# Methods to Control Existing Drywood Termite Infestations

<table>
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<tr>
<th>Methodology</th>
<th>Vikane® gas fumigant</th>
<th>Orange Oil (d-limonene, citrus oil)</th>
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<tr>
<td><strong>Whole-structure treatment</strong></td>
<td>The entire structure is tarped and thoroughly fumigated with Vikane, killing all detected and undetected termites, including those inaccessible for spot treatment.</td>
<td>Spot treatment: Only detected, accessible colonies can be treated by drilling small holes at about 5 inch intervals into which orange oil is injected.</td>
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<td><strong>Fumigation with Vikane</strong></td>
<td>Fumigation with Vikane is the most thorough, consistent and efficacious treatment of infested structures evaluated in more than 20 years of university research and nearly 50 years of commercial use. Researchers and pest control operators acknowledge that whole-structure fumigation, compared to spot treatments, penetrates better into concealed locations, and large volumes of wood are treated more efficiently.</td>
<td>Recent laboratory research at the University of California Berkeley demonstrated in a best case scenario with complete access to infested wood, orange oil (trade name XT-2000) injected to saturation at 2 inch intervals obtained an average of only 81% control of the drywood termites with up to 100’s of termites documented surviving treatment. This termite survival is important because previous research at the University of California Riverside (UCR) showed that drywood termite colonies can reproduce and increase with as few as 20 worker termites. Recent laboratory research at UCR has also demonstrated orange oil does not have residual activity; drywood termites with continuous exposure to wood topically treated with orange oil and aged 30 days did not have greater mortality than termites on untreated wood.</td>
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<td><strong>Third-Party Validation of Efficacy</strong></td>
<td>There are no limitations: Vikane penetrates all airspace in termite galleries within the tarped structure to kill termites.</td>
<td>Termite colonies must be accessible to the applicator.</td>
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<td><strong>Limitation on Treatment Application by Termite Location in Structure</strong></td>
<td>There are no limitations: Vikane penetrates all airspace in termite galleries to control detected and undetected termites.</td>
<td>Detecting live termite infestation is critical for treatment efficacy of spot treatment with orange oil: Undetected colonies will not be treated or controlled. Besides visual inspection, other detection methods include dogs, odor detectors, fiber optics, movement-sensitive devices and feeding-sensitive devices. These devices are infrequently used and, except for feeding-sensitive devices, adequate research has not been conducted to confirm their reliability to detect drywood termites. With the uncertainty of current detection methods, the secretive behavior of drywood termites and building construction (drywall or other wall coverings) concealing infestations, there is always doubt as to the location and extent of all drywood termite colonies in buildings that restrict accessibility and limit treatment.</td>
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<td><strong>Possibility of Damage by Treatment Application</strong></td>
<td>The possibility of damage is low when Vikane is used according to the label. Improper tarping may cause damage.</td>
<td>Many injection holes in wood and walls may need to be repaired. Orange oil is an oily liquid which is used as a solvent and a degreaser. Its effect on paint and surface finishes is unknown.</td>
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<td><strong>Vikane® penetrates</strong></td>
<td>Vikane® penetrates all airspace in termite galleries to control detected and undetected termites.</td>
<td>Orange oil is flammable with a flash point of 115°F.</td>
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<td><strong>Indoor Air Quality</strong></td>
<td>Applicator must follow specific aeration procedures followed by air testing using sensitive detection equipment to confirm airborne concentrations comply with federal label requirements. Aeration procedures and detection equipment have been extensively researched to validate their performance.</td>
<td>Orange oil has a pungent citrus odor. No air testing is conducted after application.</td>
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</table>

**References**


Vikane is a federally Registered Use Pesticide. Always read and follow label directions. These materials have been created specifically for Vikane gas fumigant and no other structural fumigant. The information contained in these materials is based upon the product label and use instructions for Vikane and are not intended for use with other structural fumigants which will have different label requirements. These materials may not be copied or reproduced without the permission of Dow AgroSciences.