Termite control today and tomorrow

By Dr. Kenneth Green
College of Tropical Agriculture & Human Resources, University of Hawaii

There are 9,200 different kinds of termites in the world. The good news is that only about 10% of these termite species cause problems. The bad news, of course, is that they can cause us very big problems since they feed on the wood holding up our buildings.

Most of the termites that attack buildings contain microorganisms like bacteria in their gut that keep them digestive cellulose (the main component in wood). Scientists in Hawaii are studying these internal bacteria and are using genetic engineering to modify them to create bacteria to help combat termites, rather than helping them feed.

The main target of research at the University of Hawaii is the Formosan subterranean termite, Coptotermes formosanus. This termite is closely related to the most severe termite pests in Asia.

Termite prevention begins inside the building, with the use of either naturally durable construction materials or wood preservatives with wood preservative chemicals. Collaborative research by UH and Forest Research Institute Malaysia (FRIM) has identified a number of termite-resistant woods. It is important to remember, though, that only the hardwood (wood only 2 inches thick of most trees in durable hardwood from the outside of the termite's nest) are almost always susceptible to termite attack. So, be sure to specify hardwood lumber if you choose to use naturally durable wood in construction.

Research in Hawaii has identified locust wood treatment as a good option for timber to be used inside the building. Wood treated with termites needs to be protected from running water, though. Other insecticide treatments are available for wood to be used outside the structure or directly in ground contact. These treatments for exterior use are referred to by names such as "CA" ("CA"), "NCA," and "MAC.

Traditionally, soil insecticides are applied outside the building beneath and around buildings to create a "soil barrier" against tunneling termites. The nests' soil insecticides used in the USA are not deterred by the termites, and protect the building by killing termites rather than repelling them from the area.

A more permanent approach used in Hawaii is to install a physical barrier under the house that termites cannot penetrate, rather than a bio-pesticide. Ceramic physical barriers used in new building construction are crushed rock (ignared) screened to a size that termites cannot tunnel through; and a stainless steel mesh.

The latest termite control products are baits. The first termite baits are now available commercially, and they are for which the most research is available, containing a synthetic insecticide called benzoacetamide that interferes with host termite growth. The goal with a termite bait is to protect the building by killing all the termites in the colony that is invading the structure.

Baits can be placed inside the building, as well as outside, but they must be monitored closely to ensure that termites are feeding on them, and to ensure that no new termite colonies invade the building. Once the original colony is eliminated.

Continued monitoring of the building after baiting is important, since we search has shown that after several months of years new termite colonies from surrounding areas may find their way onto the building and attack the building. However, as long as the pest control company is doing a good job of regular inspection, the new colonies will not be found in the bait stations and can again be eliminated.

This is where termite control is today, with a number of direction, which is going.