

# ABSTRACT

Heavy alkylate, a paraffinic oil, was satisfactory as a carrier for air-assisted, ground, ultra low volume (ULV) sprays. Deposition with such formulations was equivalent to that achieved with commercial ULV formulations. Their performance, compared with low volume (LV) sprays, depended on the nature of the crop canopy. Recovery rates of copper from Kocide on tomato were higher for ULV than LV whereas the opposite was true on cucumber. LV and ULV sprays deposited more fungicide on the ventral than dorsal surface of grapefruit leaves. In the field, weathering was the main controlling factor for the maintenance of residues on citrus, whereas on tomato and cucumber, respectively, it was leaf longevity and leaf expansion. There was a differential loss of LV and ULV fungicide deposits from dorsal and ventral surfaces of grapefruit leaves under various weathering conditions. ULV deposits were more tenacious than LV deposits under simulated rainfall, on sweet pepper, tomato, cucumber and grapefruit. All deposits were most tenacious on cucumber and least on tomato and high volume deposits proved no less tenacious than LV deposits. Density of leaf hairs and veinal contours in cucumber were closely correlated with retention and deposition with high volume sprays applied to run-off.

ULV formulations in heavy alkylate and LV formulations of Kocide applied at rates 50% lower than those usually recommended, effectively controlled early blight of tomato. LV formulations of protectant and systemic fungicides at similarly reduced rates gave excellent control

of citrus greasy spot. ULV copper sprays did not provide adequate control of angular leaf spot of cucumber. Extensive deposit dilution due to the rapidity of leaf growth and expansion, of production of new, unprotected foliage and of disease spread under wet conditions were shown to be responsible for the rapid break down of control with LV sprays at weekly intervals.

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