

# Introducing NyGuard<sup>®</sup>

A New Insect Growth Regulator

# Juvenile Stages

# Adult

Inhibition of adult metamorphosis

Reproduction Inhibition

Decrease in progeny

Decrease in progeny

Extinction  
of  
Local Population

Monitoring & Maintenance



Application of NyGuard IGR



Initial Insecticide Application



Monitoring



Minimizing Immigration

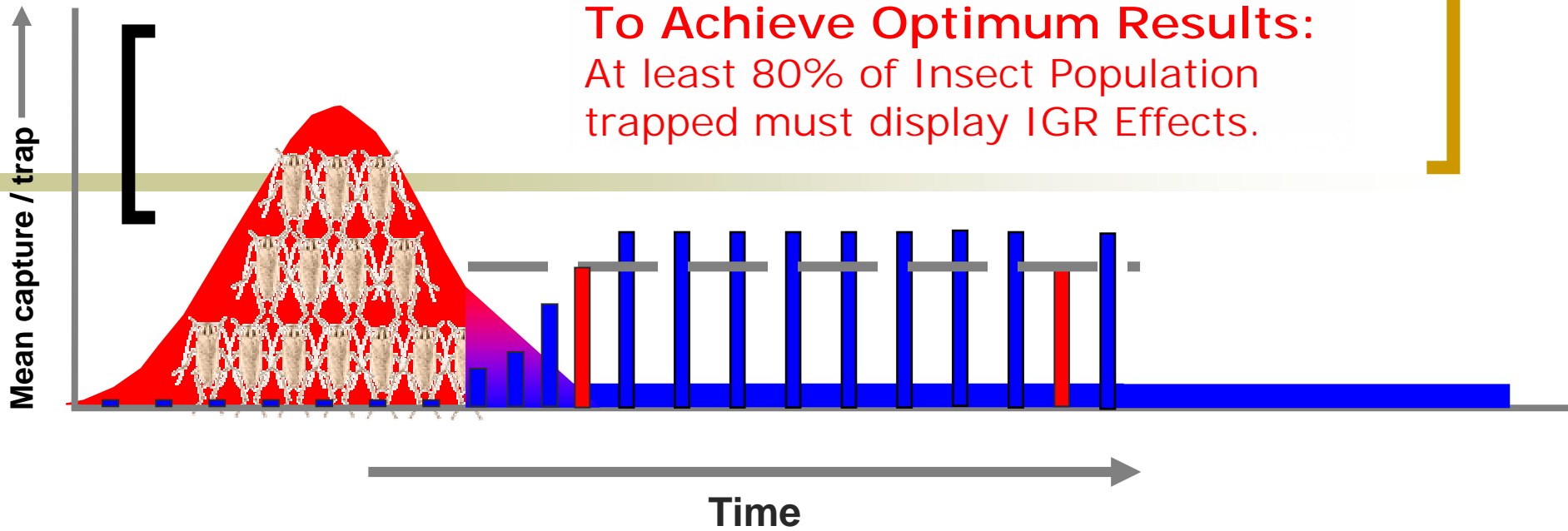


General Hygiene: Habitat Reduction



May be mixed  
or sequential  
applications

**To Achieve Optimum Results:**  
 At least 80% of Insect Population  
 trapped must display IGR Effects.



**Monitoring of insect population**




Insecticide application(s)  
 Alone or mixed with NyGuard

NyGuard Application  
 Alone or mixed with insecticide

Maintenance Applications of NyGuard  
 When observed IGR effects monitored drop below 80%

- 1 – Apply NyGuard with an insecticide killing agent to reduce population and establish an IGR base. (either tank mix or sequential applications)
- 2 - Monitor insect population with traps
- 3 – Reapply NyGuard when less than 80% of trapped insects show IGR effects

# NyGuard™ Performance Advantages

	Labeled Pests	Level of Control	Duration of Control	Food Area Use	Application Methods	Outdoor Control	Use Sites
NyGuard	<b>Broader Spectrum Including:</b> + Ants                    + Fleas + Litter Beetles    + Crickets + House Flies        + Gnats + Mosquitoes        + Moths + Stable Flies        + Midges	<b>Over 10 X More Active</b>	<b>Up to 7 months</b>	 <b>No Set-back</b>	May be applied via Carpet Shampoo		<b>+ Livestock facilities</b>
Gentrol			Up to 4 months	 <b>6' Set-back required</b>		None	

# NyGuard IGR Concentrate

## *Over 10 Times More Active*

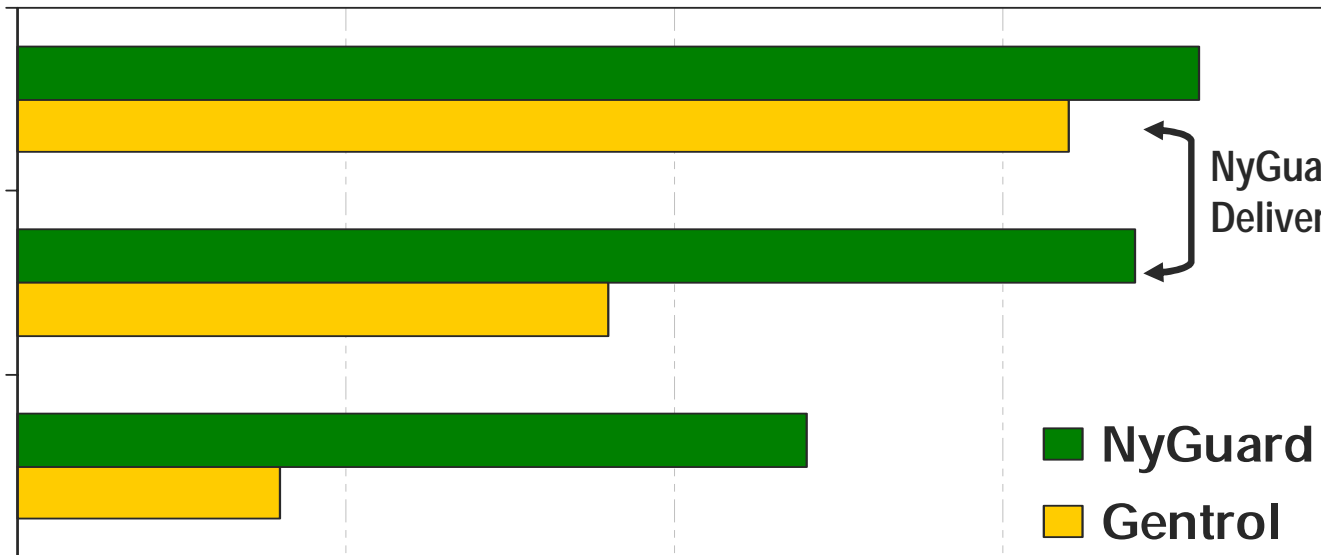
IGR Activity Level - *Measured by Average Deformity*

1                      1.5                      2                      2.5                      3

10 µg/nymph

1 µg/nymph

0.1 µg/nymph



NyGuard at 1/10<sup>th</sup> the dose  
Delivers more IGR results!

