

Shot-hole borer on cocoa

Xylosandrus compactus



Pupae of *X. compactus* (© E. B. Greco, M. G. Wright, CC BY-NC 3.0)



Mature (black) and teneral (light brown) females of *X. compactus* inside the tunnel of a branch (© E. B. Greco, M. G. Wright, CC BY-NC 3.0)



Entry hole made by *X. compactus* in coffee branches (Photo by Riann H.A.S. Wakefield, Wakefield and Sons coffee farm)

Prevention	Monitoring	Direct Control
<ul style="list-style-type: none"> • Shot-hole borer is a small beetle that enters the current year's twigs and branches by boring holes which causes necrosis and eventually kills the live twigs and branches. • Use good soil conservation and water practices to promote plant health and vigour. Healthier plants are more resilient to borer damage: <ul style="list-style-type: none"> • Apply organic manure/fertilizer • Apply mulch to help with water retention of the soil • Keep fields weed free to reduce nutrient competition • Promote presence of natural predators such as ants and birds by planting trees and shrubs • Do not associate cocoa with coffee since it is the preferred host for this pest and may attract the borer, to the field. Avoid association with other alternative hosts: avocado, macadamia, mango, cinnamon, tamarind, southern magnolia, eucalyptus • Prune and desucker plants. If this is not done, the resulting microclimate can facilitate the development cycle of the borer 	<ul style="list-style-type: none"> • Use ethanol baited traps (hang a water bottle upside down and cut out two windows on each side. Pour 75 % ethanol into the bottle) to monitor populations and outbreak • Check crop weekly for symptoms: <ul style="list-style-type: none"> • Light green leaves of infested branches and withered leaves • Wilting and drying of branches • Small entrance holes (0.8 mm diameter) located on the underside branches caused by beetles boring into them • Sometimes cankers, 1-2 cm long, are around the attacked area of larger twigs and branches • Split the affected branches to check for presence of a white spongy (fungal) growth, galleries, and small light brown to shiny black beetles. • Adults are dark brown and very small, less than 2 mm long • Larva are creamy white and legless, white head gradually changes to pale-brown, length similar to adult • Consider taking action if you find beetles and their galleries within affected branches 	<ul style="list-style-type: none"> • Prune and remove or burn (if allowed in your area) all infested branches/ twigs. If infested plant material is not removed then the borer can stay alive and re-infestation can occur. • Alternatively, use a chipper or shredder to destroy the pruned branches and the beetles and larvae within them. This residue can be left on site if needed, but not all beetles may be killed this way • Encourage other farmers within the area to control the twig borer so that it does not re-infest the field

Note: Pesticides may be available to control this pest. Please check with the Ministry of Agriculture in your country to find out which pesticides are registered in your country and the local restrictions for their use.