

## Abstract

Lindgren, M. 2004. Management of Damar trees (*Shorea javanica*) for decreasing pest damage caused by longhorn beetles (Coleoptera; Cerambycidae).

The aim of this study to collect data on the management of the Damar tree (*Shorea javanica*) in Damar gardens (agroforests) and to study the insect damage caused by longhorn beetles (Coleoptera: Cerambycidae) on the Damar tree in west Lampung, Sumatra, Indonesia. The results are used to suggest recommendations on control and management of the damage. The methods used involve tree analysis, insect trapping, plot measurements and interviews. The study was conducted during May – July 2003.

The main part of damage is caused by a cerambycid identified as *Massicus scapulatus*. This is the first record of this species in Indonesia and the first documented pest outbreak by this species in south east Asia. The insect seems to be a native species in the natural forests surrounding the damar gardens. The damage is caused by the larvae tunneling under the bark and inside the wood, sometimes causing the death of the damar tree. Stressed and mechanically damaged damar trees, caused by tapping holes and regular tapping for resin collection, seem suitable for the females to put her eggs in. The damar resin production, with the aim of highest resin production, affects the damar trees' condition and their natural resistance against this type of insect damage seem to be lowered. The damage includes feeding in the cambial zone of the tree and tunneling into the hardwood. Holes, frass, tunneling and resin exudation are common signs on attacked trees.

Another longhorn beetle, *Palimna annulata*, has also been identified and collected on damar tree during this study. It is believed to be a damaging longhorn beetle on damar trees but has yet to be determined.

Stem breakage has also been studied and determined to be a problem on damar trees. Stem rot and hard winds seems to be a possible reason. The damage caused by longhorn beetles might also increase the risk of stem breakage on damar trees.

Recommended management control includes both direct and preventive action. Direct action includes removal of infested tree parts. The larvae should be killed manually with a springy wire on living and standing attacked damar trees. Preventive action includes a correct tapping procedure of the damar trees and mixing the plant composition within the gardens.