

ANSWERS to Household Pests breakout session group questionnaire

wood-destroying pests

- 1) Q: How might one distinguish between subterranean termites and drywood termites based solely on evident wood damage? A: Subterranean termites tend to only consume spring or 'early' wood that is higher in moisture content and less dense than fall or 'late' wood (this difference in density and water content is seen as 'rings' in cross sections of woody plants). This results in a striated or lined damage that is in stark contrast to the indiscriminate and amorphous damage seen most often with drywood termites.
- 2) Q: List two design and/or construction considerations used to exclude termites from homes or to reduce the possibility for termite infestation.
 - 1: Concrete barriers or flash walls that separate structural wood from contact with soil
 - 2: Sand barriers (particle size 10 to 16 mesh) are too dense a substrate for sub termites to use in mud tube construction. Therefore, termites must forage while exposed to cross the sand, facing predation and desiccation. For these reasons, discovery of wood is unlikely.
- 3) Q: List three morphological differences between winged ants and winged termites.
 - 1: Termites possess moniliform (string of beads) antennae while ants have geniculate (elbowed) antennae.
 - 2: Termites lack the abdominal constriction ('waist') seen in ants.
 - 3: Termite wings are all about the same size, while ants have larger forewings than hindwings.
 - 4: Wing venation is reduced in ants, while termites have many small wing veins.
- 4) Q: In which wood-boring beetle family (give family name or common name) are adult exit holes, found in damaged wood, of two distinctly different sizes? A: Anobiidae, or deathwatch beetles, due to sexual dimorphism (males smaller than females).

ants

- 5) Q: How many different 'bait' products are showcased before you? List the active ingredients (toxicants) for each product. A: Four.
Terro Liquid Ant Baits; Sodium Tetraborate Decahydrate (5%)
Gourmet Liquid Ant Bait; Boric acid 1%
Grants Kills Ants; Hydromethylnon

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Combat Ant Killing Gel; Fipronil

- 6) Q: When comparing ‘Terro Ant Killer’ and the ‘Gourmet’ products, which is more likely to affect an entire ant colony rather than foragers alone? Why? A: The ‘Gourmet’ product, since the borate-based toxicant used is delivered in a low-enough concentration (1%) that foragers can be expected to survive long enough to spread the toxin to others in the nest, while the ‘Terro’ product (with 5.4% borate-based toxicant) may act too fast.
- 7) Q: Which product (or products) can be considered pesticides but are not registered by the Environmental Protection Agency? A: EcoSmart Ant & Roach Killer and Green Light Home & Garden Insect Spray

bed bugs

- 8) Q: What is the approximate length and diameter (width) of an adult bed bug (use provided specimens, hand lens, and ruler)? What is the range in these measurements for the bed bug nymphs provided? A: Adults: ~5mm long, ~3.5mm wide; nymphs range in size from ~1mm to ~4mm long, ~1mm to ~3mm wide. The point of this exercise was to see how small nymphs can be...
- 9) Q: Of the bed bug monitors in front of you, which are classified as active and which as passive monitors? How might one argue for a classification change for the ClimbUp monitor? A: Active monitors included the ‘Slider’ and First Response Bed Bug Monitor. Passive monitors included the ‘BDS’, the ‘ClimbUp’, and the ‘BB Alert’. Active monitors contain some attractant (heat, CO², pheromones, kairomones), while passive monitors catch bugs in pitfalls, on sticky traps, or in harborage traps. One could argue that the ‘ClimbUp’ is an active monitor since it only works when human ‘bait’ is in the bed above it.
- 10) Q: Have a team member read the pamphlets on canine detection certification programs that are provided as well as the ‘DETECTION DOGS’ section of the Wang and Cooper detection article. What is the accuracy rate reported for canine detection in the paper? Is certification of canine detection teams required by law? Are homeowners aware of certification programs? (some answers may be unclear based on given material) A: The overall accuracy rate, for seven canine detection teams, was 43%, with a range from 11% to 83%. At the present time, no certification is required by law to control quality of service. Certification programs exist, and require ongoing training as well as proven aptitude from the canine and its handler,

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but homeowners are generally unaware. Cheaper services usually involve uncertified canines.
[Download article from Advanced IPM workshop website.]

- 11) Q: How does a mattress encasement work to help manage bed bug infestations? A: Encasements seal in any bugs that may be harboring on or in the mattress. They do not protect against bugs originating from elsewhere in the room.

cockroaches and pantry pests

- 12) Q: What species are represented by the largest preserved adult cockroaches on this table? Are these species outdoor invaders or indoor residents? A: Largest California species are the American and the Oriental cockroaches. These species are outdoor invaders, and management should concentrate on exclusion from entry into homes.
- 13) Q: For cockroaches, how many products in front of you are ‘baits’ and ‘traps’, respectively? How many contain attractants? Which product lists the attractant used? A: There were four baits and four traps: BioCare Cockroach Trap, Combat Source Kill MaxR3 (Gel), Combat Source Kill (bait station), Raid Double Control Roach Baits Plus Egg Stopper. Several claim to use an attractant, but none specify what ‘attractant’ is used. This is important, since attractants tend to be species-specific, and at least one product claims to attract many different insect species. Efficacy of such products is suspect, to say the least.
- 14) Q: What pantry pest (broad category, or bragging rights for correct species) damaged the container of dog food on the table? A: The dog food was damaged by one of the anobiid cigarette / drugstore beetle pantry pests. The specific culprit was *Stegobium paniceum*, drugstore beetle, as evident by the longitudinal grooves on the wing covers.
- 15) Q: How might one employ the ‘Pantry Trap’ or ‘Pantry Moth’ product? What other management action would be necessary to control the target pest? A: These traps both employ a pheromone that is specific to male Indian meal moths. They should be used AFTER the source of an infestation has been removed to detect moths that remain in the house. Prior to their use, infested food stores should be discarded, cupboards vacuumed and cleaned with soap / water, and all new or replaced stored products sealed tightly.