

Insecticide Netting

To Prevent Insect Infestation at Food Facilities



75-93%

CUMMULATIVE MORTALITY AFTER ONLY A 5 MINUTE EXPOSURE IN 5 OF 8 SPECIES TESTED

88%

MOVEMENT REDUCTION AFTER EXPOSURE

99%

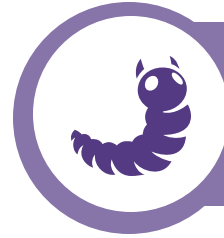
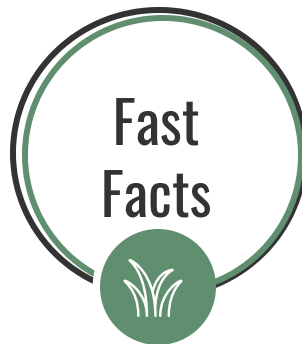
PROGENY REDUCTION IN SIMULATED WAREHOUSES

1+ year
RESIDUAL EFFICACY

10+

WAYS TO DEPLOY NETTING

\$0.58/sq. ft.
COST TO PURCHASE NETTING

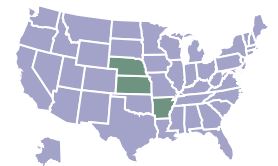


Project Overview

- Long-lasting insecticide netting-incorporated netting (LLIN) may be an ideal way to prevent insects from reaching commodities in facilities or to prevent movement of insects between different parts of facilities.
- We tested LLIN with 0.4% deltamethrin produced by Vestergaard Inc. and distributed by AgBio, Inc. for post-harvest purposes.
- Even brief contact with LLIN by insects has profound negative effects on movement and dispersal that are immediate and long-lived.
- Although long exposures are required for rapid kill, repeated short exposures have same effect.



More Info on
Project & Other
Post-Harvest
Resources



Authors: William R. Morrison III (USDA), Deanna Scheff (USDA), Alison R. Gerken (USDA), Rachel V. Wilkins (KSU), Kun Yan Zhu (KSU), Tanja McKay (ASU), Thomas Phillips (KSU), Georgina Bingham (UNL), and James F. Campbell (USDA)

This work was funded, in part, by NIFA CPPM Grant#2017-70006-27262

KANSAS STATE
UNIVERSITY

STATE
ARKANSAS STATE
UNIVERSITY

UNIVERSITY OF
Nebraska
Lincoln

USDA

Insecticide Netting

Efficacy Against Stored Product Insects



Effective on
8+ species
(and counting)

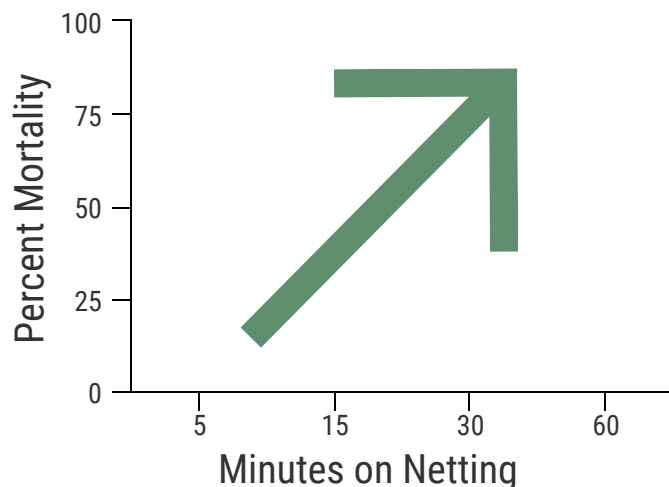
- Insects are directly exposed to the insecticide by walking
- Knockdown within hours
- Mortality can be observed after 1 day for many species



After 24 months inside:

*after a 10 minute exposure

98% knockdown
of lesser grain borer
64% knockdown
of red flour beetle
adults with 4 hours

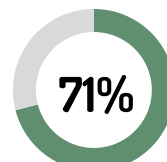
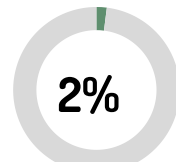
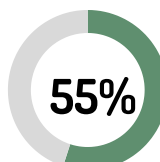
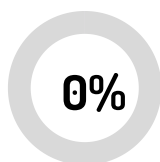
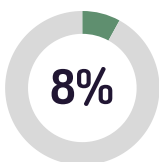


Increasing exposure time **Increases** mortality

Effect on beetles after a 15 minute exposure on netting

Red Flour Beetle Maize Weevil Lesser Grain Borer Warehouse Beetle Cigarette Beetle

Initially
knocked
down



Mortality
after
7 days

