Express – PRA[1)] for *Aromia bungii*

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Initiation: Occurrence in Bavaria, request of the Bavarian Plant Protection Service of 27 February, 2012

Express - PRA	***Aromia bungii* (Faldermann)**		
Phytosanitary Risk for Germany	**high** ☒	**medium** ☐	**low** ☐
Phytosanitary Risk for EU-MS	**high** ☒	**medium** ☐	**low** ☐
Certainty of Assessment	**high** ☐	**medium** ☒	**low** ☐
Conclusion	The Red Neck Longhorn Beetle *Aromia bungii* is present in China and up to now neither established in Germany nor in the EU. Now it has been found in Bavaria for the first time. The number of bore holes and the description of the observed beetles (male and female) allow the conclusion that a population has established and that further infestation with oviposition in the neighbourhood is possible. Further spread can be expected unless suitable measures are taken because the climatic conditions are given and host plants are widespread in Germany and the EU. The larvae infest healthy trees and may cause dieback of young trees. Based on this risk analysis it has to be assumed that the beetle is able to establish in Germany or other Member States and could cause considerable damage. Hence, measures for the control and precautions against the spread of *A. bungii* should be taken according to § 4a of the German Plant Inspection Order (PBVO).		
Taxonomy[2)]	Coleoptera, Cerambycidae (longhorn beetles) (The related species *Aromia moschata* is the only species of this genus that occurs in Central Europe.)		
Trivial names	Red Neck Longhorn Beetle, Asiatischer Moschusbockjkkäfer		
Synonyms	*Cerambyx bungii* (NPAG Report, 2009) *Aromia bungii* var. *brunnea* Podaný, 1971, *Aromia cyanicornis* var. *ruficollis* Redtenbacher, 1869 (BioLib, 1999)		
Biology	The larvae of the genus *Aromia* (fig. 1) live in different species of deciduous trees. The beetles (fig. 2) emerge in June. Over the period of two weeks or longer the oviposition takes place. Short time later the larvae emerge. The beetles prefer stressed or damaged trees as brood trees. They might also colonize vital trees. In Northern Europe f. e. *A. moschata* acts also as a primary pest (Schwerdtfeger, 1981). The larvae feed under the bark for two to three years into the sapwood, infrequently also into the core wood (fig. 3). The trees may tolerate an infestation for several years. As the beetles emerge from yet living trees, the subsequent generation can establish at the same tree. That is why a severe damage by larval galleries passing through the		

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	trunk has to be expected in the long term. The last larval stage gnaws a borehole (app. 13 mm diameter) and pushes faecal matter and frass from the hole before emergence and subsequent development into an adult beetle. (NPAG Report, 2009).
Is the pest a vector?[3)]	no
Is a vector needed?[4)]	no
Host plants	Ebenaceae – *Diospyros virginiana* (American khaki); Juglandaceae – *Pterocarya stenoptera* (Chinese wing nut); Meliaceae – *Azadirachta indica* Oleaceae – *Olea europaea* (olive); Poaceae – *Bambusa textilis*; Punicaceae – *Punica granatum* (pomegranate); Rosaceae – *Prunus americana* (American wild plum), *P. armeniaca* (apricot), *P. persica* (peach); *Prunus domestica* ssp. *insititia* , *Prunus* spp. (Burmeister *et al.* 2012). *Salicaceae* – *Populus alba* (white poplar), *Populus* spp.; Theaceae – *Schima superba* (NPAG Report 2009). Because of the broad dispersion of susceptible plant families it can be expected that the range of host plants is even wider.
Symptoms[5)]	Bore holes (app. 13 mm), frass, larval galleries in the wood.
Presence of host plants in Germany[6)]	Host plants are widespread in Germany, f. e. *Prunus* spp. is cultivated to a great extent in commercial and in private fruit cultivation, ornamentals of *Prunus* spp. and *Populus* spp. are widespread as woody plants in parks, gardens and also in the landscape, further aforementioned species also as ornamentals in botanic gardens etc. For some of the host plants (f. e. pomegranate, peach, khaki) the climatic conditions in Germany are scarcely or not suitable.
Presence of host plants in the MS[7)]	Host plants are wide spread in the EU. The range of host plants in warmer/Mediterranean climates is considerably wider than for Germany. Cultivation of olives, apricots, peaches (Mediterranean regions), khaki (*Diospyros kaki*, not *D. virginiana*: France, Greece, Italy, Portugal, Rumania, Slovenia, Spain: CABI 2012a), pomegranate (Cyprus, Belgium, Italy, Spain; CABI 2012b)
Known infested areas[8)]	Asia: China (mostly in Central and Northern provinces), Mongolia, Northern Korea, South Korea, Vietnam (BioLib, 1999) Europe: Germany (Kolbermoor, Bavaria), presumably since 2008/2009 (Burmeister *et al.* 2012). (interception 2008 in the USA (in an industrial enterprise, NPAG Report 2009) and in Great Britain (between wooden pallets in a warehouse, Reid & Cannon, 2010).
Pathways[9)]	Wooden packaging, plants for planting from host plants and means of conveyance from infested areas.
Natural spread[10)]	Comparable to *Anoplophora glabripennis* – relatively slow, short flight distances and long duration of development, and also since a subsequent generation at the brood tree is possible, as long as

