



AWARENESS, FLIGHT GUIDANCE, AND RELIABILITY: IMPACT OF TECHNOLOGY UPON STERILE INSECT TECHNIQUE

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Technological progress impacts upon our lives creating new relationships and opportunities. Development of the microprocessor has been a cornerstone of change, and advancing processing capability make complicated calculations and the activities born of them accessible to a large portion of humanity.

The world is smaller because of communication permitted by microprocessors connected to the Internet. Global commerce is facilitated by the easy exchange of information, and goods flow in larger quantities from place to place because of greater interaction among people.

One result of this commercial growth is that actions of people in one part of the world more directly impact upon the environment and economies of people in other areas. As commerce develops, so does awareness of the importance of integrated pest management and environmental stewardship as they relate to preservation of health and the advancement of economic well being.

This awareness leads the world community to develop target-specific means of controlling both introduced pests and undesirable native insects. Sterile Insect Technique owes much of its progress to the development of the microprocessor which has enhanced the ability of scientists to communicate, study, and implement it. Greater commerce and communication has contributed to the growing worldwide awareness of SIT's importance and its promise as an alternative to chemical pesticides.

Microprocessor-based Global Positioning Systems play a significant role in the successful implementation of SIT. GPS guidance systems provide managers with the ability to program vast treatment areas into onboard devices that guide aircraft pilots with precise parallel offsets to evenly cover targeted areas. Differentially-corrected guidance is provided in "real time," and flight paths are recorded for quality control purposes. Overlaid on maps within a Geographic Information System, recorded flight paths provide meaningful and accurate representation of program activities. Because of the microprocessor, program managers have control over treatments that did not exist a few years ago.

By implementation and communication other airborne technologies for SIT programs have advanced as well. Dispensing chilled insects from calibrated systems has proven to be a big step forward. This type of aerial delivery system is much more practical and environmentally acceptable than manually releasing insects from boxes that fall to the ground. Refrigerated systems aboard aircraft allow controlled release of insects over wider areas at consistent, reliable rates without the negative consequence of cardboard litter.

Twin Turbine aircraft also contribute to the reliability and safety of the SIT program. Aircraft operation has its own synergistic relationships among engineers, manufacturers, and government which is enhanced by the development of the microprocessor. The relationships between individuals and technology in the aviation industry promise further progress in this field and continued improvement in performance of SIT projects.