



Entomological Society of America

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The Entomological Society of America (ESA) is the largest organization in the world serving the professional and scientific needs of entomologists and people in related disciplines. Founded in 1889, ESA has more than 5,700 members affiliated with educational institutions, health agencies, industry, and government. ESA promotes the science of entomology and accomplishes this by, a) disseminating original research and perspectives leading to new discoveries and applications; b) creating opportunities to stimulate new ideas and capitalize on members' diversity and varied perspectives; and c) expanding the basic level of understanding about insects and related organisms through outreach to stakeholders. The Plant-Insect Ecosystems Section of ESA appreciates the opportunity to use this workshop to comment on research areas that we feel should be given high priority. The members of this Section are willing to provide science-based information to stimulate an increase in funding to support research and education objectives in the priority areas.

Transgenic Plants - Issues and Opportunities: Every year, there are more transgenic plants in our environment. Not only are individual transgenics increasing in number, but so are the numbers of plant species and varieties containing multiple gene constructs ("multi-stacks"). Priority must be given to applied and basic research that drives a broad and predictive understanding of how the increased transgenic plant material will affect a) insect biology, insect resistance and insect resistance management; b) Integrated Pest Management philosophy, practices and programs; and c) target and non-target organisms resulting from increased quantity and variety of transgenic residues in the environment.

Climate Change – Issues and Opportunities: As poikilotherms, insects and their behavior and biological functions are influenced by temperature. With increased public awareness about climate change, we find ourselves at a veritable "teachable moment". We must adjust our research priorities to take advantage of this opportunity and objectively investigate the effects of short- and long-term climate change on variables such as biodiversity, insect distribution at varying scales, and the interaction between agroecosystems and insect pest/natural enemy populations.

Invasive Species – Issues and Opportunities: Historically, reacting to problems associated with invasive species has been the norm. Although reactive strategies will continue, new research should move to a proactive approach, in order to document the current and potential threats associated with invasive insect species and the threats from non-insect invasives on native insect populations. The long-term goal of this research must be to use the knowledge gained in a prospective manner to prevent the continued introduction and/or damage from deleterious invasive species.

Biofuels and Entomology– Issues and Opportunities: Biofuels are gaining in recognition and stature, but little attention has been paid to the implications for pest management of altering our agricultural landscape. New crops will pose new pressures from insects both in the biofuel crop habitats and in nearby crop habitats.

Pollination and Crop Productivity- Issues and Opportunities: Pollinators, both managed and wild, are in decline. Honey bees, the most important pollinator of over 90 commercially grown crops, are suffering from the combined effects of habitat degradation and loss, pesticide poisoning, and introduced pathogens and parasites. Research is needed to monitor the abundance of all managed and wild pollinators, maintain their health, and on habitat conservation to ensure adequate pollination of crops and flowers dependent on animal transfer of pollen for their survival.

Submitted for USDA-CSREES Plant and Pest Biology Stakeholders' Workshop, November 20, 2007, Arlington, VA.