

Express PRA for *Lyctus brunneus*

– Interception –

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Initiation: Interception of wood packaging material from China by the Plant Protection Service of the Federal State Bremen

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 brunneus</i> Stephens, 1830		
Phytosanitary risk for Germany	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
Phytosanitary risk for EU Member States	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"/>
	<p>The common powder post beetle <i>Lyctus brunneus</i> is presumably endemic to Australia. It is already present in the EU. It is listed neither in the Annexes of Decision (EU) 2019/2072 nor by EPPO.</p> <p><i>Lyctus brunneus</i> infests dry, starchy hardwood.</p> <p>Due to appropriate climatic conditions, it is assumed that the beetle can establish outdoors, at least in Southern Germany. The establishment in South European EU Member States is possible, too.</p> <p>The beetle only infests dry wood. Thus, it is a storage pest. <i>L. brunneus has a high damage potential for stored dry wood or wood in constructions.</i></p> <p>Based on this risk analysis, it is assumed that the pest can establish in Germany or another Member State and cause severe damage. <i>However, the damage is limited to dead plant parts.</i></p> <p><i>Thus, L. brunneus is not classified as a potential quarantine pest and Article 29 of Regulation (EU) 2016/2031 does not apply. The destruction or disinfection of the infested material is recommended in order to prevent damage.</i></p>		
Preconditions for Express-PRA fulfilled?	Yes. A population that existed for several years in Southwest Germany was eradicated (Geis, 2014).		
Taxonomy, common name, synonyms	Coleoptera, Lyctidae, Lyctinae, Lyctini, <i>Lyctus</i> Fabricius, 1792 Brown powder post beetle, Brauner Splintholzkäfer		

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	Hickin (1960) published an identification key for different <i>Lyctus</i> species (adult beetles) including <i>L. brunneus</i> .
Does a relevant earlier PRA exist?	No
	The origin of the beetle is unclear. Geis (2002, 2014) suspects Australia, Hickin (1960) states North America.
Are host plants present in the PRA area? If so, which?	<p>Dry wood as deadwood or as sawn wood of endemic as well as of imported wood species is present in Germany and the EU.</p> <p>For the genus <i>Lyctus</i> (previously introduced species like <i>L. brunneus</i>, <i>L. cavicollis</i>) Geis (2002) describes a variety of tropical woods (in Germany only as stored wood) as well as North-American hardwoods (partly also planted in Germany) as appropriate for an infestation (starchy hardwoods, dry, see also Cymorek, 1984):</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>
Transfer pest from consignment → host plant	No transfer to living wood tissue because the beetle only infests dry wood. Eventually dry branches of the host plants and dead wood can be infested outdoors (Geis 2002, 2012, 2014).
Is a vector/further plant needed for host alternation? Which? Distribution?	No
Climate in the distribution area comparable to PRA area?	Geis (2012, 2014) describes the detection of a multi-annual population of <i>L. brunneus</i> in a near-natural habitat in Southwest Germany (presence in vine-wood (<i>Vitis vinifera</i>) in the south of Freiburg) and explains the establishment by climate change.

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If no, are host plants present in protected cultivation?	Not relevant because establishment is possible outdoors.
Damage to be expected in the PRA area?	<p>Out of the species of powderpost beetles that are introduced to other continents, <i>L. brunneus</i> is considered by far as the most frequent and most harmful destroyer of dry, starchy hardwoods (Geis, 2014).</p> <p>The beetle may cause significant damage by boring into wooden material. In case of a massive infestation, the wood can get powdery to a depth of several centimetres („powderpost beetle"). Damage caused by powderpost beetles mainly becomes visible when infested wood is used in constructions, e.g. doorframes. The infestation becomes visible only after the wood has been extremely processed by the beetles.</p>
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"> • removal of the starch from the wood by storing it in water for one year, • treatment with active ingredients containing boron, • 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 through heat treatments. However, even in small wood pieces numerous beetles can be present so that infested wood stores have to be cleansed intensively. An infestation outdoors is rather difficult 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 as described for <i>L. cavicollis</i>, the eradication is impossible according to Geis (1996).</p>
Remarks	Due to the polyphagy and great adaptability even to small infestation objects (e.g. hot-glued plywood), the beetle is one of the severest cosmopolitan insect pests on wood and material (Geis 2012).
	Cymorek, S. (1984): Verbreitung und Befallsmerkmale des Braunen Splintholzkäfers und anderer

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	<p>Splintholzkäfergattungen. Proceedings Symposium Holzschutz – Forschung und Praxis.</p> <p>Geis, K.-U. (1996): Unbemerkte 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).</p> <p>http://kaeferklaus.de/fileadmin/kaeferklaus.de/Fachaufsaetze/Subtropische Splintholzkaefer unter Einfluss der Klimaerwärmung Suedwestdeutschland Coleoptera Bostrichidae.pdf (accessed on 18-12-2019)</p> <p>Geis, K.-U. (2014): <i>Lyctus brunneus</i> (Steph.) unter Einfluss der Klimaerwärmung: Erster Nachweis einer mehrjährigen Kolonie im naturnahen Gelände Südwestdeutschlands (Coleoptera: Bostrichidae). Mitt. ent. Ver. Stuttgart 49: 79-83</p> <p>Hickin, N.E. (1960): An introduction to the study of British Lyctidae. Rec. 1960 Conv. Brit. Wood Pres. Ass.: 57-96.</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>