

Chemical control for twospotted spider mites in field-grown strawberries

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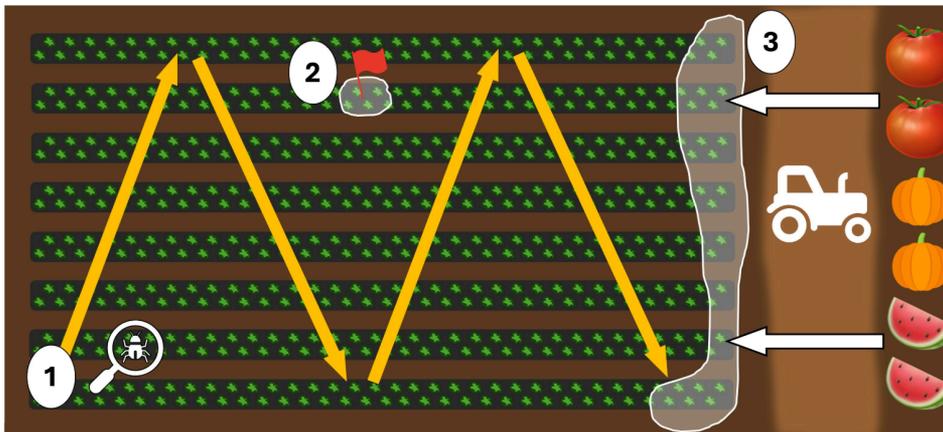
Twospotted spider mite

Eggs and adults

Injury to strawberries

- Twospotted spider mites reduce yield by reducing number of fruits produced.
- Fruit quality can be reduced by direct mite feeding and sun scald due to smaller canopy size.
- Young plants (Fall, Winter, early-Spring) are more susceptible to mite feeding.
- Scouting early and often is critical to keep infestations below threshold levels.

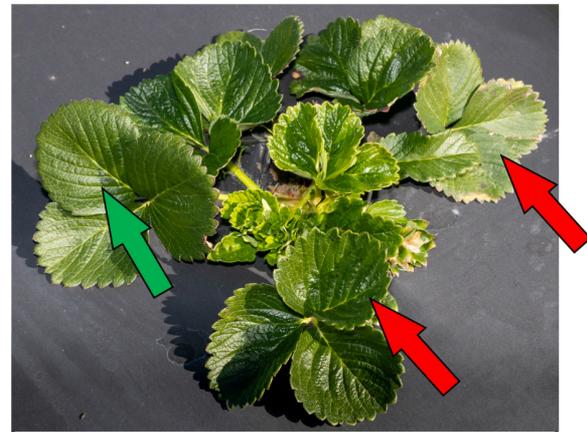
Field scouting



1. Example of walking pattern for taking random samples from a strawberry field.
2. Early infestations also often appear as aggregated “hot spots”. Flag these spots and revisit them to assess growing mite numbers or miticide efficacy.
3. Spider mites often first invade the edges of fields along dirt roads, near previously infested crops, and along the upwind side.

Mite numbers can be estimated two ways. For each, sample 10 leaflets/acre:

- Count mobile mites and take an average of # mites per leaflet.
- Presence/Absence sampling: Record the % of leaflets with spider mites. Only use when mite numbers are low (<10/leaflet).



On young plants, sample leaflets from the oldest fully expanded leaf

These should be dull green (green arrow) and not bright and shiny or old and dirty (red arrows).

Spider mites are primarily on the underside of leaves.



Use a 10X hand lens to count mobile mites.

Contact me!

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Treatment thresholds

 **Pre-flowering plants:**
5 mobile mites/leaflet or 5% leaflets infested

 **Post-flowering plants:**
15 mobile mites/leaflet



Phytoseiulus persimilis

Predatory mites

 Naturally occurring predatory mites include *Phytoseiulus persimilis*.

- If predatory mites are present and equal to half the number of spider mites, **do not spray**.
- If releasing predatory mites, wait at least 5-7 days after a miticide application.

Management tips and miticides recommended

 **Vigorous strawberry plants** are your first line of defense. Overfertilization and water stress promotes mites. Day-neutral cultivars are more susceptible to spider mites. **Check plugs/transplants** for spider mites before planting in field.

 Spider mites are active when temperatures are >50°F. Mite numbers increase rapidly under **hot and dry conditions**.

 **Scout fields early and often**. Mark initial infestations with flags to revisit, assessing growth and miticide efficacy.

 **Thorough coverage and canopy penetration** is critical for sprays to reach mites.

 **Apply miticides using >100 GPA**. Rotate miticides mode of action to delay resistance.

IRAC	Active ingredient	Example Product	Target life stage			Efficacy	REI (hrs)	PHI (days)	Max # application per crop cycle***
			Eggs	Immature	Adults				
20D	Bifenazate	Acramite	✓	✓	✓	Excellent	12	1	2
20B	Acequinocyl	Kanemite	✓	✓	✓	Good/Excellent	12	1	2
25	Cyflumetufen	Nealta	✓	✓	✓	Good/Excellent	12	1	2
23	Spinomesifen	Oberon		✓	✓	Excellent	12	3	1
10A	Hexythiazox	Savey	✓	✓		Good	12	3	1
10B	Etoazole	Zeal	✓	✓		Good	12	1	1
21A	Fenpyroximate	Portal		✓	✓	Good	12	1	2
21A	Fenazaquin*	Magister*	✓	✓	✓	Good	12	1	1
6	Abamectin **	Agri-mek		✓	✓	Good	12	3	14 fl oz/yr
UN	Neem oil/azadirachtin	Trilogy, Neemix	✓	✓	✓	Fair/Good	4	0	None
UN	Morticultural mineral Oil	Monterey Horticultural Oil	✓	✓	✓	Fair/Good	0	0	None
UN	Insecticidal soap	M-Pede, Safer Soap		✓	✓	Fair/Good	12	0	None
UN	<i>Beauveria bassiana</i> GHA	BoteGHA, BotaniGard	✓	✓	✓	Fair/Good	4	0	None
UN	Sulphur	Sulfur		✓	✓	Fair	24	0	See label
UN	<i>Isaria fumosorosea</i>	PFR-97	✓	✓	✓	Fair	4	0	None
UN	<i>Burkholderia</i> spp strain A396	Venerate		✓	✓	Fair/Good	4	0	None
UN	<i>Chromobacterium subtsugae</i>	Grandevo		✓	✓	Fair	4	0	None
UN	Paraffinic oil	JMS Stylet-Oil	✓	✓	✓	Fair/Good	4	0	None
UN	Botanical oils	Ecotec	✓	✓	✓	Fair	0	0	None

*Harmful to pollinators. Do not apply when bees are foraging. See label for restrictions on use. Consider only applying pre-flowering.
 Abamectin has translaminar properties, so do not use sticker/spreader adjuvants. Label recommends applying twice 7-10 days apart, so second application kills newly hatched nymphs. *Max # applications assumes one crop cycle per year. See label if growing >1 strawberry crop. ****For all organic products see label for additional information on use. Reapplication every 5-21 days might be necessary depending on product. Some products pose a risk of phytotoxicity. These products have very little to no residual efficacy so through coverage and contact with mites is necessary to be effective.

References

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 UC IPM strawberry. Access at: <<<https://ipm.ucanr.edu/agriculture/strawberry/>>>
 NCSU website. Hannah Burrack (2025). Access at: <<<https://entomology.ces.ncsu.edu/2014/02/sampling-mites-in-strawberries/>>>

