



Figure S4.1. A 10X hand lens is useful for locating mites on foliage. A fine sable-hair brush (sizes 00 to 00000) is desirable if handling individual mites because sable hairs are tapered. A soft larger brush is useful for brushing large quantities of mites from foliage or from glass plates containing mites brushed from foliage with a mite-brushing machine. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)

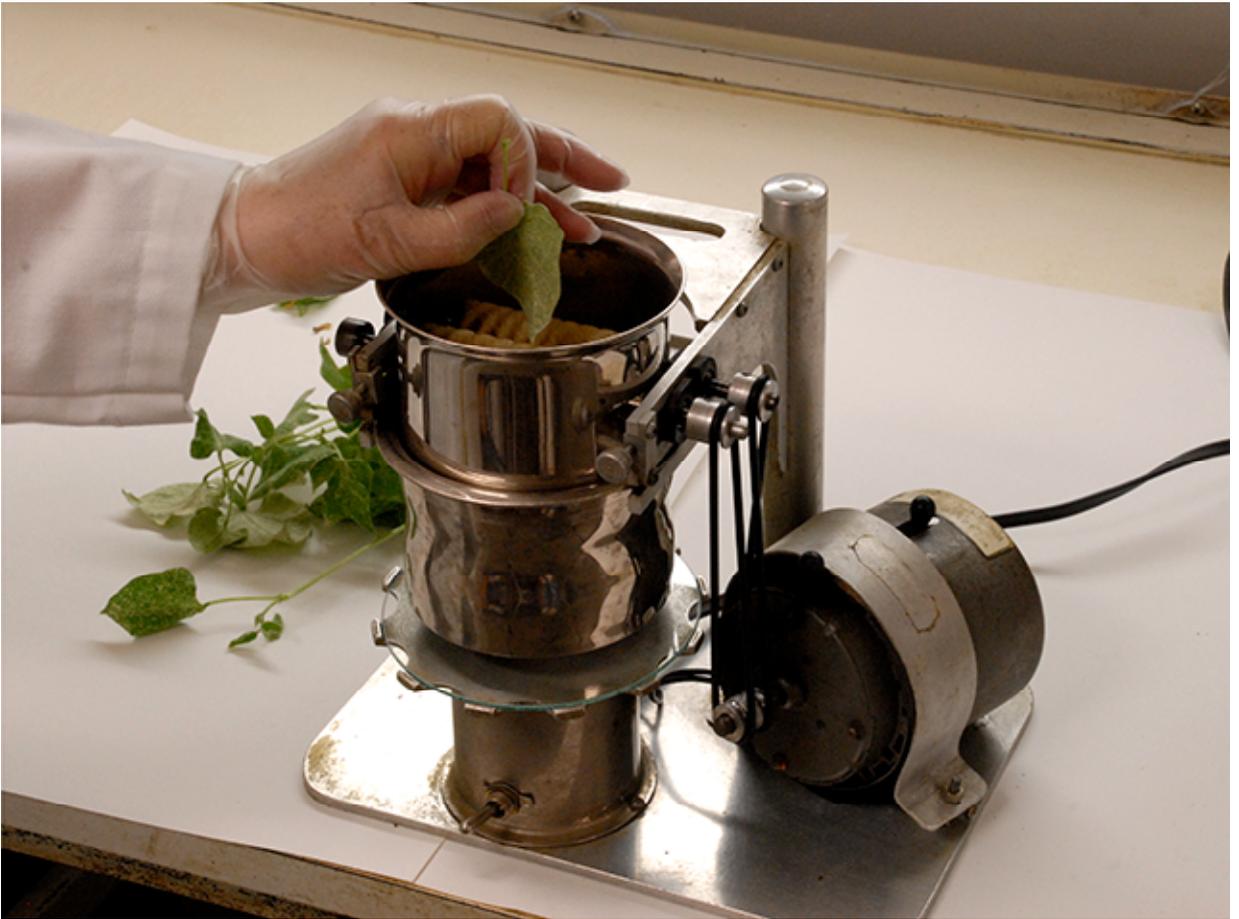


Figure S4.2. A. A mite-brushing machine. While brushing spider mites from foliage, wear gloves, a lab coat, and wear a dust mask (not shown) to reduce the likelihood of developing allergies to mites. The two brushes at the top of the machine rotate and the leaf containing the mites is inserted between them. Mites brushed off the leaf are collected on the rotating glass plate at the bottom. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)

