DAFM Plant Pest Factsheet

Cryptophlebia ombrodelta
Macadamia nut borer

Fig 1: *Cryptophlebia ombrodelta* adult moth

Pest Characteristics

- **Pest:** *Cryptophlebia ombrodelta*
- **Common name:** Macadamia nut borer / lichi fruit moth
- **Hosts:** Major commercial hosts include *Glycine max* (soyabean), *Litchi chinensis* (litchi), *Macadamia integrifolia* (macadamia), *Phaseolus lunatus* (lima bean), *Phaseolus vulgaris* (common bean), *Tamarindus indica* (Indian tamarind), *Vigna unguiculata* (cowpea) and *Dimocarpus longan* (longan fruits), none of which are widely cultivated in Ireland. The most likely cultivated host in Ireland is *Cassia fistula* (golden shower tree).
- **Symptoms:** The pest typically bores into fruit and nuts of host plants leaving behind an entry hole and frass (Fig 2).
- **Entry Pathways:** The pest has been intercepted on imported fresh produce of *Phaseolus* and *Vigna* entering Ireland on several occasions.
- **Dispersal:** Adults are capable of flight and tend to be associated at heights of ~5 to 9m in certain host trees. However, migration distances of the pest have not been fully characterised to date.
- **Climatic tolerances:** It is considered highly unlikely that the pest could establish in the Irish climate. *Cryptophlebia ombrodelta* is typically associated with tropical and sub-tropical regions of the Pacific. The regions where *C. ombrodelta* inhabit typically have average summer temperatures of >20°C and winter temperatures which do not fall below 10°C.
- **Impact:** In invaded regions the pest has caused significant damage to commercial production of litchi, macadamia and tamarind.

Fig 2: Visual symptoms of *Cryptophlebia ombrodelta* on macadamia, entry hole (a), frass left behind from boring into nut (b) and (c) typical larvae found within infested nut/fruit/pod

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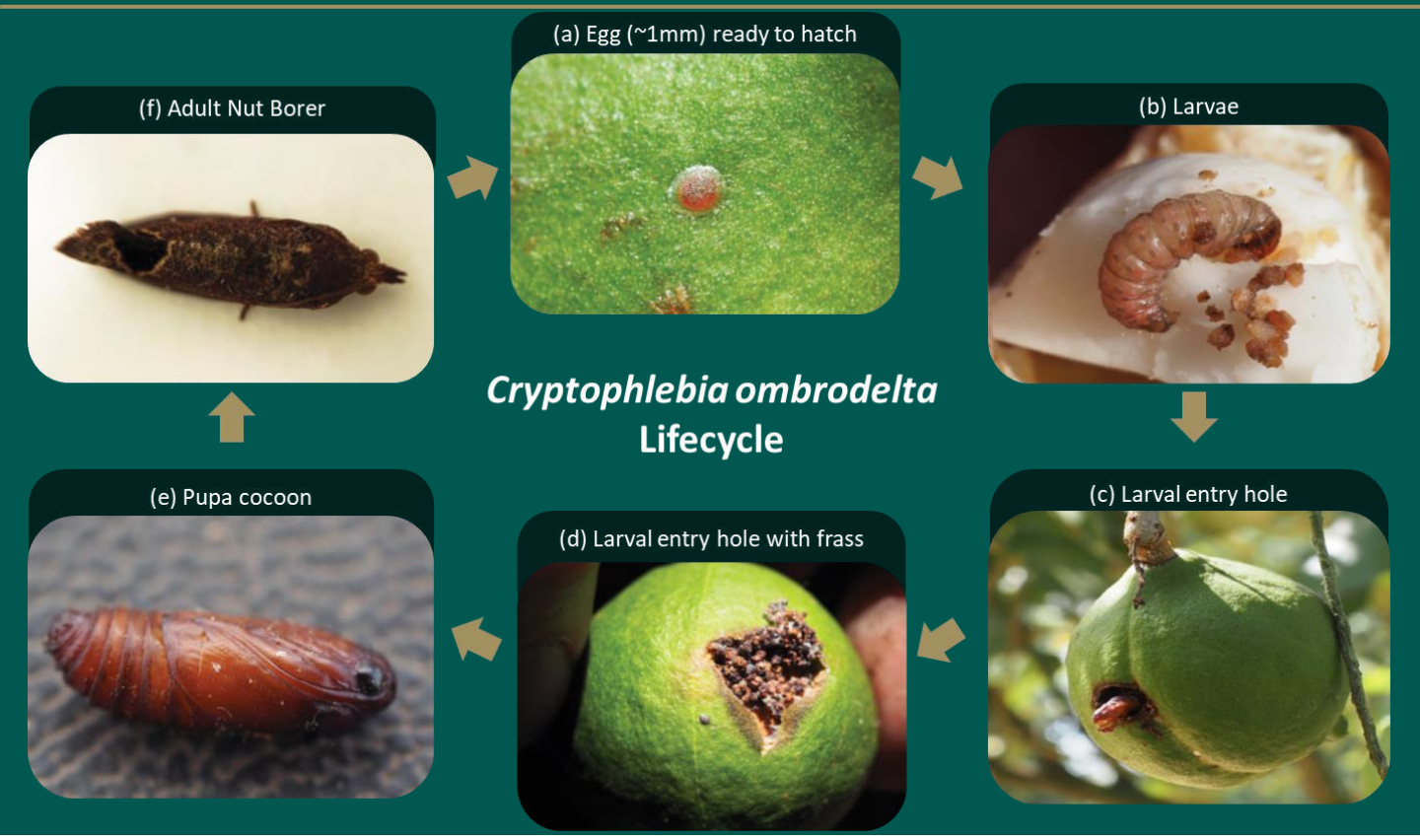

