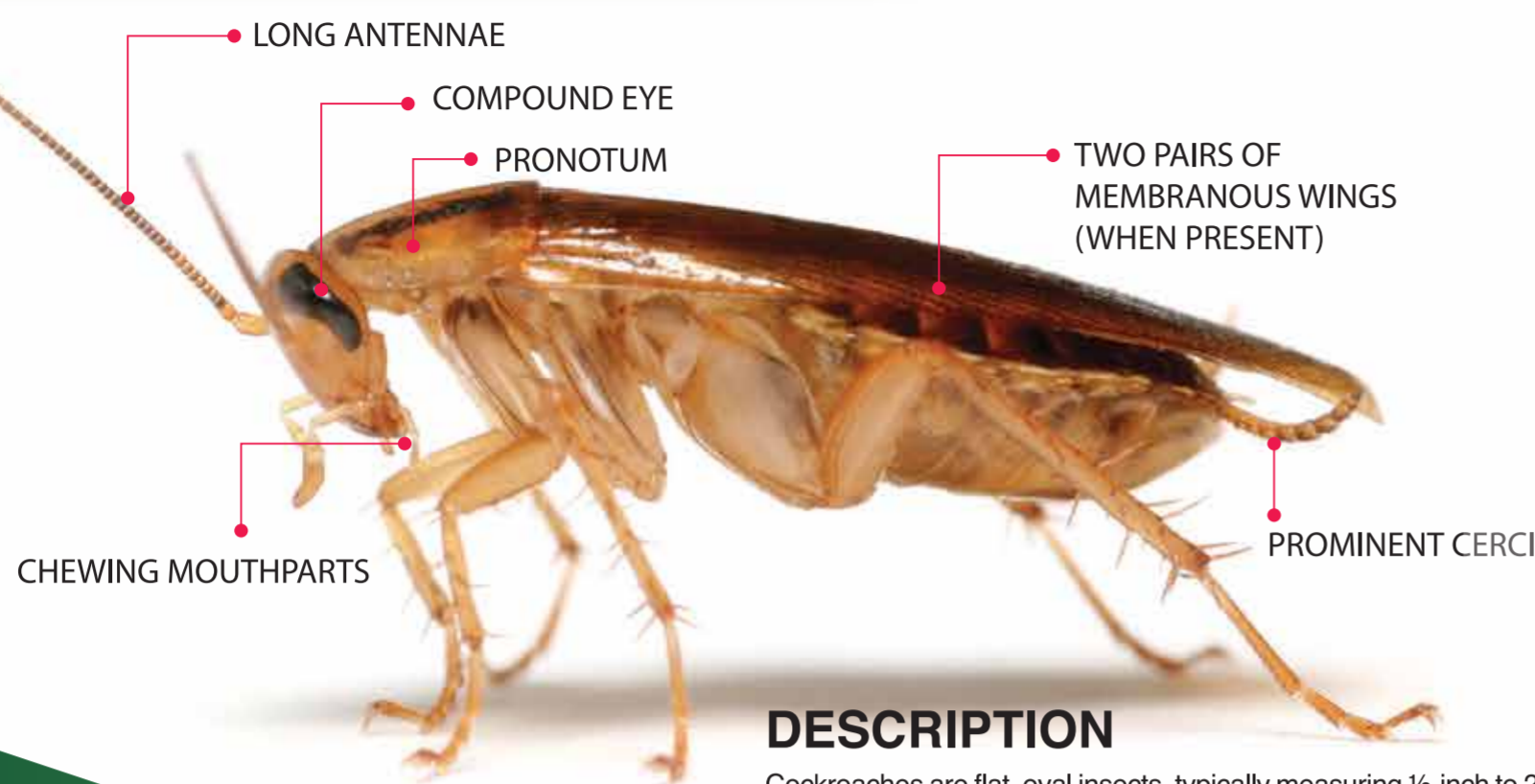


COCKROACH

PHYLUM: ARTHROPODA

ORDER: BLATTODEA



DESCRIPTION

Cockroaches are flat, oval insects, typically measuring ½-inch to 2 inches long. In some species, the head is concealed from above by the large pronotum, a plate-like structure that also covers part of the thorax. Cockroaches have long, hair-like antennae and chewing mouthparts. Their flat body structure makes them ideally suited to harbor within tight cracks and crevices. Most adult males have wings and can fly; females often have short wings or none at all and are unable to fly. Nymphs are similar to adults, except for their smaller size and absence of wings. Eggs are enclosed in a leathery looking egg capsule called an ootheca.