■ NyGuard  
■ Gentrol



Capable of reproduction

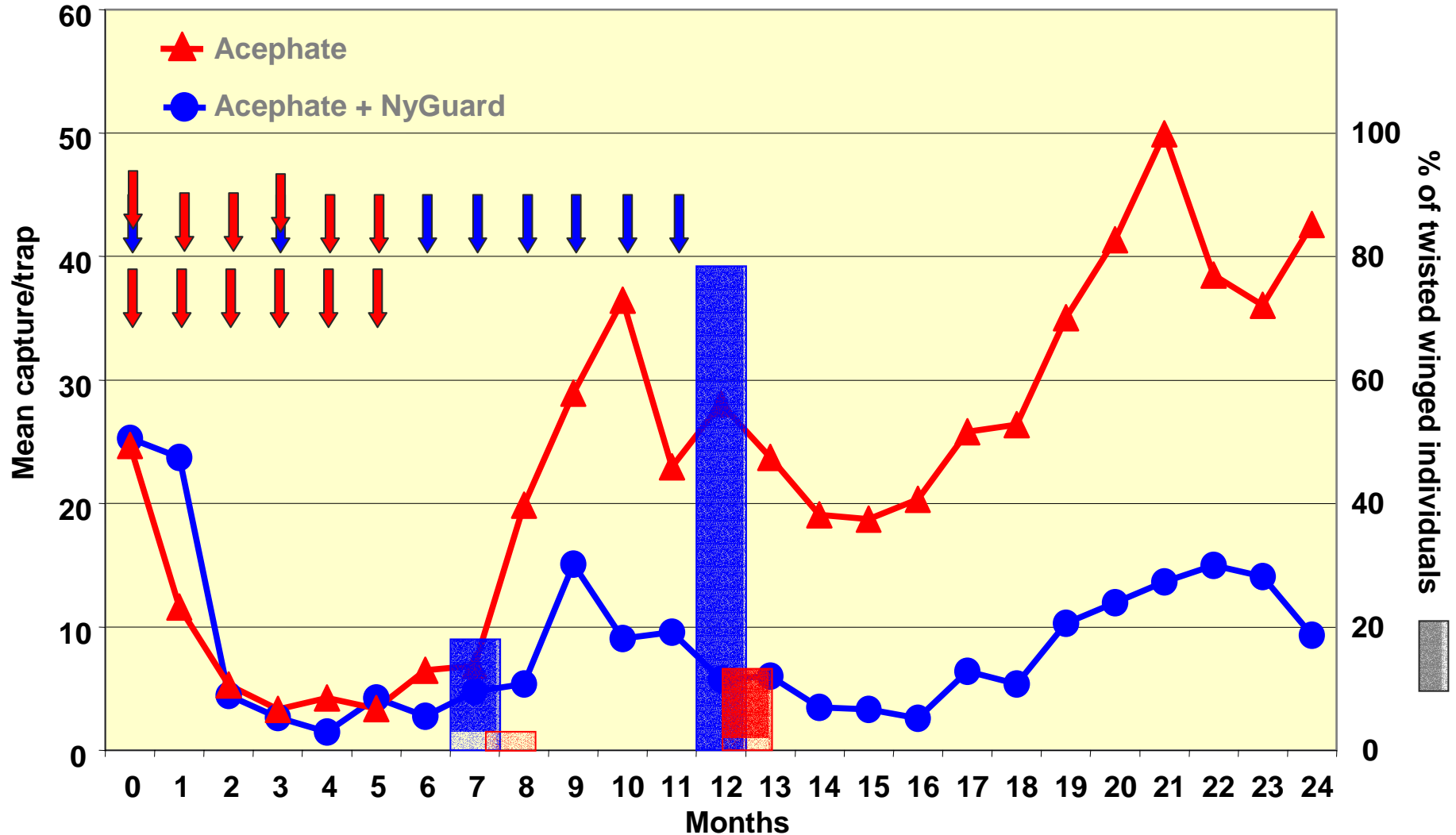


Reproduction Inhibited



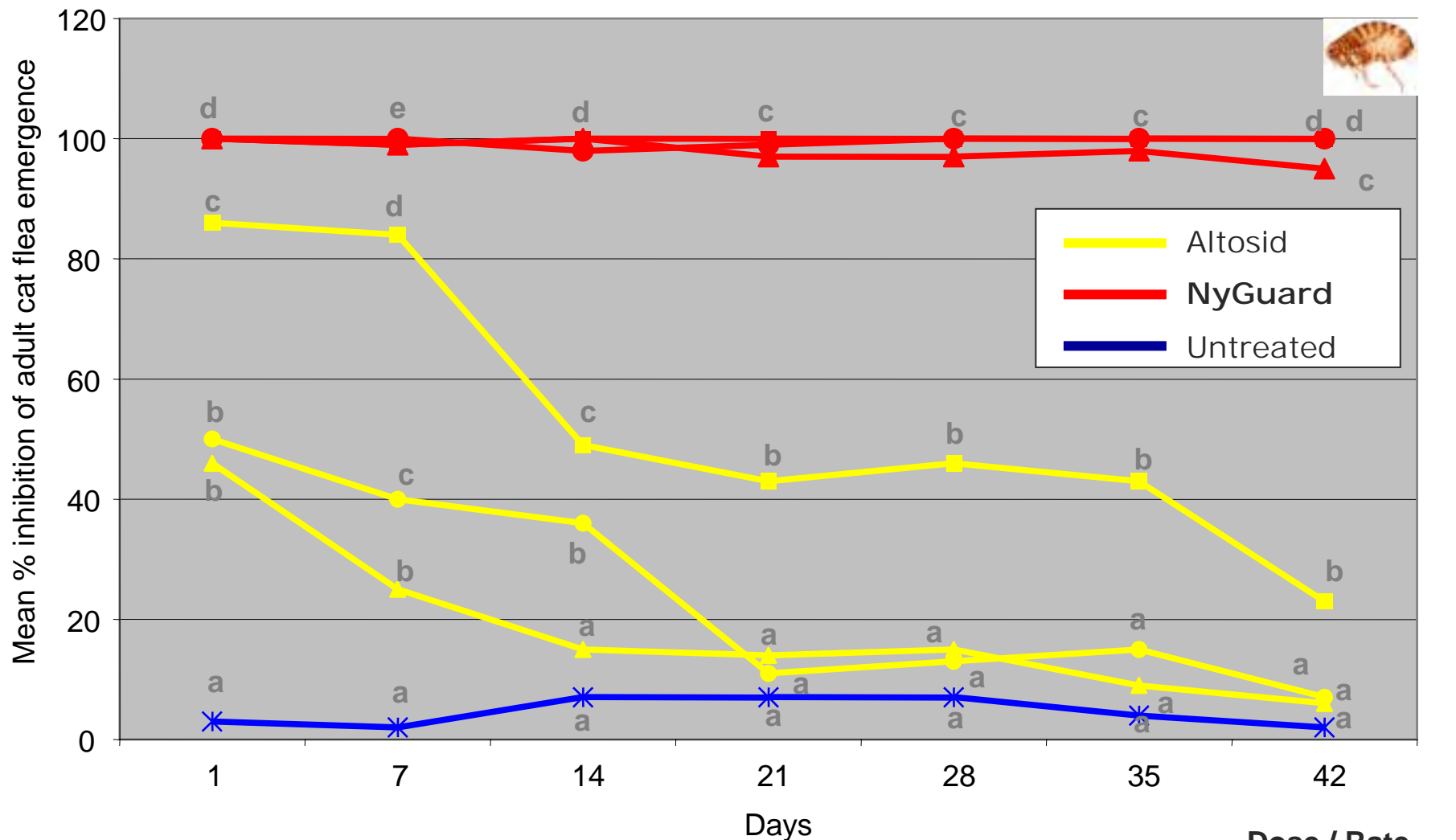
# Trap Catches of German Cockroaches in Apartments Treated with NyGuard or Acephate

Koehler and Patterson JEE 84(3): 917-921 (1991)



