Mites Make Right in Honduras -- or Not?

“How can something so small be such an annoyance?”

We’ve all had this thought after having been bitten by a mosquito or having survived a paper cut. In Honduras, a tiny spider mite is having just such an outsize impact on the cultivation of strawberries, a valuable export crop there.

The cyclamen mite, Phytonemus pallidus, is so small that a hand lens is required to see it. Like a tiny vampire, the mite attacks strawberry plants, bruising cells with its small, whiplike mouth parts and ingesting the sap. The mite leaves the upper leaf surface wrinkled, with veins bulging up like blisters and a bushy appearance due to damaged stems.

Honduran farmers’ customary way of dealing with this pest has been to dip the planting material—the crowns—in a mite killing solution. While this eliminates one problem, the mite, it creates another: an accumulation of pesticide residue in the strawberry itself.

Scientists with the USAID-supported Integrated Pest Management Collaborative Research Support Program have explored a variety of techniques to avoid toxic pesticides and have come up with a novel solution. By dipping the crowns for 30 minutes in water heated to 43°C (109°F), the scientists discovered that the plants remained free of the destructive mites for 26 weeks in the field—long enough for plants to grow to maturity and be harvested.

As added security against the phytophagous (plant-feeding) mites, the researchers introduced some predaceous (in this case, mite-eating) mites into the fields. These insect cannibals, as it were, ensure that there won’t be any plant-feeding mites around to damage the strawberry plants.

“Our studies are encouraging,” says Jeff Alwang, lead researcher on the project. “The total marketable yield of the thermally treated plants was significantly higher than the control groups. And the cost of production using thermally treated planting material is considerably less,” he adds.