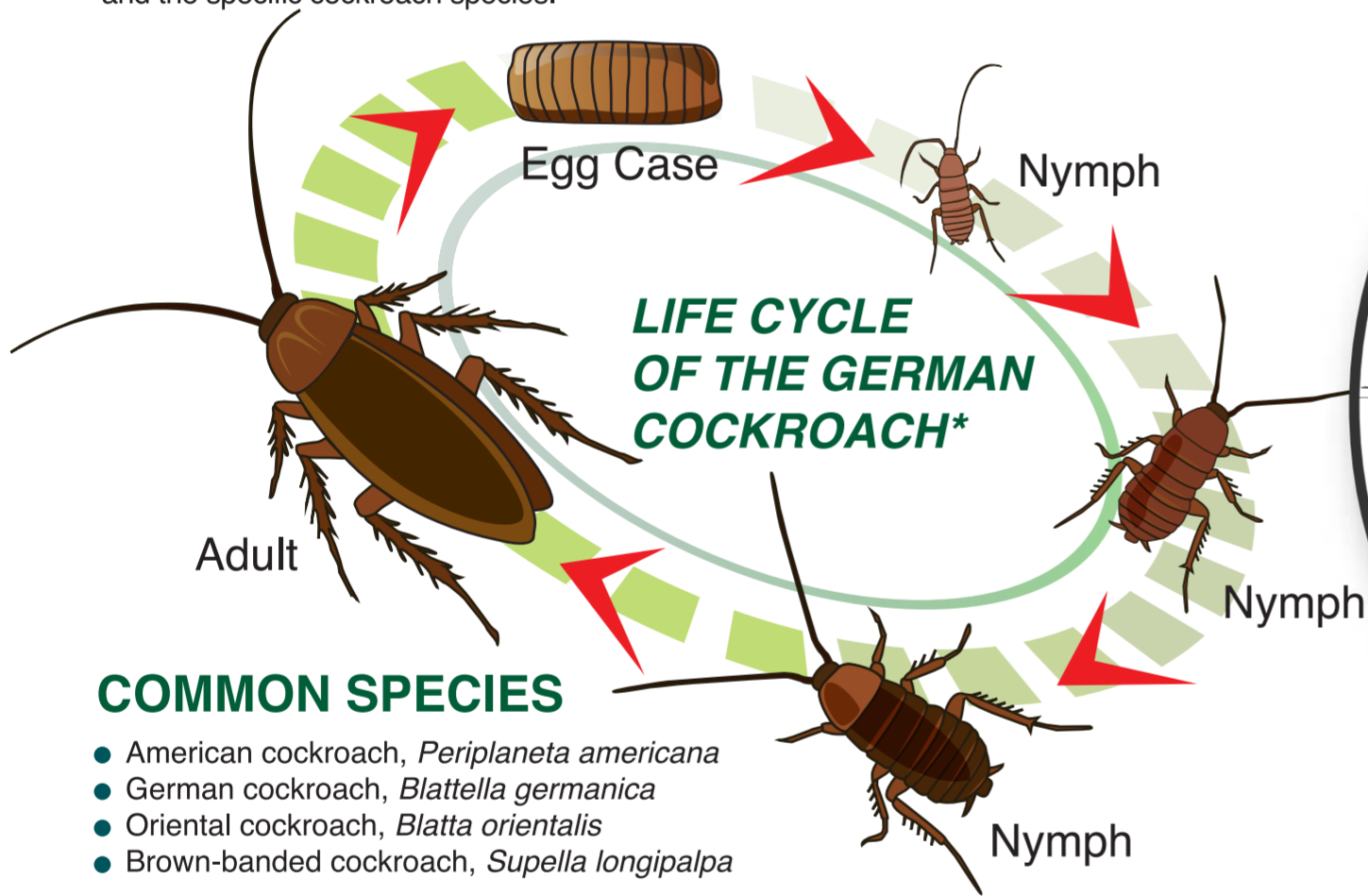
ALIASES:

LA CUCARACHA, PALMETTO BUG, WATER BUG, CROTON BUG

Cockroaches are among the most successful creatures on earth, negatively impacting the quality of life of mankind since the dawn of civilization. While approximately 4,500 species exist around the world, Pest Management Professional in Southeast Asia typically do battle with only a handful of problematic species including German, American, Oriental, and Brown-banded cockroaches. These pervasive insects are born survivors thanks to their omnivorous diet, reproductive potential, and ability to adapt to a wide range of environments from arctic cold to tropical heat.

LIFE CYCLE

Cockroaches undergo **gradual metamorphosis**, passing through three life stages – egg, nymph and adult. Nymphs are similar in appearance to adults, but smaller. Freshly molted cockroaches are white, assuming their typical coloration within a few hours as their cuticle hardens. The life cycle from egg to adult is dependent upon environmental conditions and the specific cockroach species.