# NyGuard - Outdoor Residual Activity

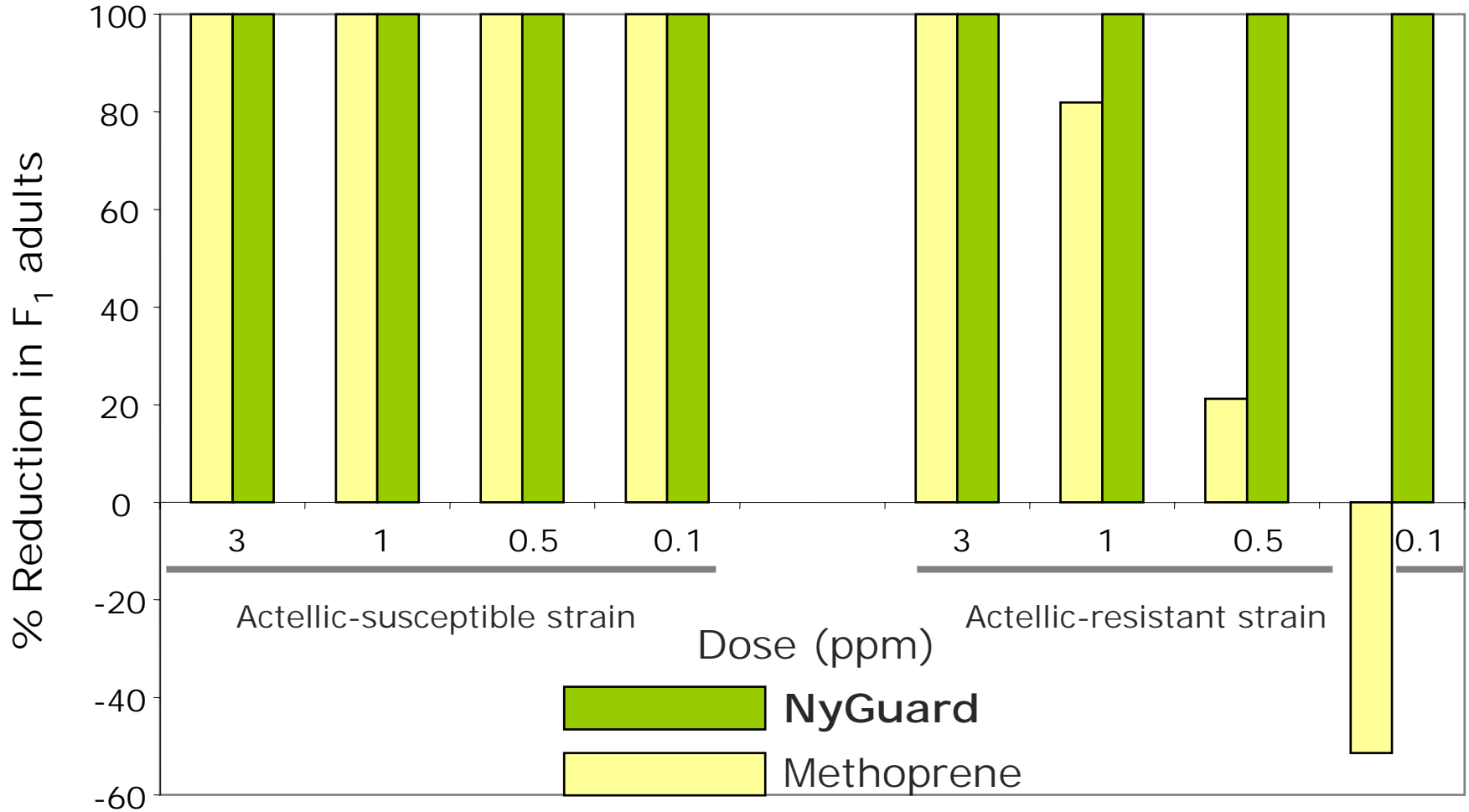
NyGuard & Altosid (methoprene) at Different Concentrations



Rajapakse et al. J. Med Ent. 39(6): 889-894 (2002)

- Dose / Rate**
- ▲ 8.07 mg AI/m<sup>2</sup>
  - 16.14 mg AI/m<sup>2</sup>
  - 32.28 mg AI/m<sup>2</sup>