- **Distribution:** The exact origin of the *C. ombrodelta* unknown. However, it is currently considered native to a number of Asian, Australasian and Polynesian countries. It is considered an invasive species in Hawaii though the dates for its introduction are unknown (Fig 3).
- **Lifecycle:** Females lay eggs throughout the summer months on host fruit/nuts/pods. Multiple eggs are laid, each singly (see lifecycle a), on hosts. Damaged fruit/nut/pods are preferential targeted as it increases the entry rate of hatched larvae. In is native range eggs typically hatch within 4-9 days, larvae bore through the host surface and consume the interior undergoing 5-6 developmental "instar" stages over 21-29 days. The final instar stages remerges from the fruit/nut/pod and forms a cocoon for the pupal stage in which the adult moth develops (8-16 days). The pest can produce 3-4 generations a year in certain regions.
- **If suspected:** If you find a suspected specimen please submit images to DAFM at: plantpestreport@agriculture.gov.ie

Photo credits: Fig 1: Rebecca Stroud (CC-BY-NC 4.0 (Int)). Fig 2 & Lifecycle: Taken from Bright (2020): https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0003/1258824/Macadamia-nut-borer.pdf

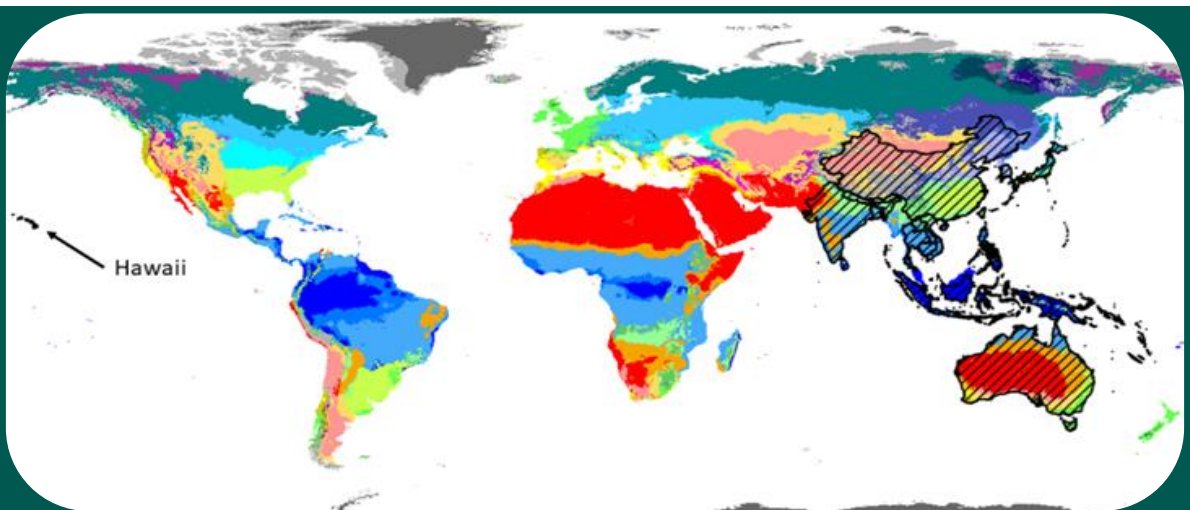

Fig 3: Known global distribution of *C. ombrodelta* overlaid on climate classifications of regions

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