

(S)-2-Hydroxy-3-Decanone as Sex Pheromone for Monitoring and Control of Coffee White Stem Borer (*Xylotrechus quadripes*)

JAYARAMA, M. V. D'SOUZA¹, D. R. HALL²

¹Central Coffee Research Institute, Coffee Board, Coffee Research Station-577117,
Chikmagalur Dist, Karnataka, India

²Natural Resources Institute, University of Greenwich at Medway, Chatham, Meritime, Kent

SUMMARY

Coffee White Stem Borer (*Xylotrechus quadripes*) Chevrolat (Coleoptera: Cerambycidae) is a major pest of coffee arabica in India causing great economical loss in terms of production and destruction of mature plants. Chemical and mechanical methods of controlling this dreaded pest though available, their use is restricted on account of the harmful nature of the pesticides and laborious techniques. Therefore, sex pheromone system for the control of White stem borer in coffee has been developed. The male borer is found to attract the females through chemical secretion in the field. This compound was isolated, identified and chemically characterized to be (S)-2-hydroxy-3-decanone. The compound has been successfully synthesized in the laboratory. Bioassay studies using this synthetic compound established that female borers could be effectively attracted and trapped. Field experiments conducted for over 8 years in India demonstrated that synthetic male sex pheromone could be efficiently used as an attractant to trap female borers in the field. Methods of trapping have been standardised. Use of sex pheromone in controlling the pest can greatly reduce the use of hazardous chemicals thereby lessening the environmental contamination. This paper deals mainly with the isolation, identification, chemical synthesis of male sex pheromone of coffee white stem borer, laboratory bioassay and results of field experiments.