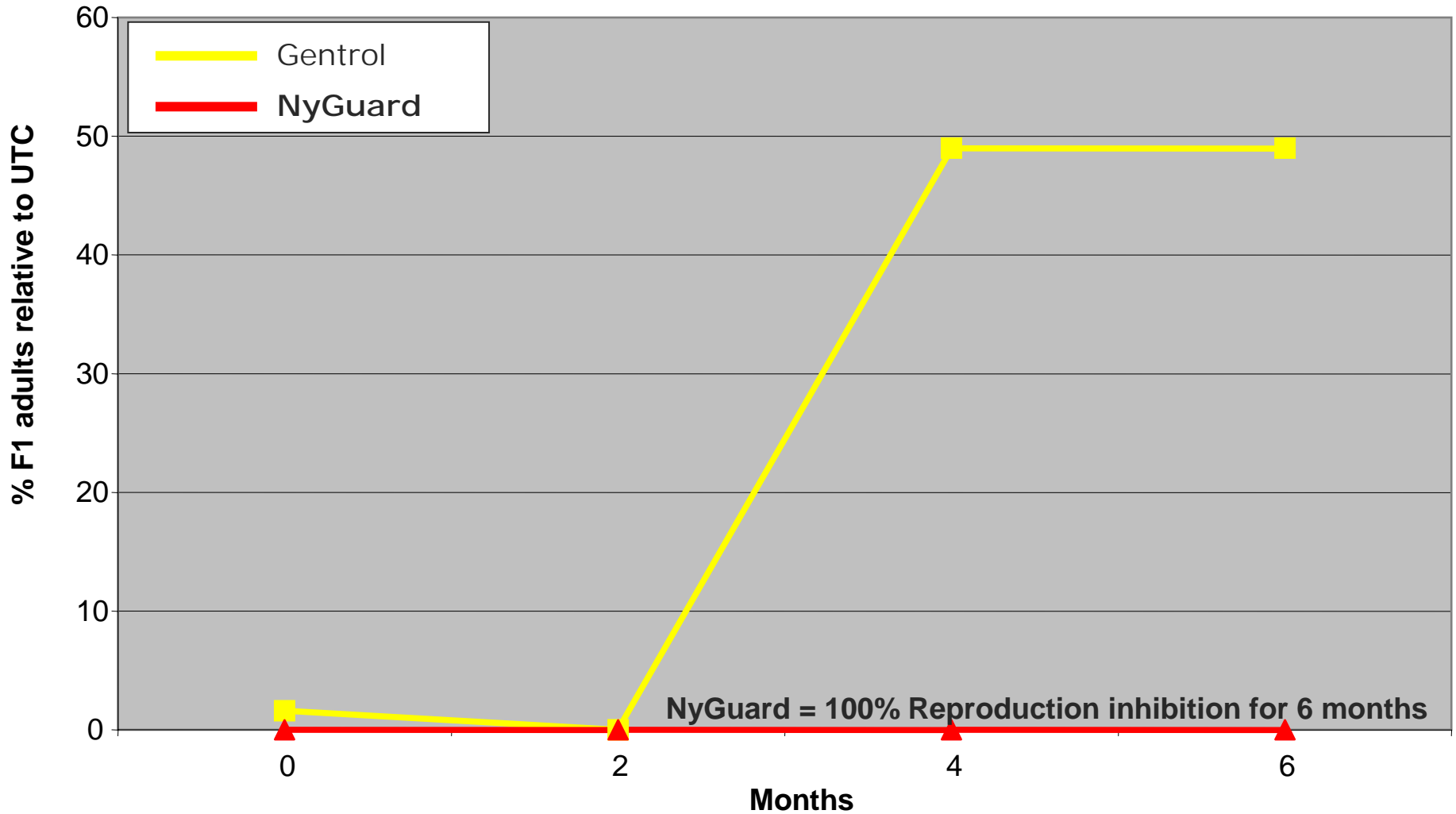
# Control of Red flour beetle, *Tribolium castaneum*



Kostyukovsky et al. 2000

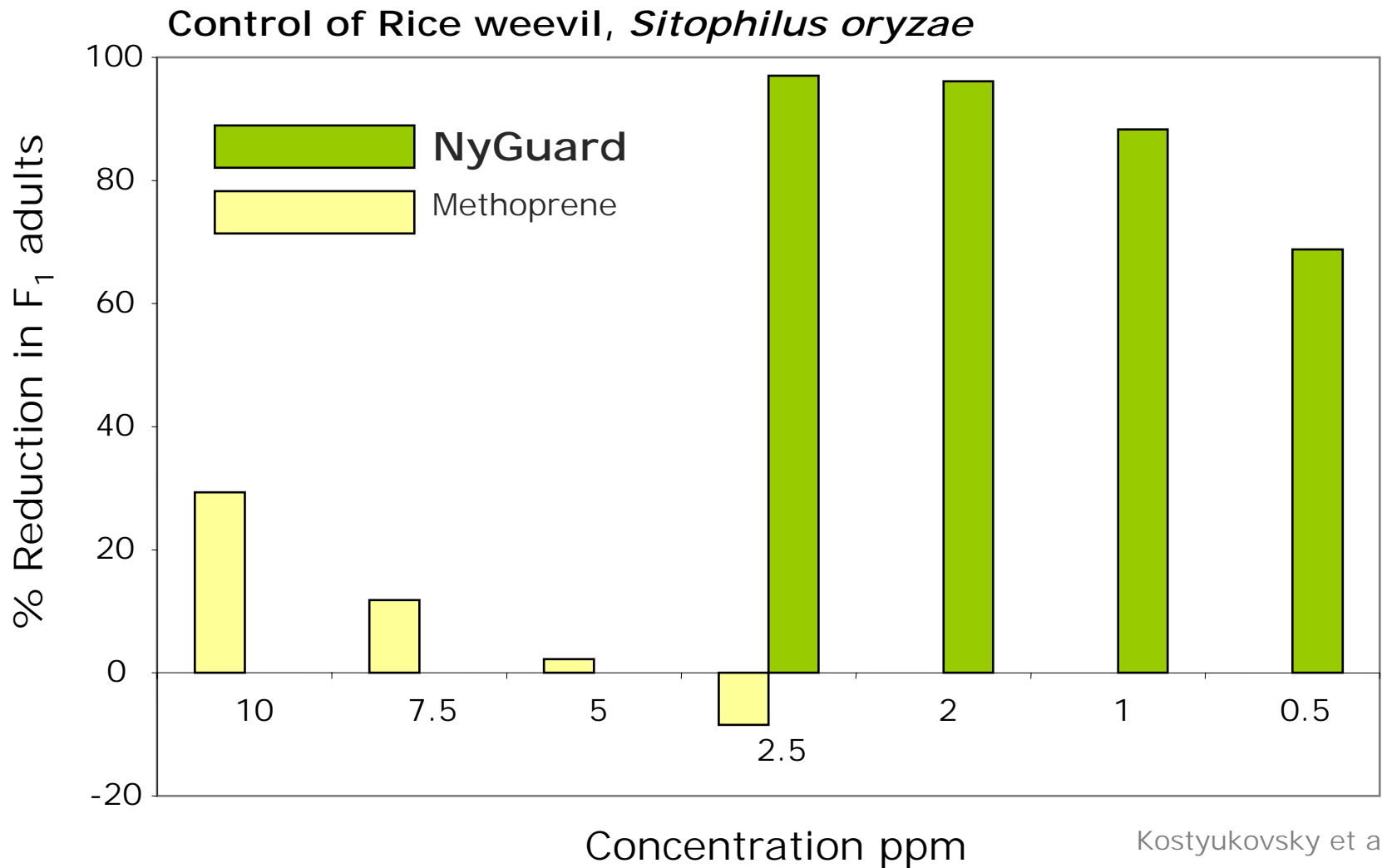
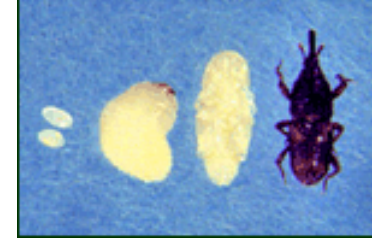
NyGuard is effective – even on Actellic-resistant populations

