

AGAVE MITE

A QUICK AND DIRTY PRIMER

These past few years Agave mite (aka eriophyid mite) has been working its way through all manner of botanic garden, nursery, and wholesaler throughout the southwest, and to a lesser extent, the rest of the country and the world at large. Agave mite is so pervasive it is now unusual to encounter a mite-free succulent nursery anywhere in Arizona. And reports abound of mite-infested Agaves offered up on popular auction sites with some regularity. This pernicious microscopic scourge scars leaf surfaces, interferes with reproduction, and even kills its hosts.

Many collectors from neophyte to aficionado are more than a bit concerned about the prospect of introducing this unwelcome guest to his or her collection, and not without cause, since treatment is both costly and time consuming. Unfortunately, Agave mite damage is not easily recognized without some small experience, so we're here to help by providing graphic examples and visual cues (Fig. 1).¹

I don't doubt that some Agaves are more prone to infestation than others, and there may be more than one reason. Some species may be more resistant than others due to chemical makeup, and some individuals may be more resistant to infestation by virtue of general health/condition, and it is not unlikely that multiple Agave mite species are in play. We have found Agave mite in nurseries (Fig. 2) and in situ across Arizona (Figs. 3–8), as well as habitat examples of apparent recovery from mite infestation, so Agaves do not appear entirely defenseless. Happy, healthy plants might manage a better defense than those less suited to our garden environments.

Note lesions and accompanying grease stains in photos. If you see an *Agave* with lesions, but no grease stains, it is probably not eriophyid mite damage. Also note that lesions occur on the core, posterior (lower), leaf surfaces, leaf edges, and only rarely on anterior (upper) leaf surfaces. If lesions are restricted to anterior leaf surfaces, it is not eriophyid mite damage.



1. *Agave macroacantha* in a garden setting. Don't be fooled by the lack of lesions, the grease stains visible are unmistakable.

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2. Agave mite damage is an all too common sight at succulent nurseries across the southwest.

It is important to understand that the type of damage/evidence shown may take months to develop, and you cannot take a measured approach when treating. If you limit treatment to those plants with apparent symptoms, you may play whack-a-mole until the end of time. Assume that any and all Agaves in the vicinity of an obviously mite-infested plant are themselves, infested, whether or not they are symptomatic. Best to abandon any and all thought of a measured response. You'll need to hit them hard, and keep hitting them hard.



3. *Agave verdensis* in habitat. This and other domesticated Agaves seem especially susceptible to mites



4. *Agave chrysantha* in habitat sporting damage from both Agave mite and running bugs (*Caulotops barberi*).



5. Many *Agave chrysantha* populations in central Arizona are moderately mite-infested.



6. Close-up of *Agave yavapaiensis* succumbing to a mite attack in habitat.



7. *Agave deserti* var. *simplex* in habitat, with an active mite infestation.

If Agave mite has entered your collection, and evidence of contamination is found on more than one plant, rotate at least two translaminar miticides (three is preferable), spraying your entire collection top to bottom (but mostly the top) at 4-week intervals, deferring to miticide instructions. You can skip treatment in winter months so long as low temperatures approach freezing on occasion, as mites recede deep within the core, out of reach at this time. Here in sunny AZ, that is usually mid-December through mid-February. Resume spraying late winter/early spring, paying close attention to the condition of all your plants. Mite-infested Agaves not only carry grease-stained lesions on and about the core, they also fall into a general malaise, which basically presents as dormancy. Afflicted plants do not offset, and grow very slowly, if at all.

Continue to spray all of your Agaves until all are growing and/or offsetting and have three new lesion-free leaves. This may take a year or more for broad infestations. Minor infestations that don't move beyond two or three plants in close proximity may be easier to contain. Just stay vigilant, paying close attention to the condition of all your Agaves. If you know mites are about, suspect infestation of slow growing plants even if no lesions are present.



8. Damage on this *Agave mckelveyana* from 1500 m suggests Agave mite is not deterred by cold

Translaminar miticides lean toward the costly side, so a treatment regimen is not to be undertaken lightly. Forbid, Judo, Avid, and Pylon are examples of translaminar miticides, and there are others. Forbid may be the most widely used, while Avid is the least costly. Small, thus more affordable, quantities of Forbid are frequently offered on eBay and Amazon, but these are not always the bargains they appear. Caveat emptor is the operative phrase here. A safer bet might be to purchase product that has not been repackaged, and split cost and product among friends or colleagues, if possible.

If evidence is restricted to a single plant, and that plant is either a new addition or at least somewhat isolated, it may be preferable to destroy the plant in hopes that contamination has not spread to the rest of your collection. But your best bet is to recognize Agave mite damage when you see it, and avoid introducing mite-infested Agaves to your collection.

Please note that eriophyid mites are extremely host-specific, and do not jump across plant types, such as *Agave* to *Aloe* or *Aloe* to *Yucca*.

For a wealth of additional information, please consult the excellent Matt Maggio article, Operation Agave Might; *Cactus and Succulent Journal*, 2012, Volume 84, Number 6.