# THE ROLE OF TEA STEM SAPONINS IN THE RESISTANCE OF TEA TO ATTACK BY *XYLEBORUS FORNICATUS*

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The resistance of tea to attack by the Shot Hole Borer, *Xyleborus fornicatus* has been ascribed to the higher content of saponins in their stems. It was suggested that tea stem saponins complex with tea stem sterols making the sterols no longer available to the beetle, which is unable to obtain the sterols required for the production of moulting hormone.

The saponin content of stems from a resistant and susceptible clone of tea were studied and it was confirmed that the saponin content of the resistant clone was significantly higher. The beetle was grown in different artificial media, with and without tea stem saponins and media devoid of the steroid source, yeast to determine the effect of saponins and the absence of steroid on the beetle life cycle.

No significant differences compared with control were observed even after ten generations in the beetle life cycle when grown in artificial media not containing a steroid source. The role of the saponins in resistance, if any, could not therefore be by depriving the beetle of steroid. It is likely that the beetle's requirement of sterol is met by ergosterol present in the fungus, *Monacrosporium ambrosium* which is associated with the beetle in its life cycle.

Although no significant differences were found between the life cycle of beetles growing in control and those in artificial media containing saponins, liquid culture media studies showed that saponins were toxic to the fungus, *M. ambrosium*. The growth of the fungus in terms of mycelial weight was significantly reduced although no effects were observed on the sporulation of the fungus.

It is concluded that, although saponins do not provide resistance to tea clones by complexing with tea steroids, they may contribute to resistance by preventing the healthy growth of fungal mycelia, required for larval growth.