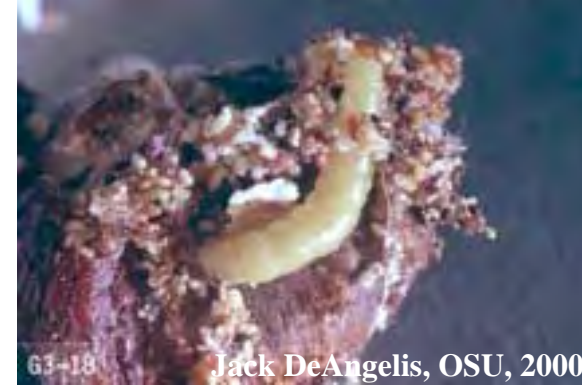
# Residual Activity of NyGuard against Confused flour beetle



**NyGuard out-performs Gentrol & lasts longer!**

# NyGuard is over 20 times more active on Rice weevil





## Biological activity of NyGuard against Indianmeal moth

∅ More active than methoprene and hydroxyurea (Silhacek et al. 1998)

∅ Ovicidal activity due to interference with organogenesis:

∅ failure of midgut closure

∅ malformed tracheal system

∅ semi-molted cuticle prevents escape from the egg

∅ Females can acquire effective ovicidal dose via tarsal pads

∅ Treat all vertical surfaces where females wait for males

∅ ULV / Fog application is ideal for warehouses

∅ Larvae: abnormal metamorphosis & molts

# Biological Activity of NyGuard Against Red Imported Fire Ant

Banks and Lofgren, J. Entomol. Sci. 26(3): 331-338 (1991)

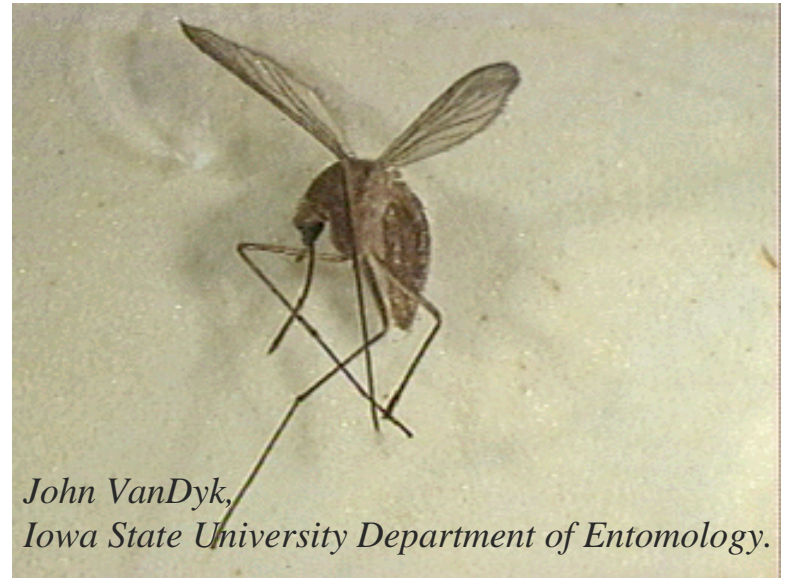
- Prevents worker replacement
- Results appear in two weeks by shift towards sexual forms
- Size of colonies was reduced by 80-85% after 1 month and 96% after 2 months
- Colony death in 5 to 6 months