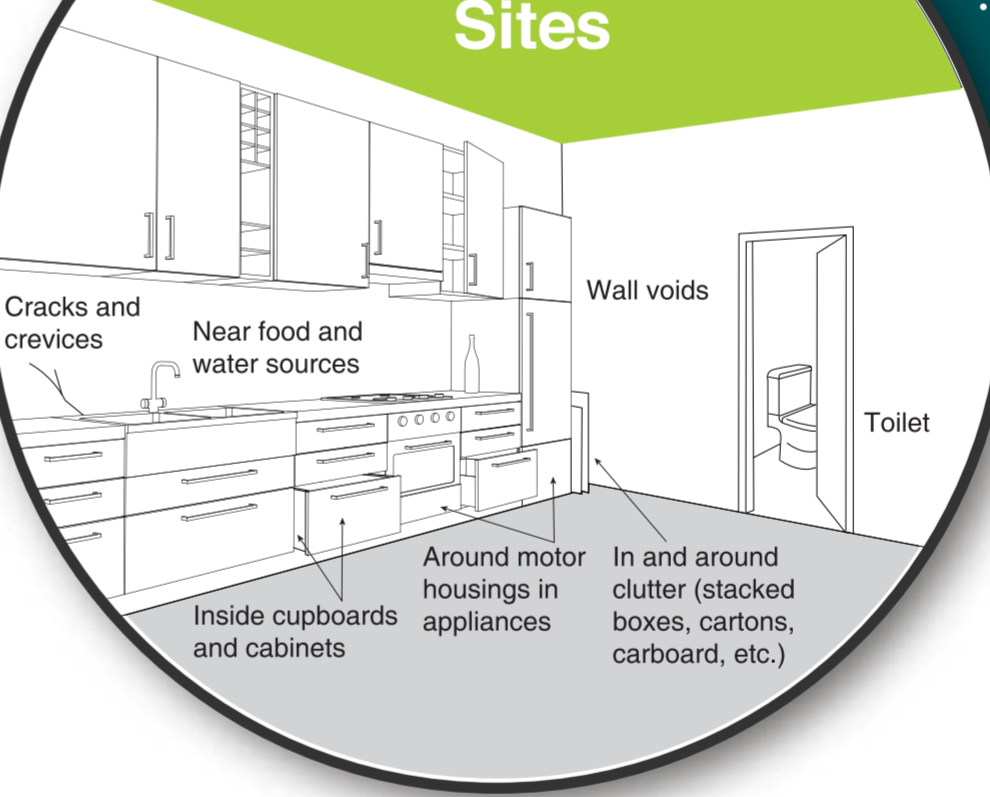
COMMON SPECIES

- American cockroach, *Periplaneta americana*
- German cockroach, *Blattella germanica*
- Oriental cockroach, *Blatta orientalis*
- Brown-banded cockroach, *Supella longipalpa*

WHEN AND WHERE DO YOU USE AN IGR?

Insect Growth Regulators (IGRs) are ideal for use against insects like cockroaches that are notorious for developing insecticide resistance. When baiting for cockroaches, incorporate an IGR like NyGuard® Insect Growth Regulator into your program and apply near or into suspected harborage areas, behind appliances, under sinks and cabinets, etc. The IGR will interrupt the life cycle of cockroaches, resulting in enhanced control. While customers may see adult cockroaches that look abnormal (twisted wings) following treatment, these insects will be incapable of reproducing.

Common Breeding Sites



Key Harborage Sites

- Cracks and crevices
- Wall voids
- Near food and water sources
- Kitchens and bathrooms
- Inside cupboards and cabinets
- Around motor housings in appliances
- In and around clutter (stacked boxes, cartons, cardboard, etc.)
- Toilet

Baiting Tips

- Place Bait Close to Harborage Sites
- Reduce Competing Food Sources
- Place Sufficient Bait
- Think 3-Dimensionally
- Practice Bait Rotation

THE INTEGRATED COCKROACH SOLUTION

Insect Growth Regulator (IGR)

Vendetta NITRO® Cockroach Gel Bait

- Highly palatable bait matrix
- Attracts and kills bait averse and non-averse cockroaches, including where they hide
- Dual modes of action – IGR & clothianidin insecticide
- Reduces cockroach populations by preventing reproduction
- Not runny in high heat
- Easy to handle and apply



CO2 Technology (Dry Treatment)

MIRAKN®

- Indoor application
- Excellent diffusion
- Excellent efficacy
- Dry treatment, no wet residue
- Non-flammable
- Odourless
- >99.9% w/w of MIRAKN using recycled materials



Multi-Use Spray Concentrate

Pesguard® FG161

- HACCP certified
- Oil-based
- Multi-mode action and control
- Rapid knockdown
- Good flushing effects
- Can be mixed with oil or water



Surface Spray

Pesguard® α 5FL

- HACCP certified
- Water-based concentrate
- Lasting residual pest control effects



Sumithion® 20CS

- HACCP certified
- Encapsulated formulation (long lasting residual)
- Effective resistance management
- Low mammalian toxicity



Please read and follow product label directions and precautions prior to use.



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