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	it shows a certain vitality.
Expected establishment and spread in Germany[11)]	The pest was found in Bavaria in one location (Burmeister *et al.* 2012). As the beetle is present in temperate as well as in subtropical climates and host plants are widespread, further spread has to be expected.
Expected establishment and spread in the MS[12)]	The climatic conditions for establishment and spread are given in temperate and subtropical areas in the EU, host plants are widespread, the range of host plants is even wider than in Germany.
Known damage in infested areas[13)]	Infests healthy and slightly stressed trees, prefers young trees, in the course of time it is able to cause dieback of young or weak trees in case of infestation by several generations.
Limitation of the endangered area in Germany	Germany as a whole because climatic conditions are prevalent and hosts occur all over Germany.
Expected damage in the endangered area in Germany[14)]	Especially for young trees severe damage has to be expected in case that the beetle spreads, including dying back of trees. Severe damage has to be expected for new plantations of fruit trees (especially *Prunus* spp.) (see fig. 4 on the cultivation area of plums in Germany). Aesthetic effects: weak and dying trees disturb the landscape. Environmental damage: *Prunus* species are often used as nesting trees (NPAG Report 2009). There might arise problems in the security of traffic as host trees are often cultivated alongside of traffic ways.
Expected damage in endangered area in MS[15)]	As for Germany, and further damage has to be expected in the cultivation of olives, apricot, peach, khaki, pomegranate (NPAG Report).
Control feasibility and measures[16)]	In China nematodes of the genus *Steinernema* (*Steinernema carpocapsae*) are used for the biological control of *A. bungii* (NPAG Report). Cutting down and eradication of infested and neighbouring trees. Heat treatment of infested wood.
Detection and diagnosis[17)]	Bore holes, frass on infested trees. The beetle grows up to 4 cm, has black shiny lacquery wing cases and a red neck plate (fig. 2). The beetle may also be completely black. From one specimen of the Bavarian occurrence a DNA-sequencing was performed so that exactly determined reference data are available for the molecular biological determination (Burmeister *et. al.* 2012).
Remarks	Only little information is available. Most publications are written in Chinese. Because of the small quantity of available information and data the certainty of the assessment is evaluated as “medium”.
Literature	Burmeister, E.-G., Hendrich, L., Balke, M. (1012): Der Asiatische Moschusbock *Aromia bungii* (Faldermann, 1835) – Erstfund für Germany (Coleoptera: Cerambyicidae). NachrBl. Bayer. Ent. 61

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BioLib (1999): Taxon profile. Species *Aromia bungii*, Faldermann 1835. http://www.biolib.cz/en/taxon/id221256/ website accessed on 05.03.2012.

CABI 2012a: Datasheet *Diospyros kaki* (persimmon)

CABI 2012b: Datasheet *Punica granatum.* http://www.cabi.org/cpc/?compid=1&dsid=45931&loadmodule=datasheet&page=868&site=161. website accessed on 05.03.2012.

