

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Faculty Publications: Department of
Entomology

Entomology, Department of

November 2002

New world screwworm synthetic sex stimulant

David A. Carlson
USDA-ARS

Dennis Berkebile
USDA-ARS, DENNIS.BERKEBILE@ars.usda.gov

Steven R. Skoda
USDA-ARS

Kenji Mori
Science University of Japan

Follow this and additional works at: <https://digitalcommons.unl.edu/entomologyfacpub>



Part of the [Entomology Commons](#)

Carlson, David A.; Berkebile, Dennis; Skoda, Steven R.; and Mori, Kenji, "New world screwworm synthetic sex stimulant" (2002). *Faculty Publications: Department of Entomology*. 23.
<https://digitalcommons.unl.edu/entomologyfacpub/23>

This Article is brought to you for free and open access by the Entomology, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Faculty Publications: Department of Entomology by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Program Listing
The 2002 ESA Annual Meeting and Exhibition
Fort Lauderdale, FL

**Wednesday, 20 November 2002 - 1:00 PM
1036**

**This presentation is part of : Insect Pheromones and Hormones: Discovery,
Biochemistry and Catabolism**

New world screwworm synthetic sex stimulant

David A. Carlson¹, Dennis R. Berkebile², Steven R. Skoda², and Kenji Mori³. (1) USDA ARS, CMAVE, Gainesville, FL, (2) USDA-ARS-LIRL, 3305a Plant Industry Bldg., E. Campus, Lincoln, NE, (3) Science University of Japan, Department of Chemistry, Kagurazaka 1-3, Shinjuku-ku, Tokyo, Japan

The presence of a sex pheromone in (New World Screwworm) females was demonstrated some time ago, but no natural compounds were isolated for proof of activity, and no synthetic compounds were ever tested. We report biological activity as powerful aphrodisiacs for synthetics in declining order of compounds 1, 4, 3, 2 and 5. Two types of bioassays were conducted to compare the stimulatory activity of these compounds against mature virgin males. Four compounds were the acetates of secondary alcohols with 29 carbon backbones, each with a variably-positioned methyl branch near the opposite end of the chain and one was a similar ketone. These acetoxy compounds, two aldehydes and a ketone were the major components of laboratory (and wild) females. Dose response relationships suggested complete copulatory activity with 5 ug of the most active, compound 1.

Species 1: Diptera Chrysomya *Cochliomyia hominivorax* (New World Screwworm)

Keywords: sex pheromone, aphrodisiacs