"Gesundheitsschutz durch Schädlingsbekämpfung - weiterhin möglich?"
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THE FIRST FUMIGATION OF A YACHT IN EUROPE USING SULFURYL FLUORIDE

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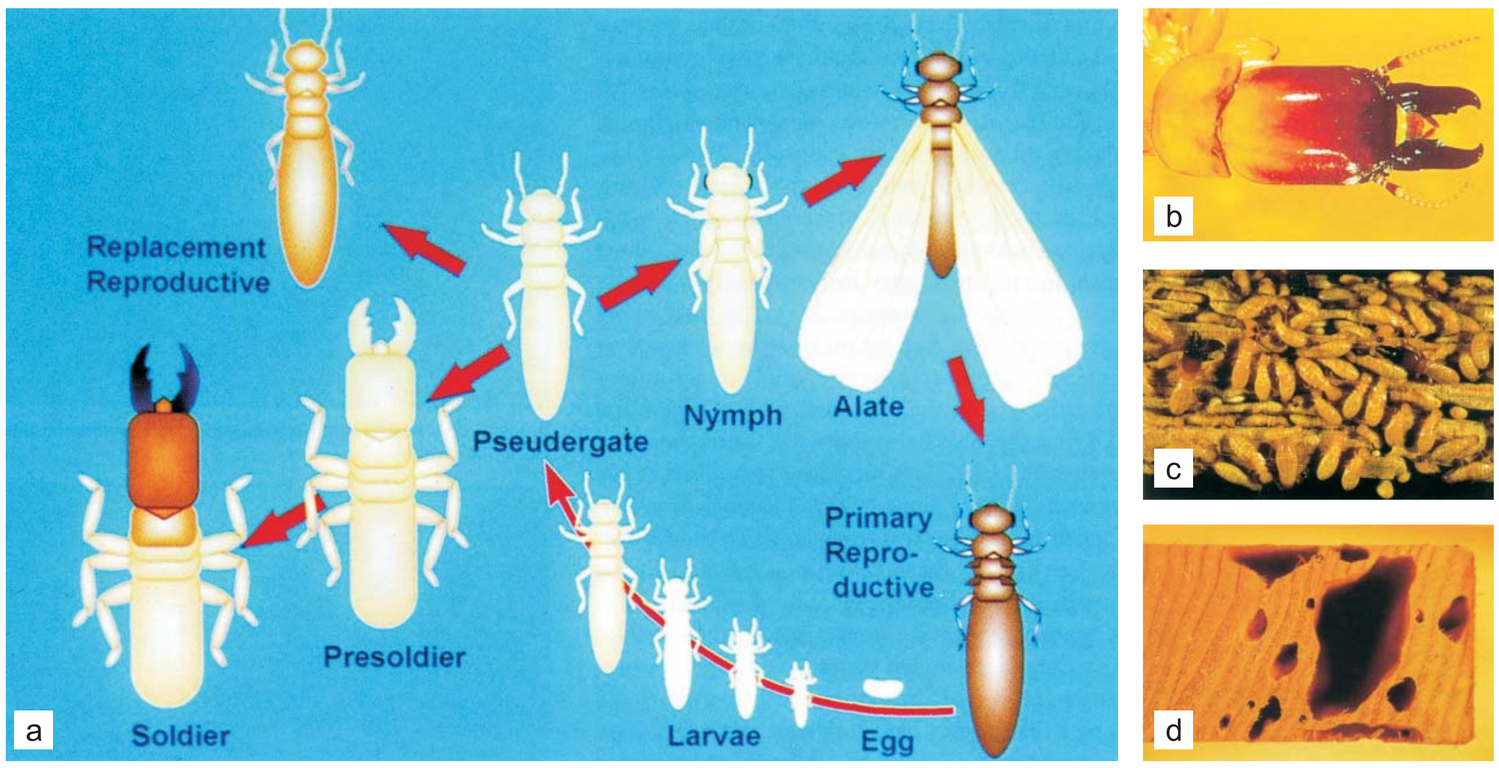
Introduction

Back from an oversea-trip to Florida the owner of a 100' Yacht discovered some blind passengers: The boat was obviously infested by drywood termites. The undesired guests had already started their destructive work. Several wooden parts of the floor-construction in the keel-area were damaged and had to be replaced. The owner contracted a complete fumigation to get rid of the insects to avoid further damage of his yacht. It was important not to alter or tarnish the sensitive materials and surfaces of the interiors, as the yacht was furnished with valuable materials (rare wood, polished metals etc.) and equipped with modern high-grade electronical devices (navigation-system, radar etc.). For this reason a fumigation with Methyl bromide (CH_3Br), Hydrogen cyanide (HCN) or Phosphine (PH_3) was impossible because of the chemical properties of these fumigants. Finally the yacht was fumigated with purified Vikane*.

