

U.S. Department of Agriculture Accomplishments Report AD-421 U.S. Dept. of Agriculture, State Agricultural Experiment Stations and Other Institutions			Date (Month, Day, Year) 01/10/2013		
1. Accession	Agency Identification No.		5. Work Unit/Project No.		6. Status
0210464	2. CSREES 3. LAB		LAB93850		Final Report
7. Title					
Flies Impacting Livestock, Poultry and Food Safety					
12. Investigator Name(s) (Last Name and Initials)					
Foil, L. D.					
20. Termination Date 09/30/2012			40. Period Covered (mo/da/year): 10/01/2007 TO 09/30/2012		
Outputs:					
<p>These results were presented at the Southern Regional Project meeting in January 2012 in Orlando, Fla. Three publications were produced from results of this work.</p>					
Outcomes/Impacts:					
<p>Implementation of larval stable fly habitat control using permethrin or insect development inhibitors could lead to significant reductions in adult stable fly emergence and their attack on cattle. For adult stable flies, studies have shown that at least between 350 and 450 stable flies per hour (between 3,000 and 4,000 flies per day) can be killed using a treated target that is randomly placed in pastures on cattle farms during stable fly season. Studies comparing pasture size and the presence or absence of cattle showed that four targets can be used for pastures up the 3 acres in size containing cattle to achieve a 3-fold increase in the number of flies captured, and presumably be more efficient in protecting cattle from stable fly attack. In a preliminary study, defensive behavior of heifers in the form of stomping of the front legs was reduced by over 50% when 6 treated targets were placed around 5 acre pastures. In the second study using 6 treated targets per hectare, a 46% reduction of stable flies per animal was observed over a two week period. In the third study there was a 50% reduction in stable flies per animal over a 4 week period and this reduction was equivalent to that achieved with four weekly treatments with permethrin. Treated cloth targets will be a viable addition for stable fly control programs and should be sustainable and practical for use. This project development of treated targets for stable fly control is the first to use this technology in North America. Protecting growing cattle from moderate stable fly infestations has been shown to result in approximately 50 pounds of additional weight gain over a 100 day period, which could result in a sixty dollar difference per head in today's market.</p>					
Publications:					
<p>Palavesam, A, F. Guerrero, A. Perez de Leon, A. Heekin, J. Wang, S. Dowd, Y. Sun, and L. Foil. 2012. Pyrosequencing-based analysis of the microbiome associated with the horn fly, <i>Haematobia irritans</i>. PLoS ONE 7(9): e44390. doi: 10.1371/journal.pone.0044390.</p> <p>Mascari, T.M., R.W. Stout, and L.D. Foil. 2012. Laboratory evaluation of rubidium as a long-lasting marker for bloodfeeding sand flies (Diptera: Psychodidae). J. Med. Entomol. 49 (1): 227-230.</p> <p>Schnellbacher, R.W., K. Holder, T. Morgan, L. Foil, H. Beaufre, J. Nevarez, and T. N. Tully, Jr. 2012. Avian Simuliotoxicosis: Outbreak in Louisiana. Avian Diseases. 56(3): 616-620.</p>					
Participants:					
L. Foil (P.I.), LSU AgCenter.					
Target Audiences:					



Livestock entomologist and the cattle industry.

Project Modifications:

Nothing significant to report during this reporting period.

Approved (Signature)	Title	Date
		