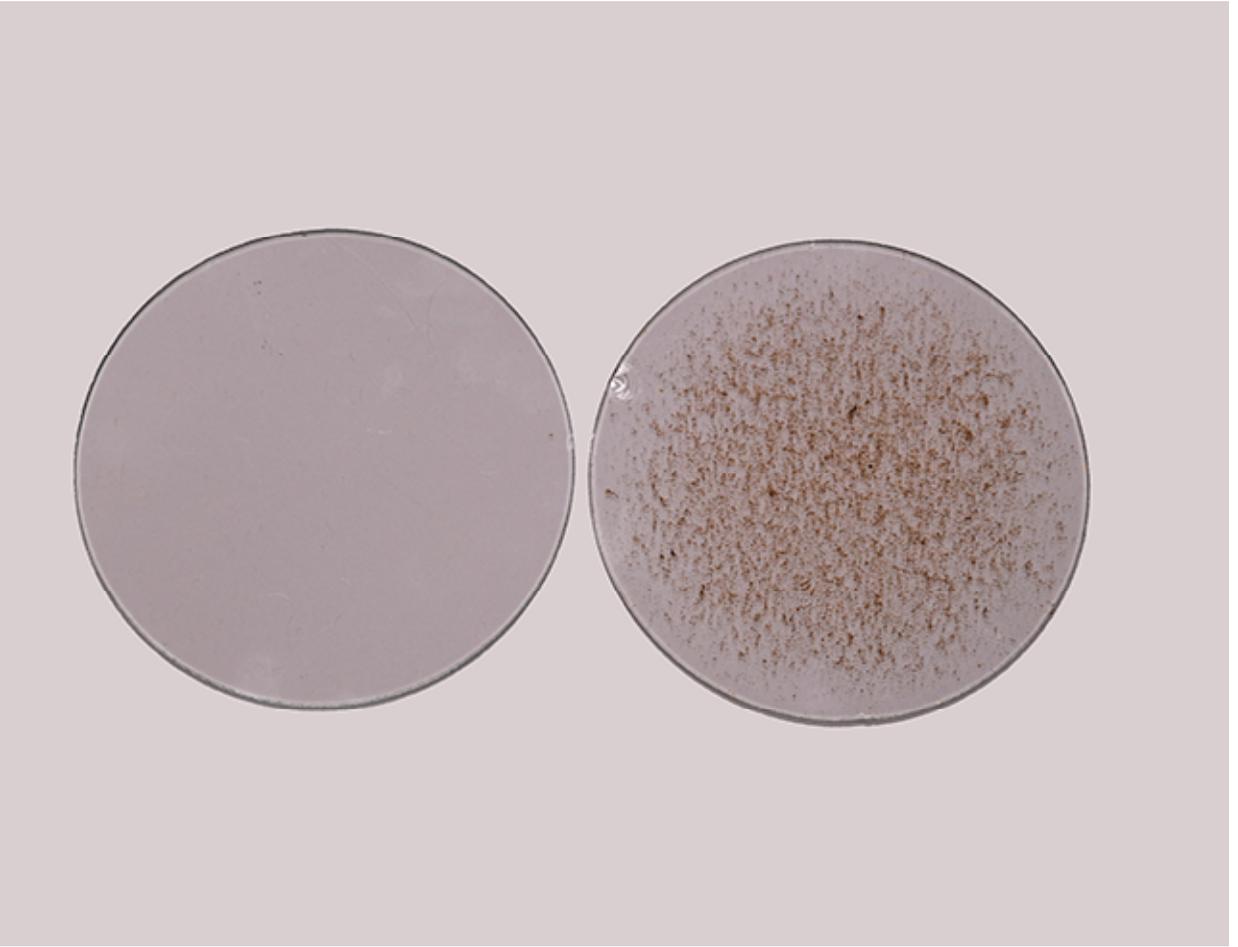


Figure S4.2. B. The mites on the glass plate can be counted if you are assaying population densities in a crop. Alternatively, the mites can be brushed off the glass plate to feed phytoseiid predator colonies. A clean plate is on the left and the right plate contains spider mites. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S4.3. Towers placed within an almond orchard contain greased plastic panels to monitor aerial dispersal of spider mites and phytoseiid predators. The grease (sewing machine oil) is sufficiently fluid that larger arthropods do not stick to the panels. (Photo by M. A. Hoy, Department of Entomology, University of California-Berkeley.)



