



TetraCURB™ Concentrate - Cutting Dip, a New Application Type

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Trial courtesy of Robrick Nursery, Florida We thank the team for their help executing the trials and sharing the data.

- *TetraCURB Concentrate killed spider mites after dipping cuttings in a diluted solution.*
- *TetraCURB had no phytotoxic damage on cuttings.*
- *TetraCURB did not leave a residual effect on the plant's surface.*
- *TetraCURB Concentrate is a minimum risk miticide.*

INTRODUCTION

Dipping cuttings is another way to mitigate pest infestation in ornamental greenhouses. Immersing cuttings into a biopesticide solution composed of a horticultural oil that's blended with a soap and emulsifier, such as TetraCURB Concentrate, allows complete coverage to help control mite populations in a short period of time. Dipping is a quick and efficient process that uses a low amount of product and can be easily integrated into an Integrated Pest Management program.

The objective of this trial was to evaluate the efficacy of TetraCURB to kill active spider mites on annual and perennial plants when used as cutting dip. Also, the potential phytotoxic damage of TetraCURB dipping solution on cuttings was evaluated.

MATERIALS AND METHODS

Three fresh trial solutions were prepared in plastic tubs:

- Negative control: water
- Dipping Treatment #1: one gallon of 0.25% solution (dilution of TetraCURB at 1/3 oz/gal in water)
- Dipping Treatment #2: one gallon of 0.5% solution (dilution of TetraCURB at 2/3 oz/gal in water)

Selected plant variety for the trial:

- Cuttings evaluated for spider mites: Blue Fan (*Scaevola aemula*) and Lady Margaret (*Passiflora*).
- Cuttings evaluated for phytotoxicity: Blue Fan (*Scaevola aemula*) and Lady Margaret (*Passiflora*), Louisiana Red (*Acalypha wilkesiana*), Milkweed Yellow (*Sclepias curassavica*), Alice DuPont (*Mandevilla*), Faye Chapel (*Salvia splendens* van houttei), Torenia Blue (*Torenia fournieri*).

Treatment Process:

No treatments were applied before the trials. Plants were hand-watered with water and fertilizer only.

- 1) Pre-examination of the harvested cuttings with hand lens to determine the presence of spider mites
- 2) Complete submersion of clippings in the freshly-prepared TetraCURB solutions for 30 to 120 seconds
- 3) Gentle agitation of the cuttings during immersion to ensure complete coverage.

Total treated trays containing each variety: 32

Measurements:

- **Efficacy.** After 24 hours and nine days respectively following treatment, a total of 64 cuttings were randomly selected from each tray of *Scaevola* and *Passiflora*. The cuttings were examined under a binocular dissecting microscope. Adult mites and eggs were counted on each leaf.
- **Phytotoxicity.** Each tray was photographed before and after the study to analyze for phytotoxic effect.

RESULTS

EFFICACY TEST

Figure 1 shows the data from the scouting report. Adult mites and eggs were counted on Blue Fan (*Scaevola aemula*) leaves after 24 hours and nine days respectively following treatment.

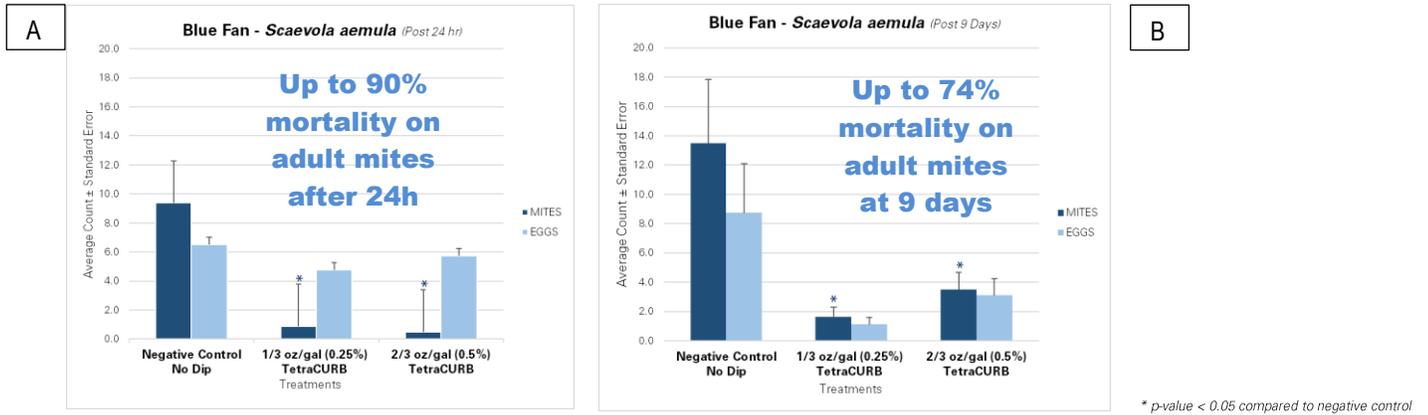


Figure 1. A) Adults mites and eggs mites counts after 24h B) Adults mites and eggs mites counts after nine days

It is important to remark that TetraCURB had limited efficacy on eggs as compared to adult and nymph mites. TetraCURB is labeled to target spider mites in the adult and nymph stages of the pest life cycle, and has no residual effect. Therefore, emerging mites from eggs can be expected over the period of a week.

PHYTOTOXICITY TEST

To determine the potential phytotoxicity damage of dipping cuttings into a diluted TetraCURB Concentrate solution, photographs of the same tray was taken before and after treatment. Figure 2 shows the photos of *Torenia Blue* species before (left) and after 24 hours (right) following 2/3 oz/gal TetraCURB treatment solution. There was no phytotoxic damage observed on *Torenia Blue* cuttings after TetraCURB treatment, the leaf color and aspect remain intact.



Figure 2. Photos of *Torenia Blue* before and after 24 hours following 2/3 oz/gal TetraCURB treatment solution.

DISCUSSION

The trial confirmed a new way to apply TetraCURB when there is mite pressure in an ornamental commercial greenhouse. Dipping cuttings in TetraCURB solution showed up to 90% control of adult mites after 24 hours, and 74% after nine days. We tested two rates for a dip application: 1/3 oz/gal. for a preventative program or 2/3 oz/gal. for a moderate mite infestation. Additionally, TetraCURB showed no phytotoxicity damages on flower and leaves after the dipping, offering a safe solution for plants to help growers reduce incoming active mite populations on crops.

Recommendation: Not every variety of plant may behave the same and each user should perform a jar test on a small number of cuttings. Read label for complete application direction. Certain statements may not be applicable in all geographic regions. Product labeling, and associated claims may differ based upon regulatory requirements. Consult with your regulatory representative for specific applications and labeling.