Approaches and Incentives to Implement Integrated Pest Management that Addresses Regional and Environmental Issues

Michael J. Brewer1,∗ and Peter B. Goodell2

1Texas AgriLife Research & Department of Entomology, Texas AgriLife Research and Extension Center Corpus Christi, Texas A&M University, Corpus Christi, Texas 78406; email: mjbrewer@ag.tamu.edu
2Statewide Integrated Pest Management Program, Cooperative Extension, Kearney Agricultural Center, University of California, Parlier, California 93648; email: ipmpbg@uckac.edu

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Abstract
Agricultural, environmental, and social and policy interests have influenced integrated pest management (IPM) from its inception. The first 50 years of IPM paid special attention to field-based management and market-driven decision making. Concurrently, IPM strategies became available that were best applied both within and beyond the bounds of individual fields and that also provided environmental benefits. This generated an incentives dilemma for farmers: selecting IPM activities for individual fields on the basis of market-based economics versus selecting IPM activities best applied regionally that have longer-term benefits, including environmental benefits, that accrue to the broader community as well as the farmer. Over the past several decades, public-supported incentives, such as financial incentives available to farmers from conservation programs for farms, have begun to be employed to encourage use of conservation techniques, including strategies with IPM relevance. Combining private investments with public support may effectively address the incentives dilemma when advanced IPM strategies are used regionally and provide public goods such as those benefiting resource conservation. This review focuses on adaptation of IPM to these broader issues, on transitions of IPM from primarily individual field-based decision making to coordinated community decision making, and on the form of partnerships needed to gain long-lasting regional and environmental benefits.