KILN DRY TREATMENT FOR NON-MANUFACTURED WOOD PACKAGING IN SOUTH KOREA

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Wood packaging is used for almost all trade consignment - plant and non-plant products. Since wood packaging is usually made of non-manufactured wood that has not been sufficiently processed or treated, it may act as a carrier of destructive foreign pests. The European Union made a decision that starting October 1, 2001, the importing non-manufactured coniferous wood packing material from certain countries should be treated for the pinewood nematode. The International Plant Protection Convention is also preparing a draft international standards for non-manufactured wood packing material.

In South Korea, the wood packaging is fumigated with MB to meet importing countries' requirement. The manufacturers kiln-dry the finished wood packaging to reduce its moisture content, and normally the core temperature reaches and is held sufficiently to meet the EU standard(56℃, 30min). Therefore, it would be advantageous to establish an export certification program to permit the wood packaging which has been kiln dried at a certified facility without additional MB fumigation.

The mortality test of kiln dry on the 5^{th} instar Yellow-spotted longicorn Beetle (*Psacothea hilaris* (Pascoe)) and the adult Japanese termite(*Reticulitermes speratus* (Kolbe)) was conducted at a commercial kiln dry chamber installed in a wood pallet factory. Both insects were reared in the laboratories.

The computer-operated chamber is capable of raising the ambient air temperature up to 80℃, and during a routine operation, and the core temperature of the wood packaging raises up to ~70℃. The core temperature was measured by inserting a sensor into the cord of the thickest lumber consisting a pallet. Fluctuation of the core temperature was monitored by a

PC and the plot was generated.

The core temperature exceeded 56℃ and was maintained at 56℃ for more than 30 minutes during cooling period.

The experimental insects were placed in a wooden box(15X15X15cm) and the box in turn was located at the point of air efflux where the ambient air temperature is the lowest of the chamber resulting in the lowest core temperature. A total of 6 wooden boxes were prepared for the experiment, and the test was repeated 3 times. The result is shown below.

Table 1. The effect of kiln dry on the mortality of *Reticulitermes speratus* (Kolbe) and *Psacothea hilaris* (Pascoe)

Treatments	Insect Species	Results(Live/Total Insect Number)				Mortality (%)
		Rep 1	Rep 2	Rep 3	Average	
Kiln Dry (56℃, 30min)	*Reticulitermes speratus* (Kolbe)	0/100	0/100	0/100	0/100	100
	Psacothea hilaris (Pascoe)	0/20	0/20	0/20	0/20	100
MB fumigation (33g/m^3, 24hr)	*Reticulitermes speratus* (Kolbe)	0/100	0/100	0/100	0/100	100
	Psacothea hilaris (Pascoe)	0/20	0/20	0/20	0/20	100
Control	*Reticulitermes speratus* (Kolbe)	98/100	99/100	100/100	99/100	1
	Psacothea hilaris (Pascoe)	20/20	20/20	20/20	20/20	0

Since the mortality of the insects was 100% when treated by the normal heat treatment of wood packaging, the certification standards for kiln dry facilities are being prepared.