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Impact of integrated pest management for the yield of cinnamon (*Cinnamomum verum* Presl.)

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Rough bark disease (*Phomopsis* spp.), wood boring moth *(Ichneumoniptera cinnamomumi*) and weeds are major pests in the cinnamon plantations and damages of them are badly affected to the yield loss. This study was mainly attempted to determine the effects of pest incidences on the yield of mature (above ten years old) cinnamon plantations. Field trials were conducted in the Cinnamon Research Station (06^0 01' 40.6'' N, 80^0 33' 34.8'' E, altitude 36m MSL) in the southern province of Sri Lanka. Selected cinnamon field was divided in to twelve plots and each plot was consisted 36 cinnamon bushes. Four treatments, T1– Integrated Pest Management (IPM) plots (recommended fertilizer application, weeding, insects and disease control), T2- fertilizer plots (recommended fertilizer application and weeding only), T3- weeding plots (only weeding) and T4- control plots (non-treated) were used with three replicates. All treatments were applied twice per year and dry bark yields, other yield parameters and time taken to peeling of fresh bark were also recorded twice per year. In addition, severity of the rough bark disease (*Phomopsis* spp.) and wood boring moth (*Ichneumoniptera cinnamomumi*) damage were measured every two month intervals by using severity ranking method. Annual costs and benefits were calculated with related to each experimental plot. According to the experimental results, IPM plots had the significantly ($P<0.05$) highest dry bark yield of 2944.9 kg ha^{-1} yr^{-1}, when compared to fertilizer, weeding and control plots. The lowest dry bark yield (253.9 kg ha^{-1} yr^{-1}) was recorded in control plots. Significantly highest number of new shoots (28076 shoots ha^{-1} yr^{-1}) and harvestable stems (28764 stems ha^{-1} yr^{-1}) were observed in the IPM plots. Similarly, stem length was comparatively higher in IPM plots. But time requirement for peeling one kilogram of fresh bark was higher in control plots (326.37 minutes kg^{-1}). On comparison, lowest damages by the pests were recorded in IPM plots. In the view of yield parameters, yield loss percentage was 36.9% due to major insect pest and disease pest in the cinnamon. According to the cost benefit analysis, total profit was higher in IPM plots. Based on the experimental results and environment impact, integrated pest management is most economical for the cinnamon cultivation.

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