Figure S4.4. One example of a Berlese funnel system for extracting mites and other arthropods from soil, leaf litter, moss, or foliage. Funnels can be of different sizes and the intensity of light can be varied, depending on the sample size and sampling goals. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)

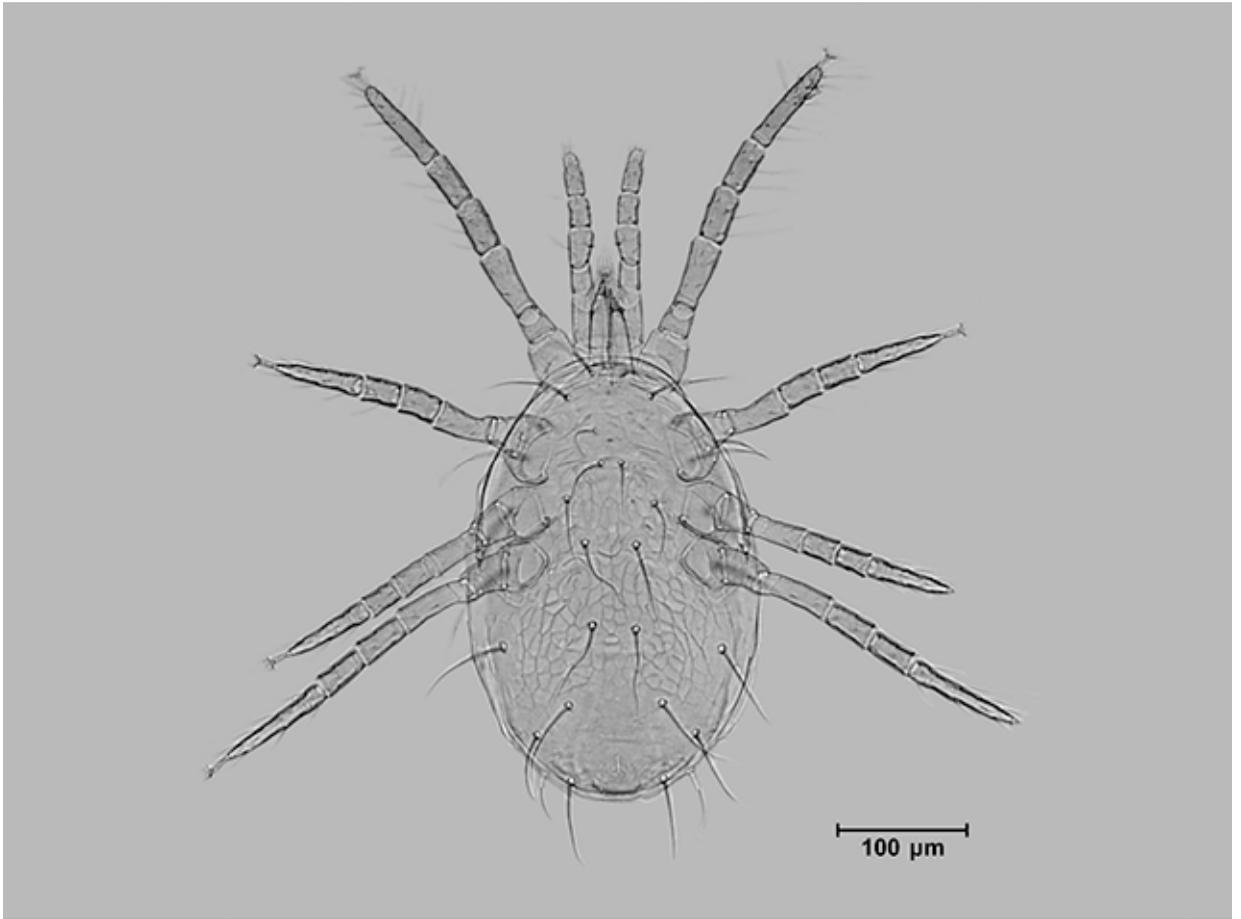


Figure S4.5. A. View of a slide-mounted phytoseiid mite.

