

MITES

That Prey Upon Arizona Crops

D. M. Tuttle

Entomology Department

In recent years several species of mites have become increasingly important as pests of crops in Arizona. Most major crops are attacked by one or more species. Recognition and control of these pests have been difficult because of their small size.

Mites feed by puncturing the leaf surface and extracting the plant sap. Early injury produces leaf mottling. Further injury results in discoloration, desiccation



APRIL

- 2-3—Arizona Ranch School. Liberal Arts Bldg. and Campbell Ave. & Casa Grande Hwy. Farms, U of A Campus, Tucson.
- 8-12—Yuma County 4-H Fair, Yuma.
- 10-11—Maricopa County 4-H Fair, State Fair Grounds.
- 18—Little Ariz. National Livestock Show—sponsored by Block & Bridle Club, Campbell Ave. Farm—beginning 12:00 noon, U of A Campus, Tucson.
- 19—Santa Cruz County 4-H Fair, Sonoita.
- 24-25—Pinal County 4-H Fair—11-Mile Corner
- 25—U of A 4-H Service Club Jr. Leader Field Day—U of A Campus, Tucson.

MAY

- 1—Poultry Industry Field Day—U of A Poultry Farm, Tucson.

JUNE

- 2-5—Town & Country Life Conference—U of A Campus, Tucson.
- 12-16—State 4-H Junior Leader Laboratory—Prescott.
- 13-19—National 4-H Club Conference—Washington, D. C.

JULY

- 13-15—Joint Meeting—Western Section American Society of Animal Production & Western Division of American Dairy Science Assn.—U of A Campus, Tucson.

and finally defoliation. Such damage often causes stunting and sometimes the death of the plant. Usually only the leaves are injured, but when mites are numerous they may also damage stems, buds and fruits.

Small But Vicious

Mites are very small, measuring .4-.8 mm. in length (less than the diameter of a pin head). They are varied in color, ranging from yellowish, greenish, reddish and brownish to almost black. Their bodies are soft and pear-shaped. Mites can be further identified by having eight legs, except in the newly-hatched stage.

Eggs are deposited singly on the leaf surfaces of the host plant. Plant hairs, and the webbing made by some species of mites, afford protection for the eggs and developing nymphs. Females pass through three nymphal stages before becoming adults, although males require only one nymphal stage. Under favorable conditions a generation develops in 10 to 12 days, or even less. During a year there may be as many as 12 to 16 generations.

Many of our important species of plant feeding mites are general feeders while others are specific on certain host plants. Mites are dispersed in several ways. They may crawl short distances or become more widely distributed by wind, mechanical means, or even by irrigation.

Many Crops Affected

The two-spotted spider mite (carmine form), *Tetranychus cinnabarinus* (Bois.), is perhaps the most prevalent mite in Arizona. It attacks a wide range of food plants and reduces yields of various agricultural crops. Important crops attacked include alfalfa, cantaloup, castor bean, cauliflower, corn, cotton, lettuce, safflower, sorghum and watermelon. The adults over-winter readily on many weeds and winter-growing plants.

The two-spotted spider mite, *Tetranychus telarius* (L.), is closely related to the preceding species. The host plants for both are much the same in Arizona. Sometimes this has been referred to as the "green phase" of the two-spotted mite. Occasionally, it exhibits some resistance to sulfur and is more difficult to control than other species.

The desert mite, *Tetranychus desertorum* (Banks), occurs some years on many crops. It has caused serious damage to cantaloup, cotton, watermelon and to home flower gardens. The desert mite has also been found on alfalfa, celery, creosote bush, mallow, sorghum, strawberry and sugar beet.

This One's Seasonal

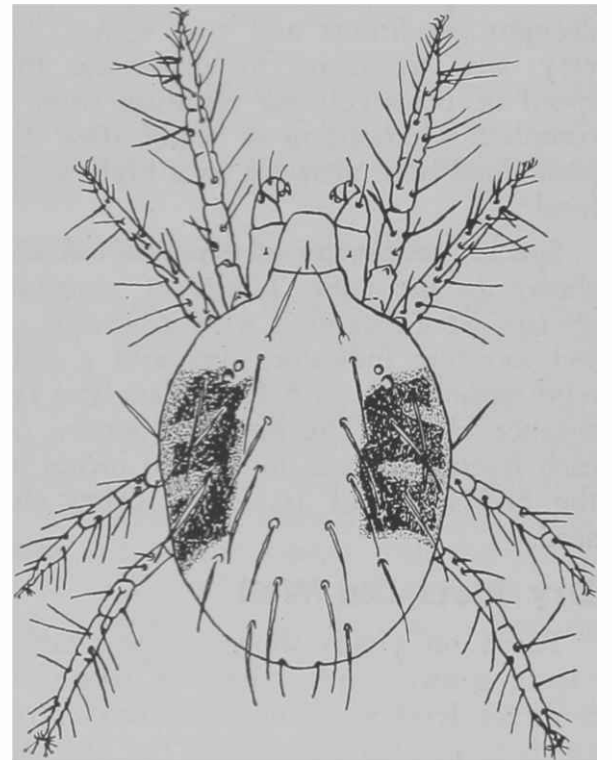
The clover mite, *Bryobia praetiosa* (Koch), is one of the larger mites feeding on plants. It is abundant from February to May on clover, alfalfa, apple, rye, garden flowers and sometimes other crops

and plants. Each spring numerous complaints of this mite invading homes are usually received by the University. Unlike many other plant feeding mites this species feeds primarily on the upper surfaces of leaves and does not form webbing.

Oligonychus pratensis (Banks) is mainly a pest in grain sorghum and bermuda grass in Arizona. It has frequently required insecticidal control measures for both crops.

Oligonychus stickneyi (McG.) also occurs on bermuda grass and sorghum. It is apparently our most common mite in bermuda grass seed fields.

The brown wheat mite, *Petrobia latens* (Mull.), has been a problem in barley, wheat, bermuda grass and onion. When abundant, it migrates to cantaloup, alfalfa, cotton, endive, lettuce and carrot. Occasionally, this mite invades homes during the spring months. Records indicate the brown wheat mite is prevalent from February to March.



TETRANYCHUS TELARIUS (L.)

TWO-SPOTTED SPIDER MITE

New Controls Available

Prior to 1950, dusting sulfur was the only material commonly used for mite control in Arizona. It is still effective under favorable conditions and is widely used in insecticidal dust mixtures. During the last decade a number of synthetic organic miticides have become available and have been extensively tested by the University of Arizona Agricultural Experiment Station. In addition to sulfur, materials currently suggested for controlling mites on Arizona crops include particularly Aramite, demeton (Systox) and Kelthane. Detailed mite control recommendations, based on recent research, are available through the Agricultural Extension Service.