DAFM Plant Pest Factsheet

Pityogenes chalcographus

Six-toothed spruce bark beetle

Fig 1: Adult *Pityogenes chalcographus*

Pest Characteristics

- **Pest:** *Pityogenes chalcographus*
- **Common name:** six-toothed spruce bark beetle
- **Hosts:** The beetles main host is *Picea abies* (Norway spruce), however, it is frequently found on other conifers such as *Picea* spp., *Pinus* spp., and *Larix* spp. In some studies, and field observations, *P. sitchensis* (Sitka spruce) was highly suitable for beetle development and performance.
- **Invasive Risk:** The species has been detected several times on imported material into Ireland. The wide availability of host plants and suitability of our climate concludes the risk of establishment in Ireland is high.
- **Entry Pathways:** Most interceptions have been on non-compliant Wood Packaging Material (WPM). For other pathways, legislation already in place for similar bark beetles, significantly reduces the risk of entry. The species small size and its preference for colonizing smaller material increases the chances of it entering undetected.
- **Impact:** There is uncertainty on potential impacts. In its many areas of its current distribution, *P. chalcographus* is considered to be a serious secondary pest. However, no impacts are reported in the UK. The beetle is most commonly found after windstorms or drought and in association with the more harmful *Ips typographus*, which is not present in Ireland.
- **Symptoms:** Trees attacked by *P. chalcographus* may show little sign of damage other than a series of small bore holes and/or frass (a) Other more apparent damage of ill health, stressed or dying trees may indicate that bark beetle attack (c)

Fig 2: (a) Entrance hole with frass (b) Pitch tubes on a young tree (c) Dead Norway Spruce trees

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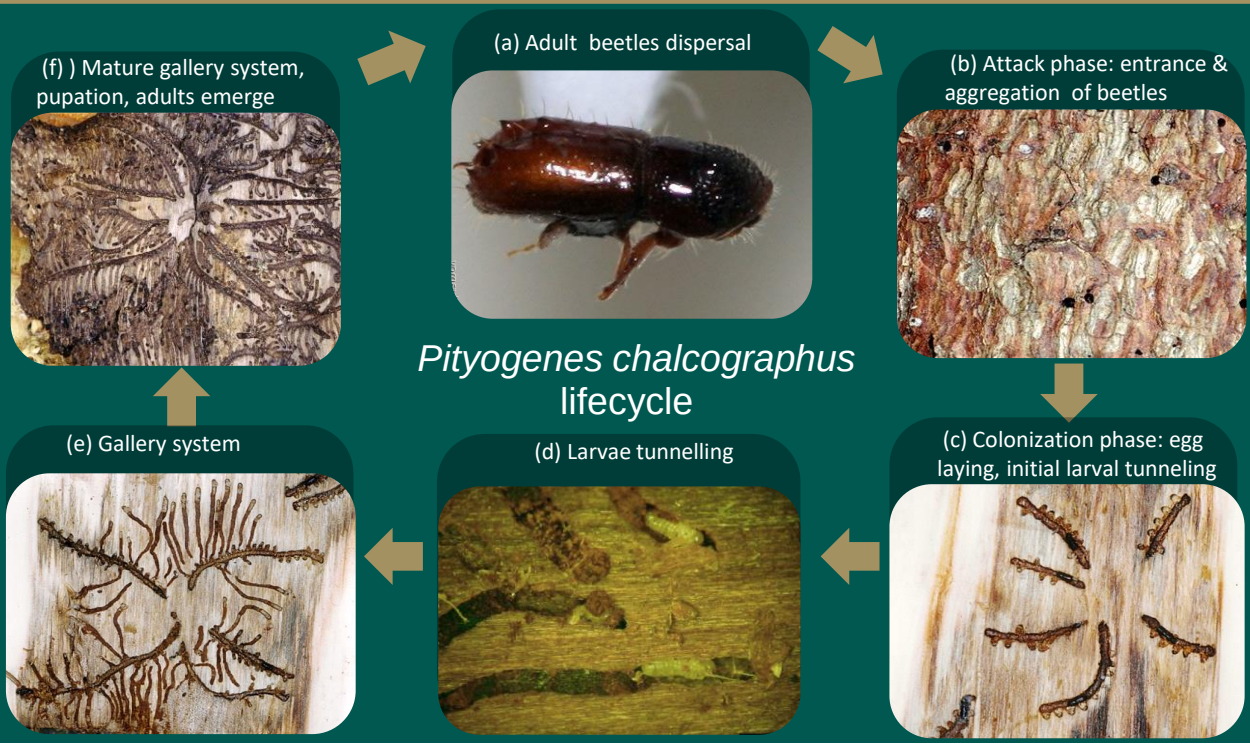

Pityogenes chalcographus lifecycle

- **Lifecycle** (a) Dispersal of adult beetles (b) Attack phase: tree choice and entry by pioneer beetles, aggregation pheromones are released to attract more beetles. Associated fungi with the beetles are inoculated in the phloem. Tree defenses are overwhelmed. (c) - (f) Colonization phase: In a star-like arrangement, a mother gallery is formed, eggs are laid. Hatched larvae mine outwards. Larval tunneling can be extensive and damaging. Pupal chambers are excavated, fungi form spore layers in pupal chambers contaminating beetles. Young beetles emerge to infest new trees.
- **Adaptability:** This pest has as an ability to infest trees regardless of their diameter and bark thickness. This species has adapted to and attacked new hosts, both American and European species.
- **Dispersal:** This species have a good capacity for aerial dispersal, up to 80km is possible to locate suitable material.
- **Distribution:** This beetle can be found throughout Eurasian conifer forests from Scandinavia to the Balkans in Europe, to Japan and Siberia.
- **If suspected:** If you find a suspected specimen or symptoms, please submit images to DAFM at: plantpestreport@agriculture.gov.ie

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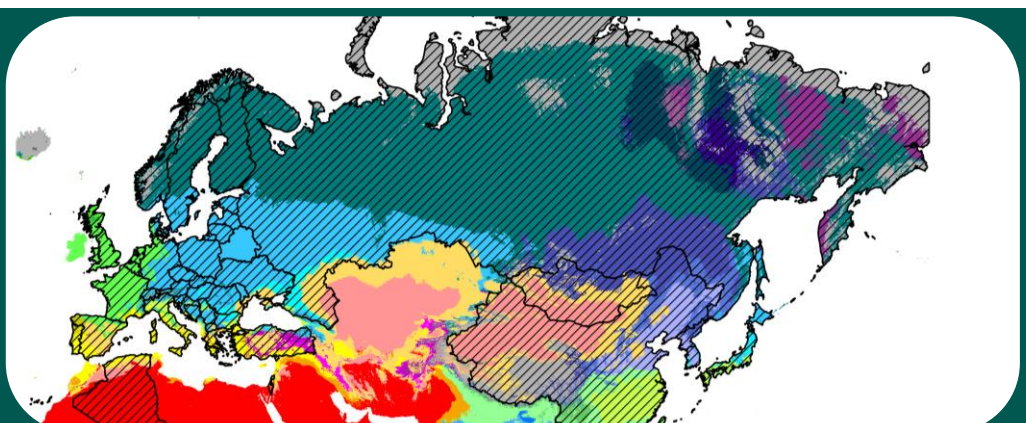

Fig 3: Known distribution of *P. chalcographus* (cross hatched areas) overlaid on regional climate classifications

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