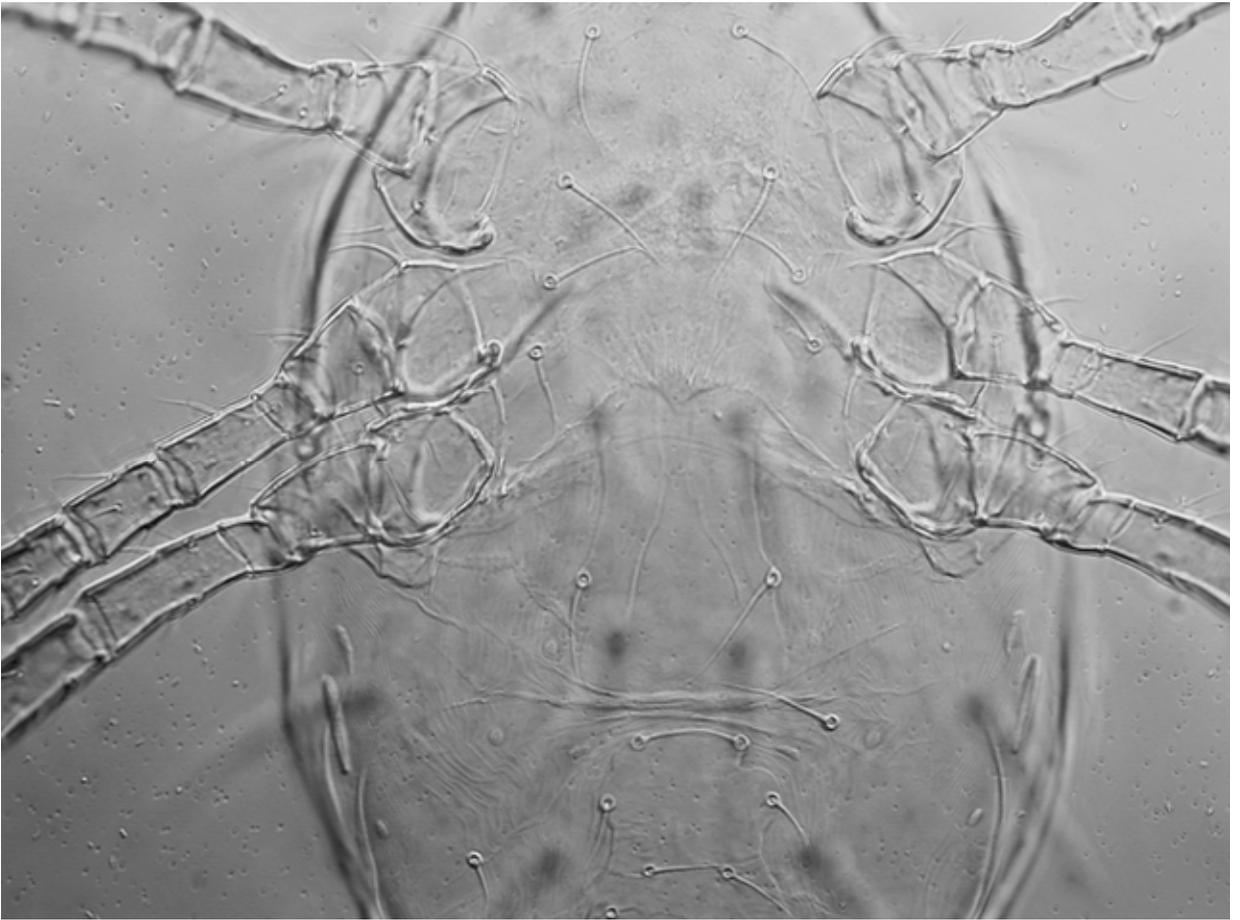


Figure S4.5. B. View of the venter of a female showing setal patterns. (Photos by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville).