Pest tracker (2012): Red Neck Longhorn Beetle. National Agricultural Pest Information System. http://pest.ceris.purdue.edu/pest.php?code=INALFJA. website accessed on 05.03.2012.

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Reid, S., Cannon, R. (2010): *Psacothea hilaris* (Coleoptera: Cerambicidae) and Other Exotic Longhorn Beetles. http://www.fera.defra.gov.uk/showNews.cfm?id=454. website accessed on 05.03.2012.

Schwerdtfeger, F. (1981): Waldkrankheiten, 4. Aufl. Paul Parey Hamburg: 486 S.

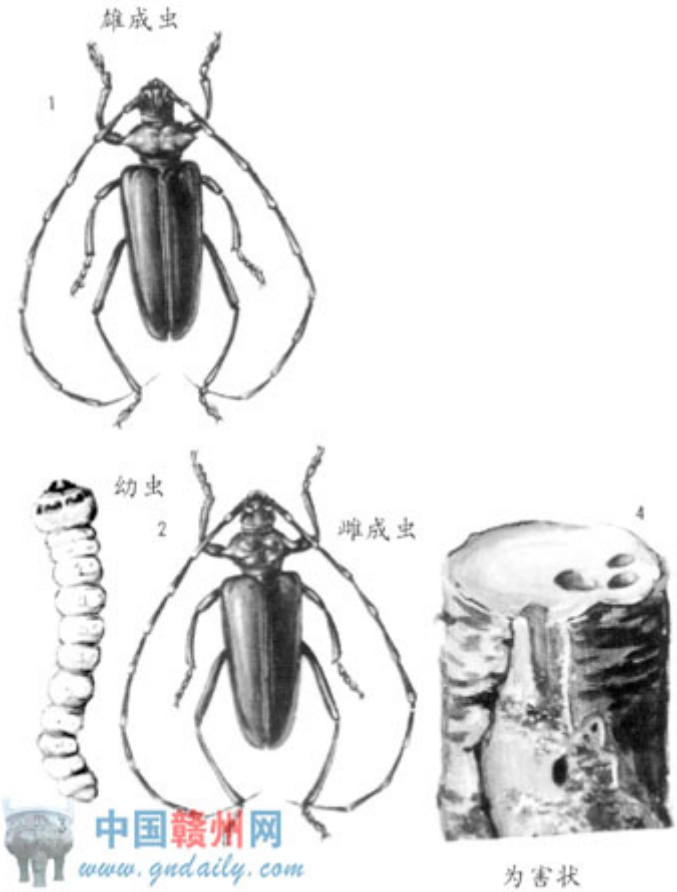

Fig. 1: Imagines, Larva and pattern of damage.
http://tupian.hudong.com/a3_26_82_01300000085669121076821044108_jpg.html

Fig. 2: Imago. http://pest.ceris.purdue.edu/pest.php?code=INALFJA

Fig. 3 pattern of damage
http://tupian.hudong.com/s/%E6%A1%83%E7%BA%A2%E9%A2%88%E5%A4%A9%E7%899B/xgtupian/1/6

