Twospotted spider mite
*Tetranychus urticae*
Spider mites pierce cells with their whip-like chelicerae. Typically they will destroy 1 to 2 dozen cells at each feeding site – then move on.
Each feeding site produces a small area of dead cells – a type of **stippling injury**
With high mite populations, the stippling injuries may cover much of the leaf area.
The light flecking on the leaf is symptomatic of twospotted spider mite.

This leaf twisting is not associated with spider mite injury.
Spider mites and aphids are present on this plant.
Thrips injury can resemble spider mite injury!

Onion Thrips
*Thrips tabaci*
Webbing may be produced by twospotted spider mites and becomes visible when they are in high populations.
Silk can provide pathways for spider mites to move across a plant.
Mites can disperse some distance by being wind blown – *(ballooning)*
Life Stages of the Twospotted Spider Mite

- Egg
- Larva
- Protonymph
- Deutonymph
- Adult
Male spider mites are smaller than females and have an abdomen that tapers.
Male spider mite

Female spider mite with eggs

Photographs courtesy of David Shetlar
Spider mites lay eggs that are huge in proportion to their body.
Spider mites always leave behind cast skins and egg shells – great for diagnostics!
Honeylocust spider mites, eggs and discarded skins
Color change in mites going into dormancy (Diapause)
With diminishing day length twospotted spider mite goes into a dormant condition known as diapause. Often there is an associated color change.
Monitor to detect incipient outbreaks
Detect symptoms at this point

Before it progresses to this...

...and then this.
Spider mites always leave behind cast skins and egg shells – *great for diagnostics!*
Cuttings, if used from a mother plant with mites, should be disinfested of all living stages of mites before introduction into a growing area.
Avoid conditions that allow “steamrolling” of mite populations
Natural enemies of spider mites

Minute pirate bug (feeding on thrips)

Predatory mite feeding on spider mite

"Spider mite destroyer" lady beetles

Predatory thrips
Predatory Mites
Predatory Mites for Potential Use on Indoor Grown Hemp

• *Mesoseiulus longipes*
• *Neoseiulus californicus*
• *Galendromus occidentalis*

Note: The above species are the predatory mites that are most tolerant of low humidity. However, performance of all is reduced under low humidity.
Sprinkling mites onto plants
Hanging sachet packages
Predatory Mite: *Galendromus occidentalis*

Optimal environmental conditions

80-100 degrees F

> 50% RH
Predatory Mite: *Mesoseiulus longipes*

Can only tolerate the very low humidity of 40% when the temperature is 70°F.

*Requires increasing humidity as temperature rises.*
Minute pirate bugs

Hemiptera: Anthocoridae

Photograph courtesy of University of California IPM Program
Horticultural Oils are pretty much the best spray option for spider mites on hemp.