USDA APHIS PPQ Imported Fire Ant Station Archives

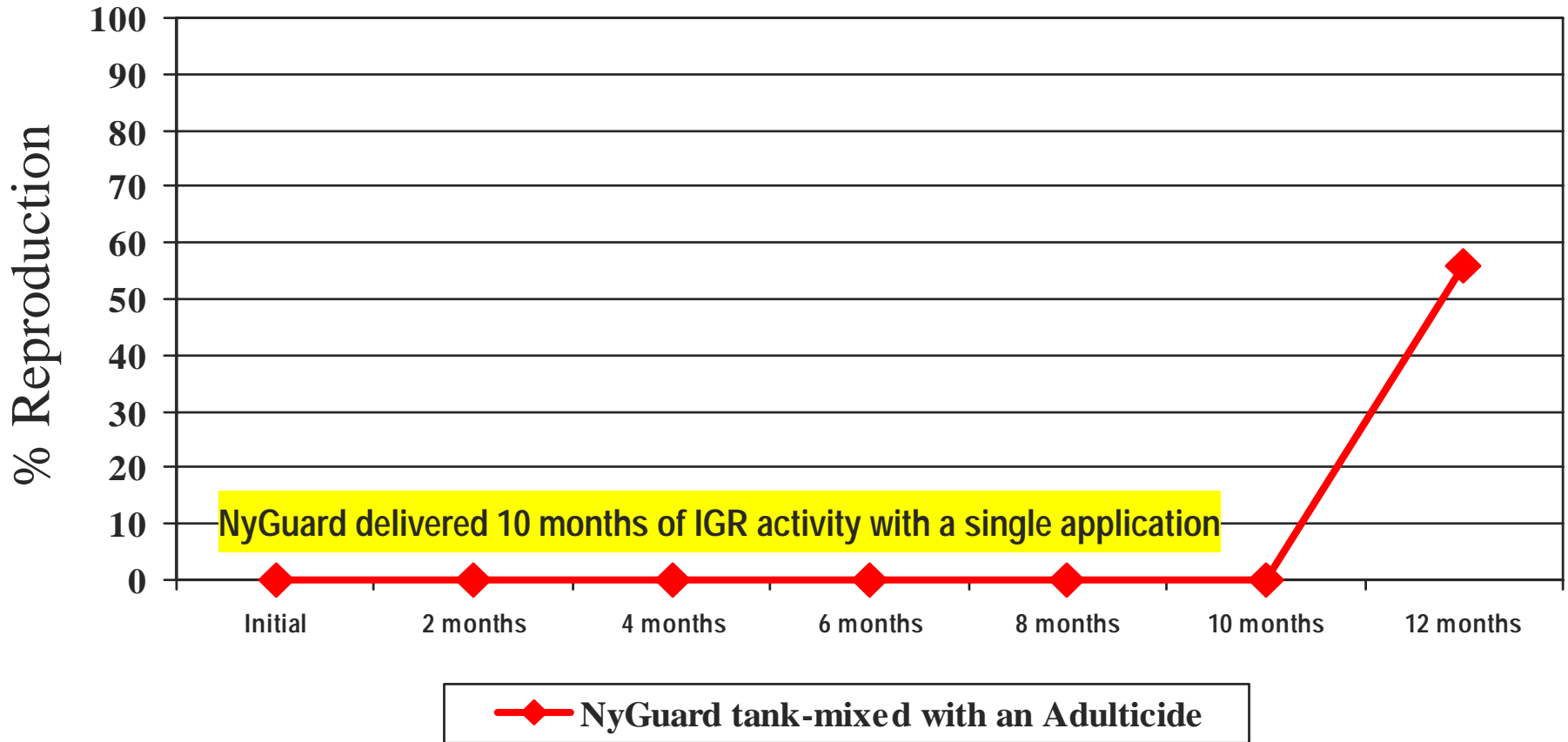
# Biological Activity of NyGuard Against Mosquitoes

- Highly effective
- Most susceptible stage: late 4th instar larvae
- Mortality occurs in pupal stage
- Persist in the water for 2 months
- No bioaccumulation in aquatic organisms



# Cockroach Control

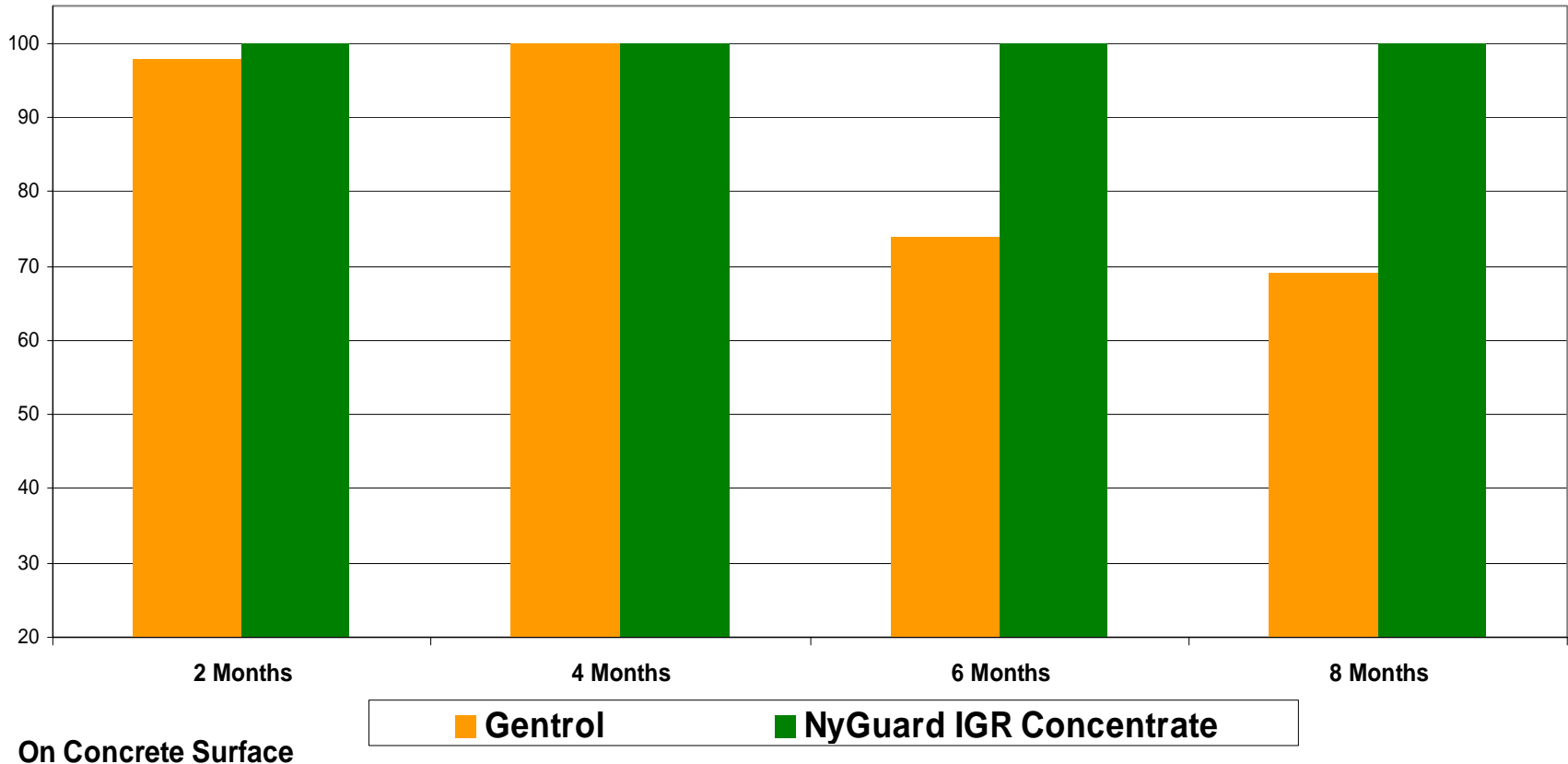
Measured by reproduction inhibition  
Lower score means better performance