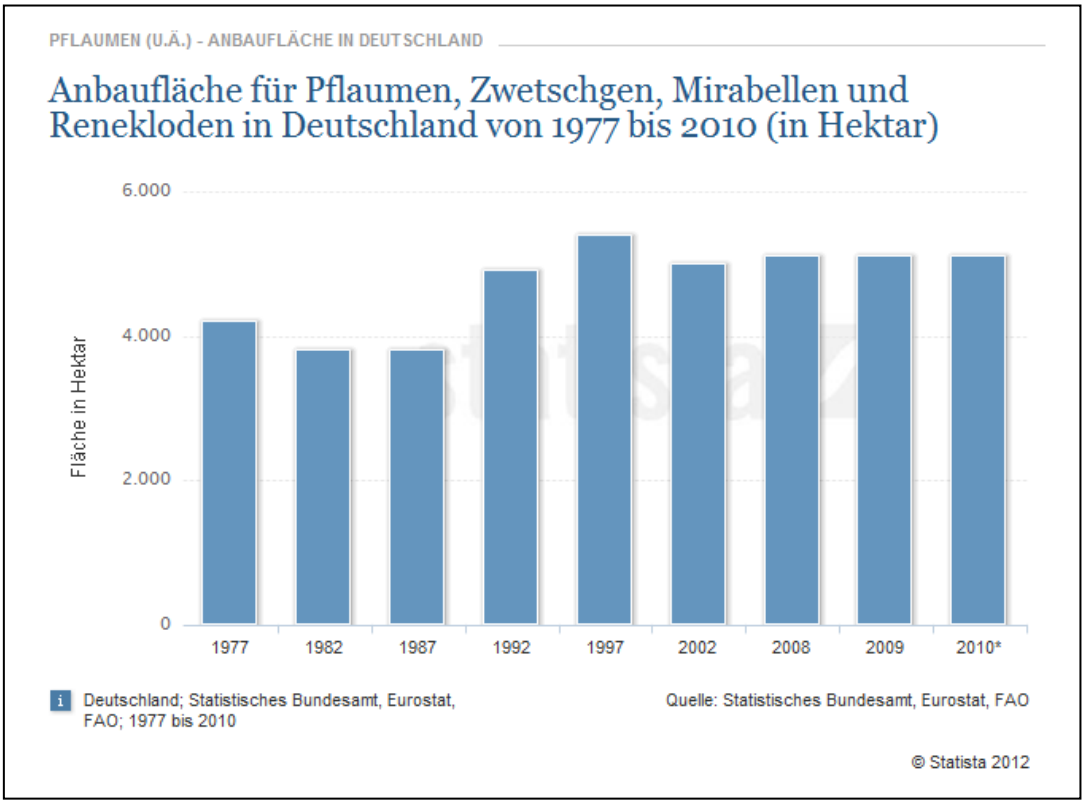

Fig. 4 cultivation area plums etc.

Explanations

1) Compilation of the most important directly available information allowing a first preliminary estimation of the phytosanitary risk. This short assessment is necessary for the decision on a notification to EU and EPPO as well as the preparation of a complete risk analysis, for the information of the countries and as a basis for the possible initiation of eradication measures. Regarding the phytosanitary risk especially the possibility of the introduction into and spread in Germany and the Member States as well as possible damage are taken into account.

2) Taxonomic classification – also subspecies; in case that the taxonomical classification is uncertain the JKI-scientist initiates the taxonomic classification, as far as possible.

3) If so, which organism (which organisms) is (are) transmitted and does it (do they) occur in Germany / the MS?

4) If so, which organism serves as a vector and does it occur in Germany / the MS?

5) Description of the pattern of damage and the severity of the symptoms/damage on the different host plants

6) Presence of the host plants in protected cultivation, open field, amenity plantings, forest.
Where, in which regions are the host plants present and to which extent?
How important are the host plants (economical, ecological,..)? Possible origin

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How important are the host plants (economical, ecological,..)? Possible origin

8) f. e. acc. to CABI, EPPO, PQR, EPPO Datasheets

9) Which pathways are known for the pest and how important are they for the possibility of introduction? Primarily the transport of the pest over long distances is meant, normally with infested traded plants, plant products or other contaminated articles. This does not comprise the natural spread resulting from introduction.

10) Which pathways are known for the pest and of which relevance are they in respect of the possibility of spread? In this case the natural spread resulting from introduction is meant.

11) under the given prevalent environmental conditions

12) under the given prevalent environmental conditions (native areas and areas of introduction)

13) Description of the economic, ecological/environmental relevant and social damage in the area of origin resp. areas of occurrence up to now

14) Description of the economic, ecological/environmental relevant and social damage to be expected in Germany, as far as possible and required, differentiated between regions

15) Description of the economic, ecological/environmental relevant and social damage to be expected in the EU/other Member States, as far as possible and required, differentiated between regions

16) Can the pest be controlled? Which possibilities of control are given? Are plant health measures conducted in respect to this pest (in the areas of current distribution resp. by third countries)?

17) Description of possibilities and methods for detection. Detection by visual inspections? Latency? Uneven distribution in the plant (sampling)?