

This short description was prepared in the framework of the EU FP7 project DROPSA - Strategies to develop effective, innovative and practical approaches to protect major European fruit crops from pests and pathogens (grant agreement no. 613678). This pest was listed in the DROPSA alert list for apple, *Vaccinium* and *Vitis* fruit.

**Phlyctinus callosus (Coleoptera: Curculionidae)**

**Fruit pathway:** adults feed on fruit (see Damage). On grapes, adults of *P. callosus* (vine calandra) attack fruit and can cause scarring (CABI CPC). Stalks of individual berries can be chewed off entirely or young grape bunches can be ring-barked, thus destroying the bunch completely (Plantwise nd) or leading to reduced bunch size. Adults can bore holes into berries and stems of bunches (de Villiers 2006). *P. callosus* has been intercepted frequently in the USA on fruits, including on table grapes (CABI CPC).

**Other pathways:** Plants for planting, soil; eggs, larvae and pupae in soil, larvae feed on roots, adults also attack leaves and green stems (CABI CPC).

Uncertain pathways: cut flowers, vegetables, root vegetables.

**Hosts:** polyphagous on monocotyledons and dicotyledons, hosts include: *Citrus*, *Daucus carota* subsp. *sativus*, *Malus domestica*, *Vaccinium corymbosum*, vegetables, *Vitis vinifera*, (Bredenhand *et al.* 2010, EPPO GD, PaDIL, nd). CABI CPC lists additional hosts such as *Fragaria ananassa*, *Juglans regia*, *Pastinaca sativa*, *Pelargonium*, *Prunus persica*, *Prunus domestica*, *Prunus salicina*, *Pyrus communis*.

**Distribution:** Africa: South Africa (native); Oceania: Australia (introduced), New Zealand (introduced). *P. callosus* has spread from South Africa to New Zealand and Australia (CABI CPC). (Bredenhand *et al.*, 2010, EPPO GD, CABI CPC)

**Damage:** Adults of *P. callosus* cause damage to fruit on apple, nectarine, pear, plum and peach, and on grapevine mostly to leaf and stems (incl. those of bunches or berries) (CABI CPC). Lesions on fruit make it unmarketable and infestations cause rejections of fruits for exports (de Villiers 2006; Pryke and Samways 2007). On host plants, larvae cause damage to roots, which is not important on established trees, but important on root vegetables. In South Africa, most damage on apples is caused by adults; *P. callosus* causes 40% of all damage to apple in Elgin area (Western Cape province); damage was estimated to reach US\$ 500,000 in 1987). Main crop losses in untreated apple orchards ranged from 5 to 29% between seasons. *P. callosus* is regarded as one of the most serious pests of grapes in the Western Cape (Pryke 2005), a key pest of apples and nectarines in the South Western Cape (de Villiers 2006; Ferreira 2010) and a key phytosanitary pest of South African table grapes (Pryke and Samways 2007). Leaves have shot-holes and scalloped edges. Additionally, cherries and strawberries are damaged. The weevil attacks fruit, leaves, flowers, buds and stems (Learmonth 2016). Young fruit trees can be defoliated entirely at high adult population densities (Ferreira 2010). Larvae can severely damage young vines which become stunted and water-stressed (Learmonth 2016). In Tasmania, economic damage is caused by larvae on vegetable root crops. In Australia, it is a polyphagous pest of economically important crops where it has established, also in nurseries (CABI CPC). In New Zealand, this species is a pest of grapevines grown in glasshouses (Ferreira 2010).

**Other information:** *P. callosus* was intercepted on table grapes to New Zealand (Biosecurity New Zealand 2009) and frequently intercepted in USA (including table grapes) (CABI CPC). *P. callosus* is a quarantine pest in North America, having been intercepted since at least the late 1960's on consignments from South Africa. It is also a quarantine pest in Israel. So far, the species was not able to establish in northern hemisphere despite several interceptions (CABI CPC). Proposed in answer to the EPPO questionnaire on pests of concern for *Vitis*.

<b>Recorded impact:</b> High (on several hosts)	<b>Intercepted:</b> Yes	<b>Spreading/invasive:</b> Yes
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**References:**

- Biosecurity New Zealand 2009. Import risk analysis: table grapes (*Vitis vinifera*) from China. MAF Biosecurity New Zealand, Wellington, New Zealand, 314 p.
- Bredenhand E, Hoorn A, van May F, Ferreira T, Johnson S 2010. Evaluation of techniques for monitoring banded fruit weevil, *Phlyctinus callosus* (Schoenherr) (Coleoptera:Curculionidae), infestation in blueberry orchards. *African Entomology*; 2010. 18(1):205-209. 24 ref.
- CABI CPC. Crop Protection Compendium. CAB International, UK. URL: <http://www.cabi.org/cpc>
- de Villiers M 2006. Development of a pest management system for table grapes in the Hex River Valley. Thesis for Doctor of Philosophy (Agriculture), University Stellenbosch, 183pp.
- EPPO Global Database, European and Mediterranean Plant Protection Organization, France. URL: <https://gd.eppo.int>
- Ferreira T 2010. Rearing of the banded fruit weevil, *Phlyctinus callosus* (Schönherr) (Coleoptera: Curculionidae) and control with entomopathogenic nematodes. Thesis for Master of Agricultural Sciences, University Stellenbosch, 116pp.
- Learmonth S 2016. Garden weevil in vineyards. Department of Agriculture and Food, Western Australia. <https://www.agric.wa.gov.au/pome-fruit/garden-weevil-vineyards?page=0%2C1>, accessed 14.10.2016.
- PaDil no Date. Species factsheet: garden weevil *Phlyctinus callosus* (Schoenherr, 1826). <http://www.padil.gov.au/pests-and-diseases/pest/commodity%20type-pests-and-diseases/135874> (accessed September 2016).
- Plantwise nd. Plantwise Technical Factsheet vine calandra (*Phlyctinus callosus*). <http://www.plantwise.org/KnowledgeBank/Datasheet.aspx?dsid=40299>, accessed 14.10.2016.
- PQR. Plant Quarantine data Retrieval system: EPPO Database on Quarantine Pests. [www.eppo.int](http://www.eppo.int) (accessed August 2015)
- Pryke JS 2005. Source and identity of insect contaminants in export consignments of table grapes. Department of Entomology and Centre for Agricultural Biodiversity Faculty of Science University of Stellenbosch.