DAFM Plant Pest Factsheet

Leptinotarsa decemlineata
Colorado beetle

Fig 1: *Leptinotarsa decemlineata* adult, size ranges from 8.5 -11.5 mm

Pest Characteristics

- **Pest:** *Leptinotarsa decemlineata*
- **Common name:** Colorado beetle
- **Hosts**: The main host is *Solanum tuberosum* (potato) with various other cultivated and wild solanaceous species also acting as important hosts.
- **Invasive risk:** The species is highly adaptable and has successfully expanded its range in North America and has invaded diverse geographical regions across Eurasia. Furthermore, as each female can lay up to 2000 eggs, a breeding colony could be established by a single fertilised beetle. In July 2023, findings of *L. decemlineata* in a potato field in Kent, England were reported. Previous outbreaks have been successfully eradicated such as in England (1977), Denmark, Finland, Sweden.
- **Entry pathways:** The beetle is known to move in trade, in particular as a hitchhiker. The pest has been found on imported non-host plant material, such as leafy vegetables, salad leaves and fresh herbs. For example, numerous beetles were intercepted in Ireland in 1996 on imported Parsley. Natural spread is a feature on the continent, adults can disperse more than 100km, the risk of introduction is reduced by our geographical location.
- **Climatic suitability:** Climatic conditions suitable for the establishment of *L. decemlineata* do occur in Ireland.
- **Symptoms:** Adult beetles are distinctive in appearance because of their size, characteristic markings and colour (Fig 2 a). Defoliated leaves can have characteristic black and sticky excrement on the stem and leaves (Fig 2 b) Larvae contain two conspicuous rows of dark spots (Fig 2 c).

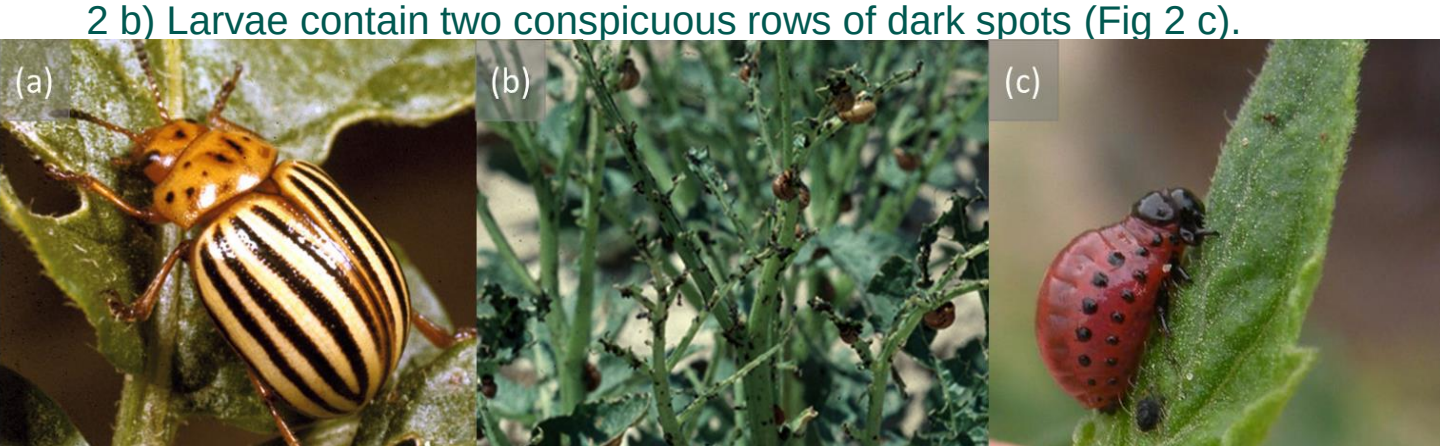

Fig 2: Symptoms & signs (a) adult are yellow with black stripes (b) defoliation and excrement (c) larvae

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Fig 3 *Leptinotarsa decemlineata* lifecycle

- **Lifecycle:** When soil temperatures rise to 11°C (Spring/summer), adults emerge from overwintering diapause in soil and begin to feed and mate. Females will lay masses of 60 eggs on the underside of leaves. Up to 2000 eggs in total can be laid across different plants. Eggs hatch occurs after 4 - 14 days, depending on temperature, and larvae begin to feed on host leaves. There are four larval stages (instars). At 29°C larvae can complete development in 8 days; at 14°C it takes 28 days. Fourth instar larvae drop to the ground and burrow into the soil to pupate. Upon emergence adults will feed and mate beginning the lifecycle again or seek an overwintering site to enter diapause. 1 to 3 generations per year are possible in Europe.
- **Impact:** Where present, *L. decemlineata* is considered to be the most important defoliator of potato crops. If left unmanaged, yield loss can occur.
- **Distribution:** Native to North America the insect was officially found in 1922 in France and subsequently spread across Europe. Currently in Europe the species is widely distributed with the exception of Ireland, UK, Denmark, Cyprus, Malta, Norway and areas of Finland & Sweden (Fig 4).
- **Dispersal:** Adults move by walking or flying. Within suitable habitats short-distance walking is common. However, the beetles are capable of travelling considerable distances (100s of metres up to 100s of km) to colonize new areas through migratory flights and wind assistance.
- **If suspected:** If you find suspected specimens, please submit images to DAFM at: plantpestreport@agriculture.gov.ie

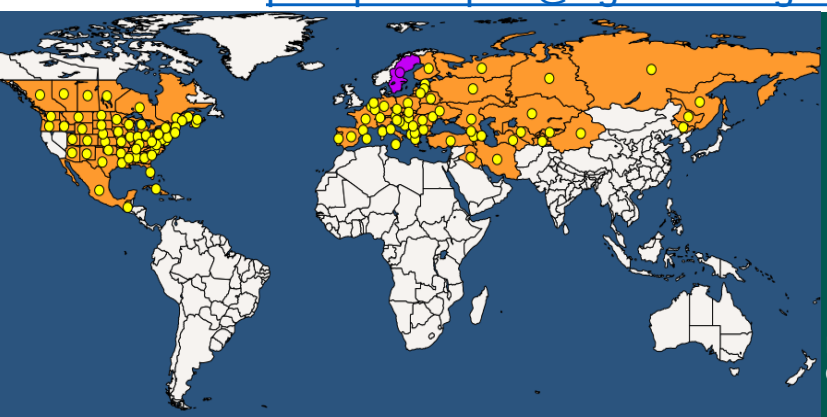

Fig 4: World map of *L. decemlineata* distribution taken from the EPPO database (Link)

Photo credits: Fig 1 Scott Bauer, USDA Agricultural Research Service, Bugwood.org; Fig 2 (a) Clemson University - USDA, Bugwood.org; Fig 2 (b) & Lifecycle (b) (e) Whitney Cranshaw, Colorado State University, Bugwood.org; Fig 2 (c) Jessica Louque, Smithers Viscient, Bugwood.org; Lifecycle (a) David Cappaert, Bugwood.org; Lifecycle (c) Bruce Watt, University of Maine, Bugwood.org. Lifecycle (d) USDA APHIS PPQ - Oxford, North Carolina, Bugwood.org; Lifecycle (f) Jack Rabin, Rutgers NJ Agric. Expt. Station, Bugwood.org

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