EFFICACY OF TELONE PRODUCTS IN FLORIDA CROPS: A SEVEN YEAR SUMMARY

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Thirty-five tomato trials, five pepper trials, and eight strawberry trials, conducted from 1993 to 1999, were summarized for this report. Trials were conducted primarily by University of Florida researchers and encompass the key production areas of Florida. Telone C-17 (78.3% 1, 3-dichloropropene + 16.5% chloropicrin) or Telone C-35 (61.8% 1, 3-dichloropropene + 35% chloropicrin) (Telone products) were applied in the bed at 35 gallons per treated acre and compared to the untreated check and to methyl bromide/chloropicrin (MB/Pic), primarily 67/33 (67% methyl bromide/33% chloropicrin) or 98/2 (98% methyl bromide/2% chloropicrin) mixtures. MB/Pic rates were usually 350 lbs/treated acre for the 67/33 formulation and 400 lbs/treated acre for the 98/2 formulation. Observations on crop yield, crop vigor, and soil-borne pest control for Telone C-17 or Telone C-35 in each trial were characterized as statistically superior to, equal to, or inferior to the untreated check and to MB/Pic standards. The frequencies of these characterizations were then tabulated. These trials were conducted over a number of years and raw data were not available for all trials. For these reasons, statistical analyses on which these characterizations were based were different for different trials. Mean separation analyses conducted by the researcher were used when raw data were unavailable, usually at the 0.05 level of probability. When raw data were available, analyses were either LSD or Tukey's HSD at the 0.10 level of probability. When more than one treatment of the same product at rates of interest were included (i.e. two formulations of MB/Pic), observations were characterized as statistically equal unless all observations for multiple treatments were statistically superior or inferior to the comparative treatment.

Nematode Control: Control of root-knot nematodes (*Meloidogyne* spp.) with either MB/Pic or Telone products was equal to or superior to the untreated check in 100% of observations in tomatoes, peppers and strawberries. Telone products were equal to or superior to MB/Pic for control of root-knot nematodes in nearly 95% of observations on tomatoes and in 100% of observations on peppers and strawberries. Control of sting nematodes (*Belonolaimus* spp.) with Telone products or MB/Pic was equal to or superior to the untreated check in all observations on all crops. Telone products were equal to MB/Pic for control of sting nematodes in 100% of observations on all crops. Telone products were equal to or superior to the untreated check for control of stubby root nematodes (*Trichodorus* spp.) in just under 80% of observations on tomatoes and peppers, while MB/Pic was equal to the untreated check in 100% of observations. Telone products were inferior to MB/Pic in just under 40% of observations for control of stubby root nematodes. When all nematode species on all crops were considered, Telone products were equal to or superior to MB/Pic in over 90% of observations.

Disease Control: Very little information on soil-borne diseases was available from pepper or strawberry trials, so summary information presented here is limited to tomatoes. Control of Fusarium wilt (*Fusarium oxysporum* f. sp. *lycopersici*) with Telone products was equal to that with MB/Pic and both products were superior to the untreated check in 70% of observations. Telone products and MB/Pic were superior to the untreated check for control of Fusarium crown and root rot (*Fusarium oxysporum* f. sp. *radicis-lycopersici*) in 70 and 55% of observations, respectively. Both products were also inferior to the untreated check in 15% of observations. Compared to MB/Pic, Telone products provided statistically superior control of this disease in about 7.6% of observations and was equivalent to MB/Pic in the remaining observations. For control of southern blight (*Sclerotium rolfsii*), both Telone products and MB/Pic were equal to or superior to the untreated check in all observations. Telone products were statistically superior to MB/Pic for control of southern blight in a little over 10% of observations and were equal to MB/Pic in the remaining observations.

Weed Control: In these trials, Telone products were usually combined with the herbicides Tillam (pebulate) on tomatoes or Devrinol (napropamide) on peppers or strawberries. Thus, comparisons are between MB/Pic and Telone products + a herbicide. The key weed pests of Florida vegetables are nutsedges (*Cyperus esculentus* and *C. rotundus*). Both Telone products + a herbicide and MB/Pic resulted in nutsedge control that was equal to or superior to the untreated check in 100% of observations. Telone products + a herbicide resulted in nutsedge control that was equal to MB/Pic in about 90% of observations across all crops. Grasses and broadleaf weeds were not usually evaluated in these trials. When they were, Telone products + a herbicide provided control that was equivalent to MB/Pic in 100% of observations.

Crop Vigor: Both MB/Pic and Telone products resulted in tomato vigor that was statistically equal to or superior to the untreated check in 100% of observations and superior to the untreated check in about 60% of observations. Telone products resulted in tomato vigor ratings that were statistically equal to MB/Pic in over 95% of the observations. In peppers, Telone products and MB/Pic were statistically superior to the untreated check in over 70% and 55% of observations, respectively. Telone products were equivalent to MB/Pic in 100% of observations. Vigor of strawberries was statistically superior to the untreated in about 28% of the observations with MB/Pic and about 25% of observations with Telone products. Telone products resulted in statistically higher vigor of strawberries than did MB/Pic in about 8% of observations and in statistically equivalent vigor in the remaining observations.

Crop Yield: Yields of tomatoes treated with Telone C-17 were 95% of those with MB/Pic and yields with Telone C-35 were over 103% of those with MB/Pic. In peppers, yields with Telone products were 100% of those with MB/Pic. Strawberry yields with Telone products were about 98% of those with MB/Pic.