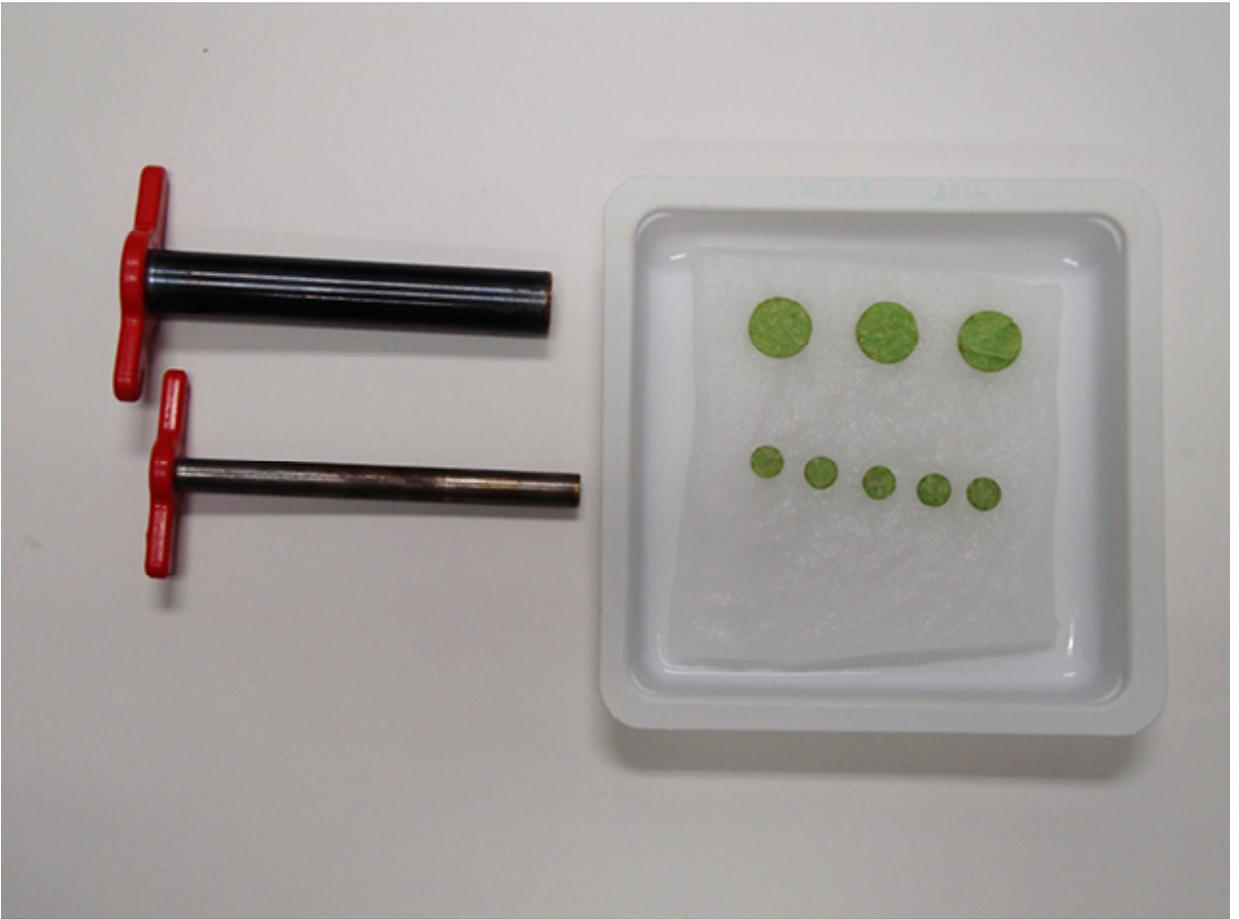


Figure S4.6. Plant-feeding mites can be isolated and reared on leaf discs of their host plant. Leaf discs can be cut with a single-edge razor blade or with cork borers. This method also allows study of some species of predatory mites that feed on the plant-feeding mites. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S4.7. Rearing of the two-spotted spider mite *Tetranychus urticae* on pinto bean plants in a greenhouse to obtain prey for phytoseiid colonies. Seeds are sowed shallowly and thickly in a mixture of soil and vermiculite. Within a week the plants have emerged and the dicotyledon leaves have expanded. Subsamples of foliage

from older spider mite cultures are examined to confirm that no contamination with predators has occurred. Cut beans containing spider mites only are then laid on the top of the clean bean plants. As the cut foliage dries, the active stages of spider mites walk on to the young plants and multiply. Typically, these flats are ready for harvesting within a week in the greenhouse. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)

