

Express PRA for *Lyctus cavicollis*

– Interception –

Prepared by: Julius Kühn-Institute, Institute for national and international Plant Health; by Dr. Peter Baufeld, Dr. Björn Hoppe, Dr. Gritta Schrader, *Dr. Anne Wilstermann*; on: *18-12-2019* (replaces version of 22-01-2018). *Revision highlighted in red and italics.*

Initiation: Interception of decoration material made of *Vitis* from France

Initiation for the revision: Request for an update of the risk analysis by the Plant Protection Service of the Federal State Brandenburg

Express PRA	<i>Lyctus cavicollis</i> LeConte		
Phytosanitary risk for Germany	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
Phytosanitary risk for EU-MS	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
Certainty of the assessment	high <input checked="" type="checkbox"/>	medium <input type="checkbox"/>	low <input type="checkbox"/>
Conclusion	<p>The shiny powder-post beetle <i>Lyctus cavicollis</i> is endemic to North America and does already occur in the EU. It is listed neither in the Annexes of Regulation (EU) 2019/2072 nor by EPPO.</p> <p><i>Lyctus cavicollis</i> infests dry starchy deciduous trees (not coniferous trees).</p> <p>Due to appropriate climatic conditions, the beetle already established outdoors in Southwest Germany. Findings in three EU-Member States (AT, FR, LU) and Switzerland are known, too.</p> <p>Since the beetle exclusively infests dry wood, it is a material pest. It can establish outdoors (on dry wood). <i>L. cavicollis has a high damage potential for dry stored wood or wood in constructions.</i></p> <p>Based on this risk analysis, it is assumed that the pest can establish in further parts of Germany or in currently non-infested Member States and cause non-insignificant damage. <i>However, damage is limited to dead plant parts.</i></p> <p><i>Thus, L. cavicollis is not classified as a potential quarantine pest and Article 29 of Regulation (EU) 2016/2031 does not apply. The user is advised to destroy or disinfect the infested material to avoid damage.</i></p>		
Preconditions for Express-PRA fulfilled?	<p>Yes. One population since 1993 and subsequent populations led to the assumption that the species is considered to be established in South West Germany (three locations) (Bußler, 2009, Geis, 1996). There were single older synanthropic findings in Hesse, North-Rhine-Westphalia, Rhine-Land Palatinate and Bavaria. For the remaining Federal States, there were no findings.</p>		

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Taxonomy, common name, synonyms	Coleoptera, Lyctidae, <i>Lyctus</i> Fabricius, 1792 Grubenhalsiger Splintholzkäfer Lompe (2016) published an identification key for several <i>Lyctus</i> species (adult beetles), including <i>L. cavicollis</i> . http://www.coleo-net.de/coleo/texte/lyctus.htm
Does a relevant earlier PRA exist?	No
Distribution and biology	<p><i>L. cavicollis</i> is endemic to North America (Geis, 1996). The beetle is locally present in Europe. There are one established population in South West Germany (Baden-Württemberg) and synanthropic single findings in the north of Switzerland (Basel), Austria (Upper Austria) and France (Alsace) (CABI, 2017). In 2006, it was detected on wooden piles of a house for the first time in Luxemburg (Gerend 2008).</p>
Are host plants present in the PRA-region? If so, which?	<p>Dry wood, taken as a whole, in the form of deadwood or sawn wood of endemic species as well as of imported wood species is present in Germany and the EU.</p> <p>For the genus <i>Lyctus</i> (species like <i>L. brunneus</i>, <i>L. cavicollis</i> that have been introduced until today) Geis (2002) describes a manifold of tropical woods (in Germany only present as stored product) as well as North American deciduous trees (partly also planted in Germany), starchy deciduous trees that are dry. According to Geis (1996, 2013):</p> <ul style="list-style-type: none"> • <i>Quercus petraea</i>, <i>Q. robur</i>, <i>Q. rubra</i> • <i>Fraxinus excelsior</i> • <i>Ulmus carpinifolia</i> • <i>Prunus avium</i> • <i>Juglans regia</i> • <i>Vitis vinifera</i> • <i>Platanus acerifolia</i> • <i>Castanea sativa</i> • <i>Robinia pseudoacacia</i> • <i>Acer pseudoplatanus</i> • <i>Fagus sylvatica</i> • <i>Tilia</i> sp. <p>In Germany, <i>L. cavicollis</i> was already detected on the following deciduous trees (Geis, 1996):</p> <ul style="list-style-type: none"> • <i>Quercus</i> • <i>Robinia</i> • <i>Fraxinus</i> • <i>Juglans</i> • <i>Vitis</i> • <i>Genista</i> • <i>Abachi</i> (<i>Triplochiton scleroxylon</i>)