11 mL NyGuard® IGR Concentrate per 1500 sq feet rate on aluminum surface  
3<sup>rd</sup> instar cockroach nymphs introduced following surface application

# Confused Flour Beetle

% Inhibition of Reproduction

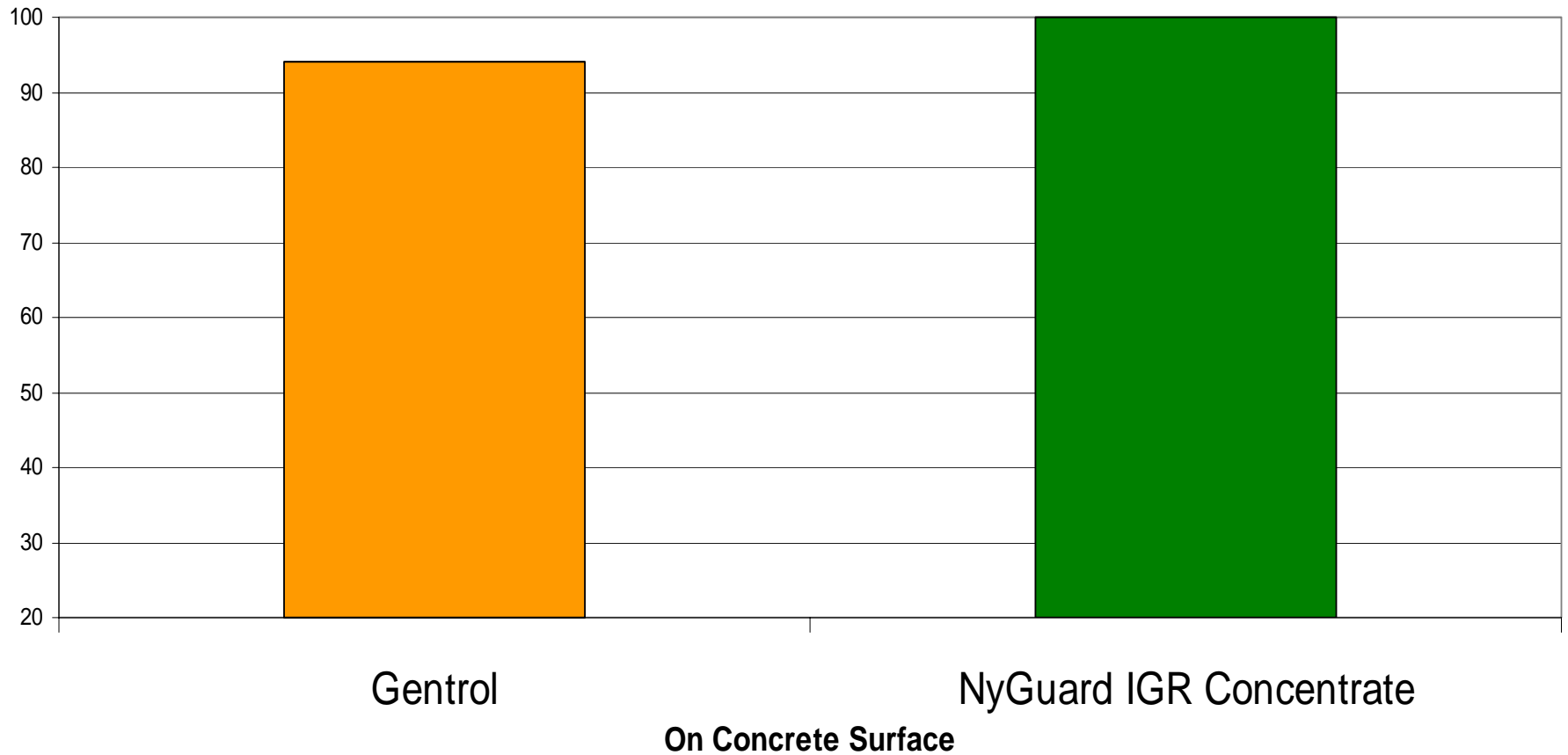


1 fl. oz. / 1500 sq ft. – Gentrol

11 mls / 1500 sq ft. – NyGuard

# Black Carpet Beetle

% Inhibition of Adult Emergence at 8 Months Following Application

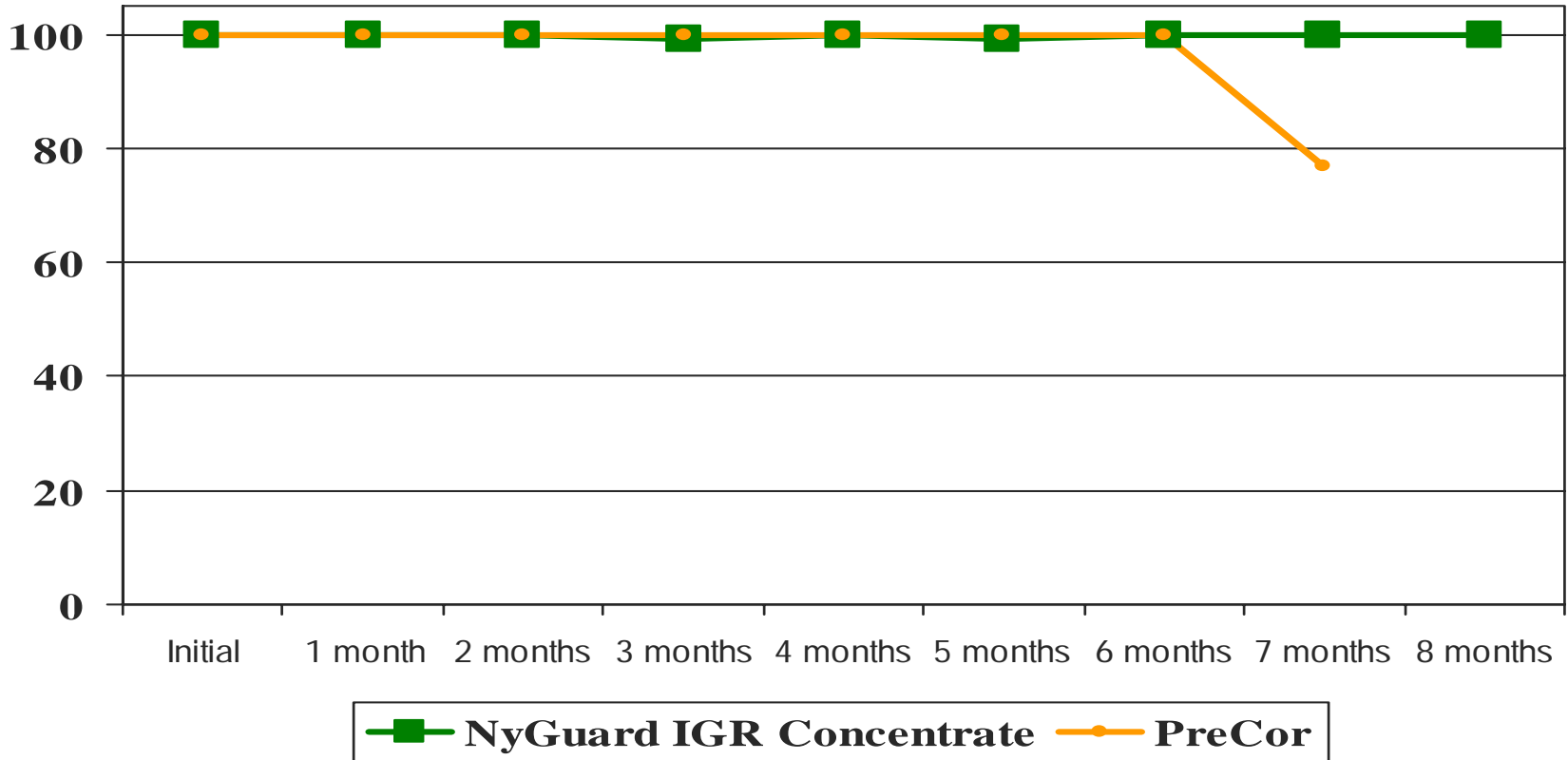


NyGuard at 11 mils vs Gentrol at 1 oz

IGRs applied to concrete surface, aged 8 months, then BCB larvae introduced. Reproduction observed and recorded