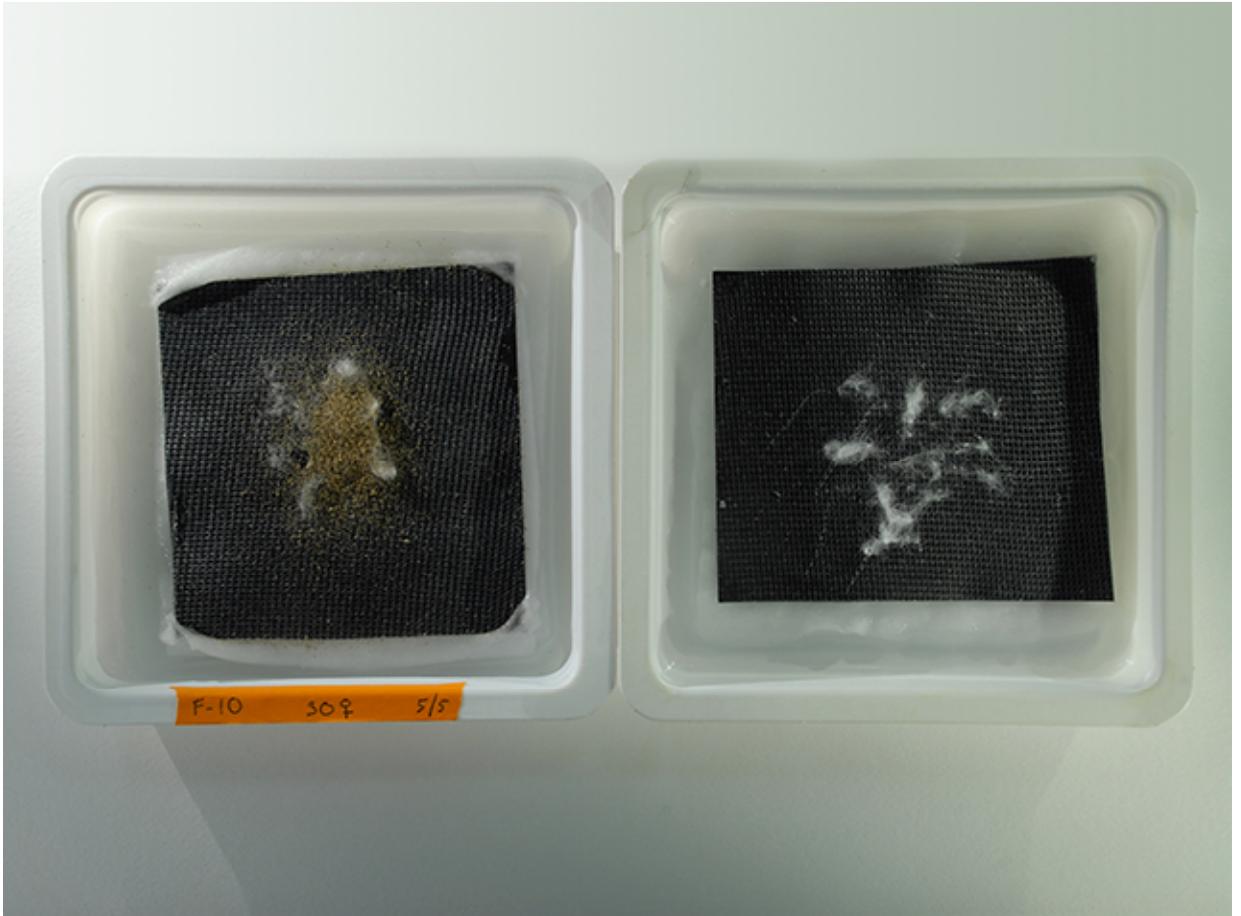


Figure S4.8. One method to maintain phytoseiid colonies in the laboratory involves rearing them on an artificial substrate that rests on water-soaked cotton. In this case, black artist's paper is dipped in melted paraffin wax and allowed to dry on a mesh so that small grooves are present (pseudo leaf veins), because phytoseiids often are found along leaf veins. Small tufts of cotton are added to the paraffin disk, as well,

because many phytoseiids like to deposit eggs on or in leaf hairs (right). The dish on the left contains phytoseiids that have been fed spider mites of all stages obtained by brushing mites off bean leaves with a mite-brushing machine. Such colonies can be maintained for several weeks before subculturing must be done. The dish on the right lacks mites. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)