

## **OIL EMULSIONS ENHANCE TRANSCUTICULAR MOVEMENT OF CAPTAN INTO APPLE LEAVES**

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Oil sprays increase the phytotoxicity of Captan to apple foliage. The purpose of this study was to determine if oils increase the penetration of Captan through leaf cuticles. Enzymatically isolated apple leaf cuticles were used as a model system to study Captan penetration. A bioassay was developed using the inhibition of growth of *Penicillium cyclopium* on potato-dextrose agar as a measure of Captan penetration through the cuticle. Captan penetrated through both surfaces, but significantly more penetrated through the abaxial cuticles than the adaxial cuticles. Increasing the Captan concentration increased the Captan penetration through the abaxial cuticle in a linear relationship. Captan penetration through the cuticle was increased by 63% when cuticles were treated with Captan plus 1% emulsified soybean oil. Abaxial cuticles treated with Captan plus emulsified soybean oil or with Captan plus SunSpray Ultra-Fine oil had > 125% greater Captan penetration than cuticles treated with only Captan. Cuticles treated with Captan plus dormant oil (petroleum oil) had 220% more Captan penetration than the Captan only treatment.