# Flea Control

*Measured by Percent Mortality*  
*Higher score means better performance*

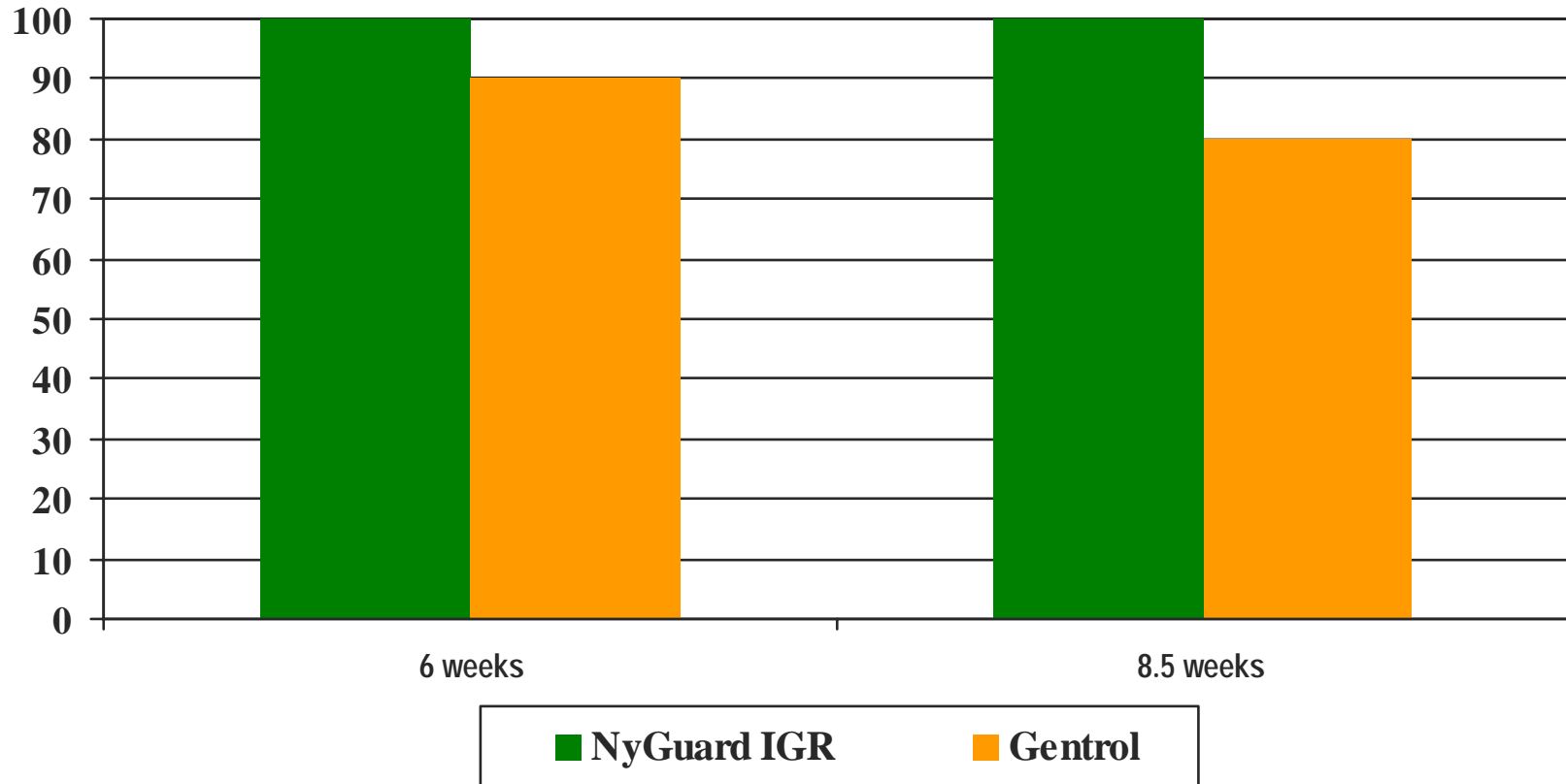


4 mL NyGuard IGR Concentrate per 1500 sq ft & 1 oz PreCor per 1500 sq ft, applied to carpet, flea larvae introduced & monitored

# Efficacy in Flour Dust

Confused Flour Beetle

*Percent inhibition of adult emergence*



Rates: 11mL NyGuard IGR per 1500 sq ft, vs 1 oz Gentrol per 1500 sq ft

Surface applied to flour dust, Confused flour beetle larvae introduced and monitored