* Trademark of Dow AgroSciences

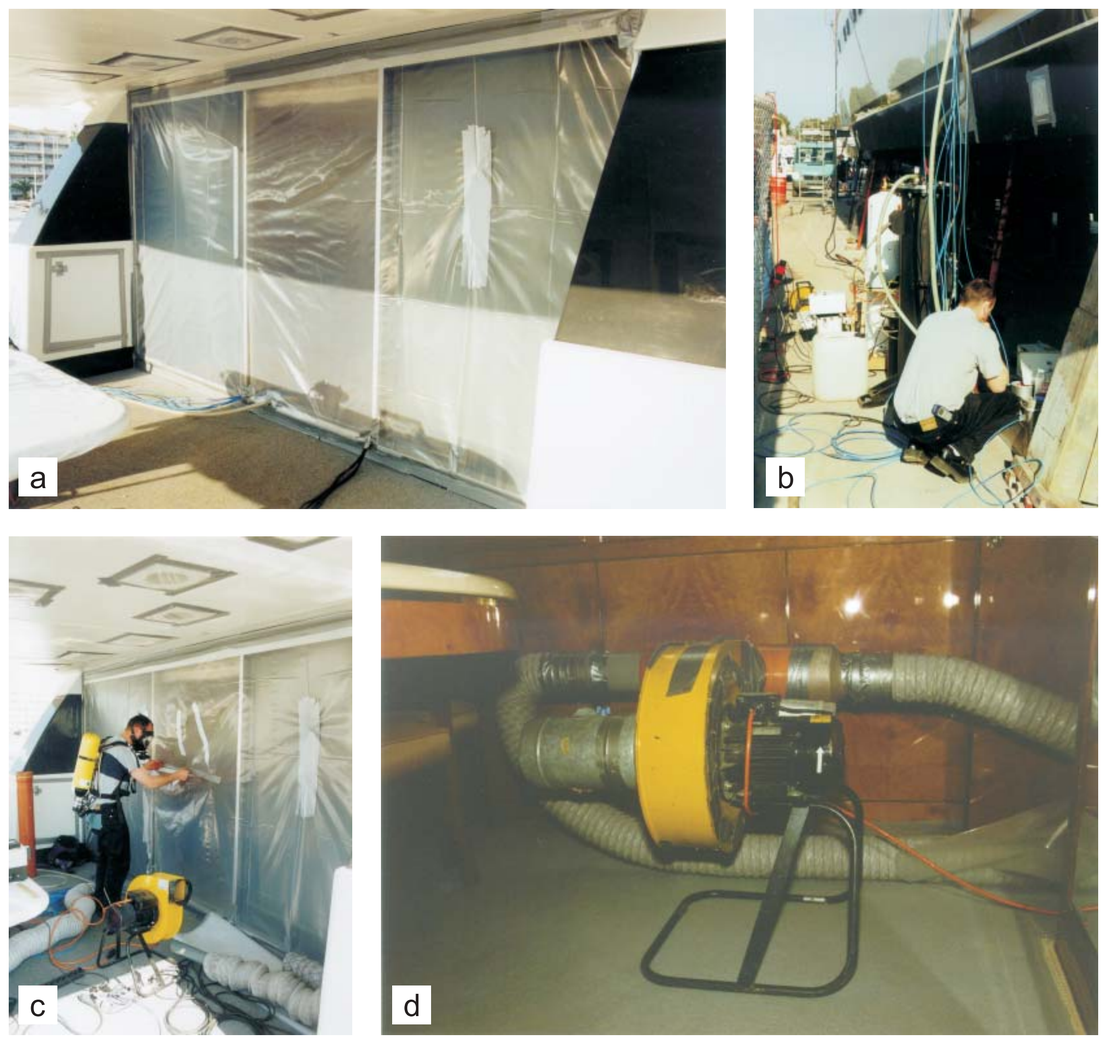


Life cycle (a), soldier (b), pseudergates and soldiers (c) and damage to wood (d) of drywood termites.

Fumigation

The yacht was sealed in a dry dock of a french mediterranean port. The "tape and seal" technique was used. The sealing was checked for gastightness. Prior to fumigation all foodstuff and matrasses were removed. Several powerfull fans and duct-work were installed to get an even distribution of the gas during fumigation.
Sulfuryl fluoride (= SF) was released from cylinders. SF is an inflammable, not combustible, odor- and colorless inorganic gas which rapidly aerates from fumigated structures and objects leaving no breakdown residues. The fumigant Vikane is composed of 99.8 % SO_2F_2 and 0,2 % impurities. It was passed through a filtering system, which removed the acid impurities in SF like Hydrogen fluoride and Sulfur dioxide to zero. This highly purified SF made sure not to alter or tarnish sensitive materials and surfaces of the interiors. The SF concentration was measured at 8 several locations via monitoring lines to insure efficiency of the fumigation and to reach a 100% mortality of the target pests. The area around the yacht was also continuously monitored for SF traces using an Interscan GF 1900 to ensure the safety for bystanders during the entire exposure time of SF. When the target ct-product was accumulated, assuming all target pests were eradicated, aeration was carried out. Fans and ductings were used to aerate SF from the boat following fumigation. After an aeration period of aproximately 20 hours there were no traces of SF found in the boat. The yacht was handed over to the owner for reoccupancy.

Impressions of the yacht showing the valuable materials and modern electronical devices.



"Tape and seal" technique (a), monitoring the fumigation (b), entering the yacht for aeration (c) and fan with duct-work for gas-distribution (d).

Conclusions

Purified Vikane is an ideal fumigant to control insect pests in sensitive areas, like in precious yachts. It is not necessary even to remove sensitive materials, like polished metals and alloys.

References

Handbook of Household and Structural Insect Pests, Entomological Society of America, ed. by R. E. Gold and S. C. Jones, (2000), 117 - 119.

Fumigation company

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