ACCSYS

Termite Durability of Accoya[®] Wood

Summary

Accoya[®] wood has proven to be an effective barrier to wood destroying insect damage in multiple field tests and laboratory trails done in many locations in the world. This includes tests with multiple species of termites. The exact reasons for Accoya wood's effectiveness are not entirely understood since contributing factors such as insect communication methods, digestive processes and other traits are only partially understood and agreed about amongst leading experts.

Accoya wood's most impressive and consistent results have been in representative longer-term field tests. Laboratory tests that take the time and steps to reproduce field conditions to a reasonable degree have also yielded consistent impressive results. Factors that contribute to representative results include using a "choice" or 2-choice test. This means multiple food sources are available, as is almost always the case in actual field conditions. Since Accoya wood is not toxic, if it is their only food source available in tests then termites may continue to attack it. Additionally, "no-choice" or 1-choice tests are often run for short time periods and may be more indicative of the effective short-term toxicity of a treatment versus whether long-term wood protection is provided. Leaching of wood samples prior to their testing to better simulate the real-world challenge of protection despite wet conditions is also an important consideration and does not impact the effectiveness of Accoya wood.

Test reports

Official long-term field tests and laboratory-based termite testing is currently being performed in USA, China and Japan. Unofficial tests are being performed in several other locations worldwide.

Mississippi State University AWPA E1 – R. flavipes (common US termite):

An overview of the results of the Mississippi State University (MSU) testing is given below. The results of a 'no-choice' test (the termites are only given one thing to eat) show that Accoya wood was 3-5 times better (as measured by sample weight loss) than the untreated control samples (Table 1).

Treated Sample	Weight Loss	Visual Rating	Mortality
Accoya [®] Radiata - Sample 1	5.7%	9.2	100%
Accoya [®] Radiata – Sample 2	4.3%	9.2	100%
Accoya [®] Radiata – Sample 3	5.6%	9.1	100%
Accoya [®] Radiata – Sample 4	5.9%	8.9	100%
Accoya [®] Radiata – Sample 5	4.8%	9.0	100%
Accoya [®] Radiata – Sample 6	3.9%	8.8	100%
Untreated Control	19.3%	6.7	Slight

Table 1: No Choice Method - Exposure to subterranean termites (R. flavipes) for four weeks.

Visual Rating Key:

- 10 Sound, surface nibbles permitted
- 9 Light attack
- 7 Moderate attack, penetration
- 4 Heavy attack
- 0 Failure



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Mississippi State University AWPA E1 – R. flavipes (Cont...):

MSU also performed a 'choice test' (Table 2). This means that termites are given the choice of attacking Accoya wood or the control samples that are both in each test container. This is a much more realistic test since termites in the field can decide what they want to attack. Accoya wood performed even better in these tests with 12-24 times the resistance (as measured by sample weight loss) as compared to untreated control samples. Below is a summary version of the results.

Table 2: Choice Method - Exposure to subterranean termites (R. flavipes) for four weeks.

Treated Sample	Weight Loss			Visual Rating			
	Treated		Untreated Choice	Treated		Untreated Choice	Mortality
Accoya [®] Radiata - Sample 1	2.0%	VS.	31.6%	9.0	VS.	3.6	Slight
Accoya [®] Radiata – Sample 2	1.4%	VS.	33.8%	9.0	VS.	3.9	Slight
Accoya [®] Radiata – Sample 3	1.7%	VS.	31.0%	9.0	VS.	3.9	Slight
Accoya [®] Radiata – Sample 4	2.3%	VS.	28.2%	9.0	VS.	4.2	Slight
Accoya [®] Radiata – Sample 5	1.4%	VS.	31.0%	9.0	VS.	3.5	Slight
Accoya [®] Radiata – Sample 6	1.5%	VS.	31.4%	9.0	VS.	3.1	Slight

Visual Rating Key:

10 Sound, surface nibbles permitted

9 Light attack

7 Moderate attack, penetration

4 Heavy attack

0 Failure

Louisianna State University – Formosan Termite Demonstration Test (Considered the World's Most Aggressive Termite):

A Formosan termite demonstration test on full sized lumber (2"x4" dimension lumber) was performed at Louisiana State University (LSU) in late 2008 through early 2009. For this demonstration, LSU placed untreated radiata pine alongside Accoya wood in their termite holding tank for 99 days. At the end of the test period, the untreated radiata was attacked on all four sides of the lumber and structurally compromised. In stark contrast the Accoya wood only exhibited slight grazing. Pictures below detail the results.



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Louisiana State University AWPA E1 – Formosan Termite (Considered the World's Most Aggressive Termite):

An overview of the results of the Louisiana State University (LSU) testing is given below in Table 3.



 Table 3: AWPA E-1 - LSU Formosan Termite Test Results.

The results of the Formosan termite 'choice' test (termites are given the choice of attacking Accoya wood or the control samples that are both in each test container) show that Accoya wood was 6-22 times better (as measured by sample weight loss) than the untreated control samples (Table 3). Results verify good performance of Accoya wood versus Formosan termites which are considered the world's most aggressive.

