



Research Report

Title: ARMOREX and PLANT DEFENSE for Control of Russet Mites on Field Grown Hemp

Location: East Side of Field, Soil Type: Sandy, Eastern Colorado, USA.

Principal Investigators: Research Development Department at Soil Technologies Corp.

Crop: Hemp

Date: May to October 2018

Abstract: This study conducted in Eastern Colorado, USA, evaluated the efficacy of ARMOREX, PLANT DEFENSE, and GREEN CLEANER in controlling russet mites on field-grown hemp. The trial involved plants spaced 30 inches between rows and 32 inches between plants, with clones planted on May 8, 2018, and harvested on October 18, 2018, at the end of the flowering stage. Applications began in early September 2018 and were repeated every three days using a 1:100 dilution rate and a Craftsman backpack sprayer. ARMOREX demonstrated high efficacy, with a 99% kill rate on russet mites under medium and heavy spray conditions. PLANT DEFENSE also showed effectiveness, achieving a 90% kill rate under heavy spray conditions. However, the effectiveness of both products was limited under light spray conditions. GREEN CLEANER, when applied as per label directions, achieved a 50% kill rate. These findings suggest that ARMOREX and PLANT DEFENSE are promising options for russet mite control in hemp cultivation, especially when applied adequately.

A new application was applied every 3 days after. (September 8, 11, 14, 17, last application on 20th.) Treated plants: 6 plants treated with Armorex, 6 plants treated with Plant Defense, remainder treated with Green Cleaner.

Dilution rate: 1:100

Area dosage: Estimated 20 linear foot per 1 gallon of tank mix

Sprayer: Craftsman backpack sprayer.

RESULTS

Efficacy on a scale of 1 – 10, with 1 = barely effective and 10 = 100% kill rate.

- Armorex: 9
- Plant Defense: 7
- Green Cleaner: 4

Additional Notes: When running our R&D trial with Armorex and Plant Defense, we choose 6 plants for each product in a single row on the east edge of the field. We grouped plants together in groups of 2. The mixture was made based on label ratio. The mixture ratio was the same for every application type. Only the amount of mixture applied was changed for the trial.

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- The first 2 plants received a 'light' spray of the mixture. The light spray was very close to mimicking a poorly working boom sprayer (50% coverage).
- The next 2 plants received a 'medium' spray. This was close to a properly functioning boom sprayer (95% coverage).
- The last 2 plants received a 'heavy' spray, mimicking an over-application of the mixture. (100% coverage with excess mixture dripping off plants).

ARMOREX

- Light spray: Not effective. Estimating 60% survival of russet mites
- Medium spray: effective. Estimating 99% kill of russet mites
- Heavy spray: effective. Estimating 99% kill of russet mites.

PLANT DEFENSE

- Light spray: Not effective. Estimating 80% survival of russet mites
- Medium spray: effective. Estimating 80% kill of russet mites.

- Heavy Spray: effective. Estimating 90% kill of russet mites.

GREEN CLEANER

- When used per label direction: 50% kill of russet mites.

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