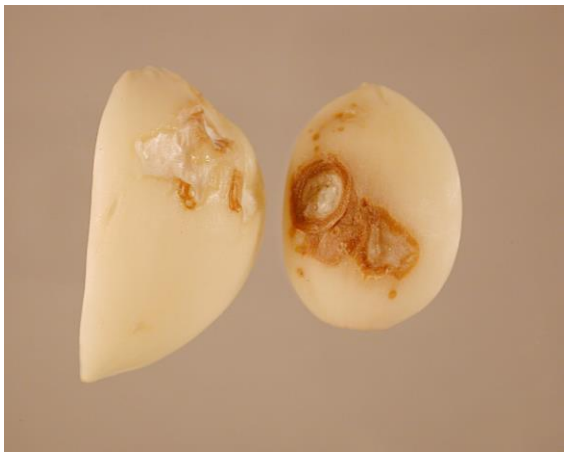
In storage, feeding injury is seen as sunken brown spots on garlic cloves. Feeding damage on garlic leads to drying of cloves and rotting by rotting fungi which enter by the feeding wounds.

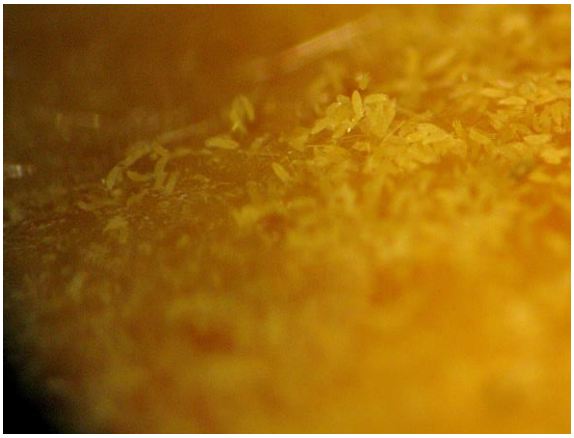
Occurrence

Aceria tulipae is a common pest present in most of our garlic growing areas, although it may be sporadic in occurrence. Hardneck varieties are more susceptible than softnecks, and difference in susceptibility depends on the cultivar. This mite attacks wild and cultivated members of the genus *Allium*, including onion, garlic, and leeks. Tulips are also host of the mite.

Life cycle

Aceria tulipae is found between the layers of the bulbs. The eggs, nymphs, and adults overwinter on infected garlic while in storage, and can also survive





Streaks and spotting on a garlic clove (top) and sunken lesions (center) due to eriophyid mites. Microscopic view of eriophyid mites on the surface of a garlic clove (bottom image).

in the soil. Infested cloves are the most frequent source of infection in the field. Maximum egg hatch while in storage occurs at close to 100 % relative humidity, and the time to complete a life cycle, from egg to adult to egg was 8-10 days at 75 – 80 ºF. Mites are known vectors of viruses.

Management

- Avoid successive onion and garlic crops.
- Dusting cloves with sulfur prior to storage gives excellent control when the cloves are thoroughly covered. Dusting intact heads will not be as effective due to incomplete contact with mites.
- Good control was reported with soaking affected cloves for 24 h in 2% non-detergent soap and 2% mineral oil.
- Light or moderate infestations are controlled with the normal drying process prior to storage.
- Hot water treatment of bulbs prior to storage can reduce mite populations, including eggs, but effective temperatures may also adversely affect germination and severely reduce yield. Recommended only as a last ditch attempt to recover a valuable garlic line. Effective times and temperatures were 130 ºF for 10 min, or 140 ºF for 10–15 min.

References

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Photos by Melodie Putnam