Evaluation of new mating disruption formulations

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Abstract: Mating disruption is a novel technique that has been used successfully by many apple growers for control of one or more of these pest species. However, this approach has not been widely adopted in some apple production regions, including Michigan. Among the factors that contribute to the relatively low adoption of mating disruption in some areas is the high cost of the technique and the presence of several pests that growers may have to contend with, including oriental fruit moth and leafrollers. Sprayable disruption formulations, hand-applied delivery systems that target multiple pest species, or widely spaced devices may have a better fit under these conditions. Sprayable pheromones could be readily incorporated into current programs that include a number of sprays for diseases, insects and mites. A sprayable product could be used on an as-needed basis rather than as an expensive preventive control. Formulations targeting different pest species could be tank-mixed. Trials conducted in Michigan in 2002 demonstrated that frequent application of very low rates of sprayable pheromones was a highly economical and effective tactic for control of OFM and showed promise for other pests as well. The performance of OFM sprayable pheromone was significantly improved by adding Nu-Film 17. Under low-moderate pest pressure, hand-applied delivery systems that target multiple pest species also were found to be efficacious and may fit well in apple IPM programs in Michigan and elsewhere where several lepidopteran pests are a problem in apple.