Systemic Insecticide Injections: New Effective Option for Several Conifer Seed Orchard Pests

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The efficacies of systemic insecticides emamectin benzoate, fipronil, and imidacloprid have been evaluated in conifer seed orchards during the past 3 to 9 years for preventing damage and mortality to cones by cone and seed insects. Injection treatments of emamectin benzoate and fipronil have been found to be consistently effective in reducing cone damage and mortality (80 – 95%) by coneworms in both slash pine and loblolly pine orchards for two years compared to untreated checks. Both chemicals are only moderately effective against seed bugs; reducing damage by 10 – 25% compared to checks. In contrast, imidacloprid is effective against seed bug, but less effective against coneworms. A recent trial also showed that emamectin benzoate has some activity against slash pine flower thrips. Plans to test injections of imidacloprid and dinotefuran alone or combined with emamectin benzoate and fipronil in 2007 for protection of seed crops against seed bugs will be described.