

Peer Review Plan

Title of Review:	Development of a Sterile Insect Technique to Manage the Invasive Cactus Moth	☐ Influential Scientific Information
Agency:	USDA, Agricultural Research Service	☒ Highly Influential Scientific Assessment
Agency Contact:	Stephen D. Hight, Ph.D., Research Entomologist, (850) 656-9870 Ext. 18, 6383 Mahan Drive, Tallahassee, FL 32308	
Subject of Review:	The most successful classical biological control of weeds program has been the control of invasive prickly-pear cactus (<i>Opuntia spp.</i>) by the Argentine cactus moth <i>Cactoblastis cactorum</i>. However, the moth has now become an invasive pest in the southeastern US and its ability to dramatically control its host plant raises concerns for the safety and survival of the many ecologically, agriculturally, and culturally important <i>Opuntia spp.</i> in southwestern US and Mexico. The sterile insect technique (SIT) has been developed for this insect as an areawide control measure. A validation/implementation study of the SIT coupled with sanitation efforts (removal of eggsticks, infested pads/larvae, and pupae) has limited the western spread of the moth. Sterile insects released in the field were highly competitive against wild moths. Competitiveness was evaluated for males by their recapture rate in pheromone-based monitoring traps and the proportion of sterile eggsticks produced as a result of sterile males mating with wild females. Continued refinement of the SIT against <i>C. cactorum</i> represents an opportunity to manage this biological control agent become pest. This technology is also being transferred to Mexico to assist in the removal of <i>C. cactorum</i> recently established on a small island off the coast of the Yucatan Peninsula. If implemented rapidly on new introductions, SIT can serve as an effective risk management tool to eradicate an invasive pest.	
Purpose of Review:	We anticipate that the external peer reviewers will possess an in-depth knowledge of research conducted. Reviewers will be expected to focus on areas such as: 1. The evidence provided and whether the conclusions and inferences are correctly supported by the evidence. 2. Evaluate the methodology. Is the approach and process appropriate for the analysis? 3. Are there data or other evidence complete? Have any important data or considerations been omitted? 4. Are all important assumptions identified and uncertainties clearly stated? 5. Identify any relevant data or evidence not contained in the report. 6. Evaluate the quality and completeness of the individual components of the analysis. 7. Comment on whether/where the document is difficult to read or understand.	
Type of Review:	☐ Panel Review ☒ Individual Reviewers	
	☐ Alternative Process (Briefly Explain):	
Timing of Review (Est.):	Start: 10/2007	End: Completed: 11/2007

Primary Disciplines/Types of Expertise Needed for Review: Entomology, area-wide pest management,
sterile insect technique

Organization's Name: _____

How:

When: _____

Public Nominations Requested for Review Panel? ☐ Yes ☒ No

Other: _____