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	<ul style="list-style-type: none"> • <i>Betula</i>
Transfer pest consignment → host plant	No transfer to living xylem since the beetle exclusively infests dry wood (7-10 % moisture). Nevertheless, dry branches of the host plant and dead wood might be infested outdoors (Geis 1996).
Is a vector/further plant needed for host alternation? Which? Distribution?	No
Climate in the distribution area comparable to PRA-area?	<i>L. cavicollis</i> needs special climatic conditions and stands of deciduous trees with deadwood, comparable to those currently prevailing in the Rhine valley in Baden-Württemberg.
If no, are host plants present in protected cultivation?	Not relevant, since establishment outdoors possible.
Damage to be expected in the PRA-area?	The powder post beetle <i>L. cavicollis</i> was introduced from Northern America and is considered as destroyer of dry, starchy deciduous trees (Geis, 1996). The beetle can cause considerable damage boring into wooden material. In case of a massive infestation, it is possible that the wood gets powdery to a depth of several centimetres („powderpost beetle"). Damage caused by <i>Lyctus</i> beetles mainly becomes visible when infested wood is used in constructions, e.g. for doorframes. Parquet flooring can be damaged significantly, too. The infestation becomes visible only after extreme processing of the wood by the beetles (Bußler, 2009).
Is an infestation easy to eradicate?	<p>Shi & Tan (1987) describe the following procedures for the control of Lyctidae in wood:</p> <ul style="list-style-type: none"> • Extraction of starch from the wood through storing in water for one year • Treatment with boron containing agents • Spraying with Permethrin • Fumigation with methyl bromide or sulfuryl fluoride • Heat treatment <p>Valuable woods (e.g. works of art) that do not tolerate a chemical or thermic treatment can be treated with ionizing radiation.</p> <p>In general, infested objects in stores can easily be disinfected via heat treatments. However, even in small wood pieces numerous beetles can be present so that infested wood stores have to be cleansed intensively. Infestation outdoors is rather difficult or impossible to eradicate dependent on the infestation extent and due to the host plant range.</p> <p>In case the beetle is already widespread with infestation outdoors like those described for <i>L. cavicollis</i> in three</p>

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	locations in Baden-Württemberg, an eradication is impossible according to Geis (1996).
Remarks	By now, the powderpost beetle is spread almost globally via timber trade.
Literature	<p>Bußler, H. (2009): Teures Leben im Parkett. Eingeschleppte Splintholzkäfer zählen zu den bedeutendsten Schädlingen von Holzprodukten. LWF aktuell 73/2009. https://www.biozid.info/fileadmin/Assets/Schaedlinge/teures-leben-im-parkett.pdf</p> <p>CABI (2017): Datasheet – <i>Lyctus cavicollis</i>. https://www.cabi.org/isc/datasheet/115425</p> <p>Geis, K.-U. (1996): Unbemernte Einbürgerung und Ausbreitung des nordamerikanischen Grubenhalsigen Splintholzkäfers, <i>Lyctus cavicollis</i> LeConte, in Mitteleuropa, nebst Anmerkungen zur möglichen Einschleppung zweier anderer nearktischer Lyctiden (Coleoptera, Lyctidae). Anzeiger für Schädlingkunde, 69 (2): 31-39.</p> <p>Geis, K.-U. (2002): Gebietsfremde Splint- und Bohrkäfer, nach Mitteleuropa mit Importholz und anderen Gütern eingeschleppt. Eine Bestandsaufnahme (Coleoptera: Lyctidae, Bostrichidae). Mitteilungen des Internationalen Entomologischen Vereins e.V. Frankfurt. Supplement X: 106 p.</p> <p>Geis, K.-U. (2012): Eine neozoische Splintholzart unter Einfluss der Klimaerwärmung: Erster Nachweis mehrjähriger Überwinterungen von <i>Lyctus brunneus</i> (Steph.) in einem naturnahen Habitat Südwestdeutschlands (Coleoptera: Bostrichidae: Lyctinae). http://kaeferklaus.de/fileadmin/kaeferklaus.de/Fachaufsaetze/Subtropische_Splintholzkaefer_unter_Einfluss_der_Klimaerwaermung_Suedwestdeutschland_Coleoptera_Bostrichidae.pdf (accessed on 18-12-2019)</p> <p>Gerend, R. (2008): Nachweise neuer und bemerkenswerter Käfer für die Fauna Luxemburgs (Insecta, Coleoptera). Bulletin de la Société des naturalistes luxembourgeois, 109: 107-132.</p> <p>Lompe, A. (2016): Käfer Europas – Lyctus. http://www.coleo-net.de/coleo/texte/lyctus.htm</p> <p>Shi, Z.H., Tan, S.Q. (1987): The susceptibility of Chinese hardwoods to powder post beetles attack and methods of control. Scientia Silvae Sinicae, 23 (1): 109-114.</p>