

## **ECONOMICS OF VIF USE WITH INLINE AND PIC EC IN CALIFORNIA STRAWBERRIES**

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Integrating scientific and economic results from a multidisciplinary research project, we evaluate whether or not the use of virtually impermeable film (VIF) increases the net revenues obtained from Inline and emulsified chloropicrin (PIC EC) treatments, relative to when standard polyethylene is used. We compare returns from the alternative treatments to those from methyl bromide-chloropicrin (MBr-PIC) applied using both standard tarp and VIF. We evaluate the sensitivity of our findings to the prices for strawberries, labor, and VIF.

The data include two years of experimental results from two locations each year: one in the Watsonville, California region, and one in the Oxnard, California region. The remainder of this abstract only describes results from the first year. At each location, Inline and PIC EC were applied at 50, 100, 200, 300 and 400 lbs per acre in water through the drip irrigation system. One set of applications for each fumigant used VIF plastic, and one set used standard polyethylene tarp. For comparison, MBr-PIC was shank-applied at 350 lb/A under each kind of tarp. Each treatment was replicated 4 times. Weed densities, weed biomass and weeding time were periodically measured within each plot in 90 ft long sections. Yields were measured for sets of 40 plants (Oxnard) or 30 plants (Watsonville). The plots were harvested every time the adjoining commercial plot was harvested.

VIF increased profits for the most profitable rate for each fumigant at Oxnard. At Watsonville, it decreased profits for the most profitable chloropicrin rates, and slightly increased profits for the Inline case. Overall, however, there was no single effect of VIF on profitability across rates, locations, and treatments.

VIF reduced weeding times for all treatments at both locations. If the price of field labor were to increase, then the economic benefit of VIF would increase. Because the effect of VIF on yield varied by treatment, application rate, and location, the effect of an increase in the price of strawberries on the profitability of VIF use is indeterminate. An increase in the price of VIF reduces the profitability of its use.

At both locations, some fumigant application rate-tarp treatments were more profitable than the MBr-PIC treatment with standard tarp. At Oxnard, VIF increased the profitability of MBr-PIC, while at Watsonville VIF slightly reduced the profitability of MBr-PIC.