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Transposable Element-Mediated Transgenic Insects in the Screwworm Program

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Title: Transposable Element-Mediated Transgenic Insects in the Screwworm Program

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Interpretive Summary: The following interpretive summary refers to an oral presentation given at the 2002 Annual Meeting of the Livestock Insect Worker's Conference. Transposable element (TE)-mediated transformation of non-drosophilid insects is becoming a viable and robust gene introduction method for many insects of economic and medical importance. Transformation may be used for gene identification and characterization, and for creating strains with genes encoding lethality or sterility. This technology now has been adapted for and applied to the primary screwworm, Cochliomyia hominivorax (Coquerel). Using a piggyBac TE system, a green fluorescent marker gene has been introduced to the germ line of a laboratory strain (P95) of screwworms, resulting in several transgenic lines of uniquely marked strains. The genetics and characterization of these new transgenic lines will be presented.

Technical Abstract: The following technical abstract refers to an oral presentation given at the 2002 Annual Meeting of the Livestock Insect Worker's Conference. Transposable element (TE)-mediated transformation of non-drosophilid insects is becoming a viable and robust gene introduction method for many insects of economic and medical importance. Transformation may be used for gene identification and characterization, and for creating strains with genes encoding lethality or sterility. This technology now has been adapted for and applied to the primary screwworm, Cochliomyia hominivorax (Coquerel). Using a piggyBac TE system, a green fluorescent marker gene has been introduced to the germ line of a laboratory strain (P95) of screwworms, resulting in several transgenic lines of uniquely marked strains. The genetics and characterization of these new transgenic lines will be presented.