

Express PRA in Germany

Sharing information about new emerging pests with the plant protection services

Gritta Schrader, Silke Steinmöller,
Katrin Kaminski, Jens-Georg Unger

Institut für Nationale und Internationale Angelegenheiten
der Pflanzengesundheit



Pest Risk Analysis in Germany

German Plant Protection Act (57 (2) No. 4):



Institute for National and International Plant Health of the Julius Kuehn-Institute (JKI):

responsible for **conducting PRA's** to support decision making by the plant protection services of the German Federal States on measures regarding findings of **new emerging plant pests** in consignments, the field, protected cultivation or open landscape

Pest Risk Analysis in Germany

4a of the German plant protection order: New pests

Pest

- not listed in 2000/29/EG,
- not established,
- could establish in Germany or EU,
- could cause significant damage,
- danger for introduction and spread is given

PRA by JKI,
requested by
plant protection
service

→ Plant protection service should prohibit the entry and spread of this organism or de-infest commodity etc.

Pest Risk Analysis in Germany

4a of the German plant protection order: New pests

Plant protection service concerned:

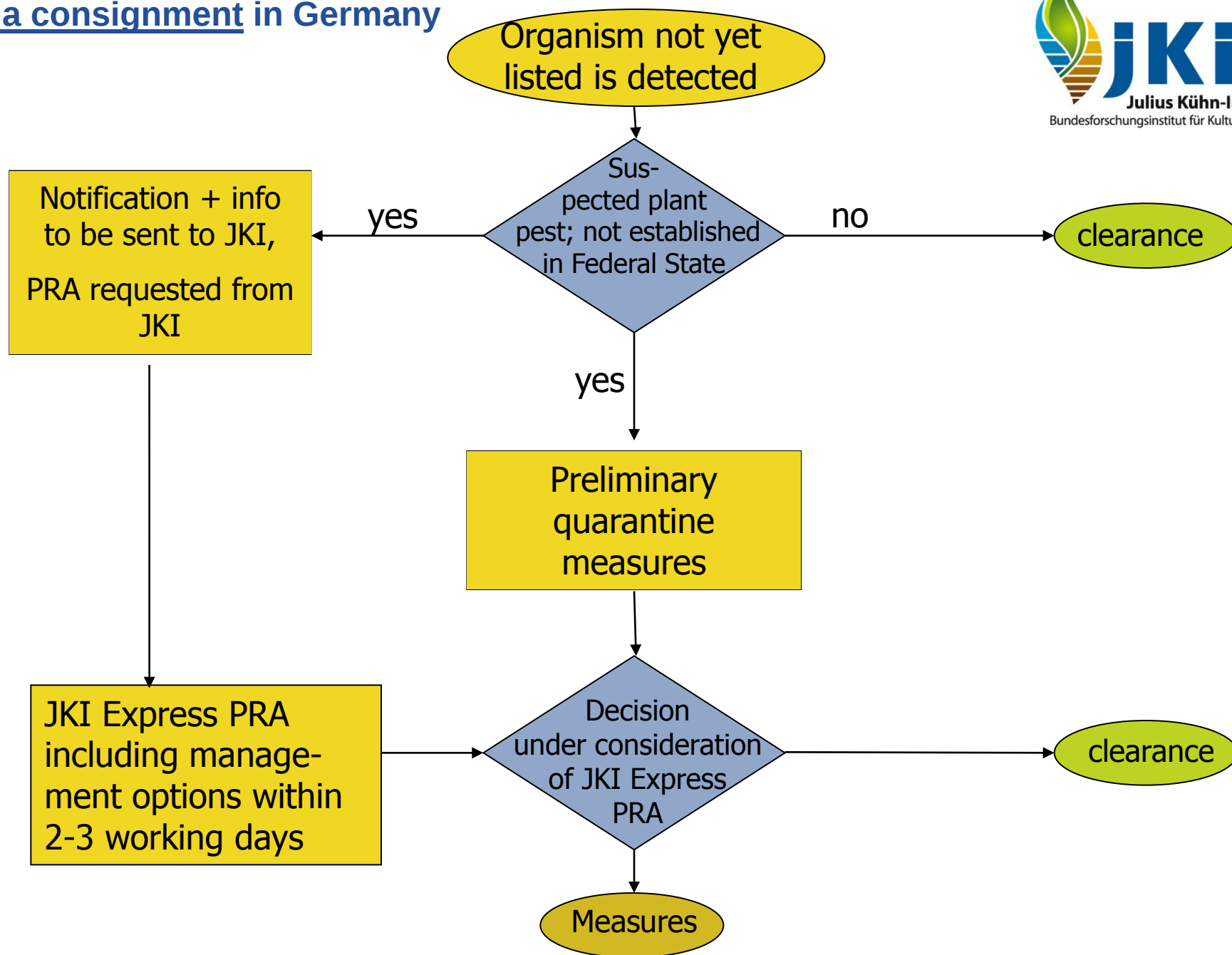
Before PRA:

- preliminary measures against
 - risk of entry and establishment
 - spread of the pest
- prevent dying or rotting of plants/plant products (if possible)
- separate storage

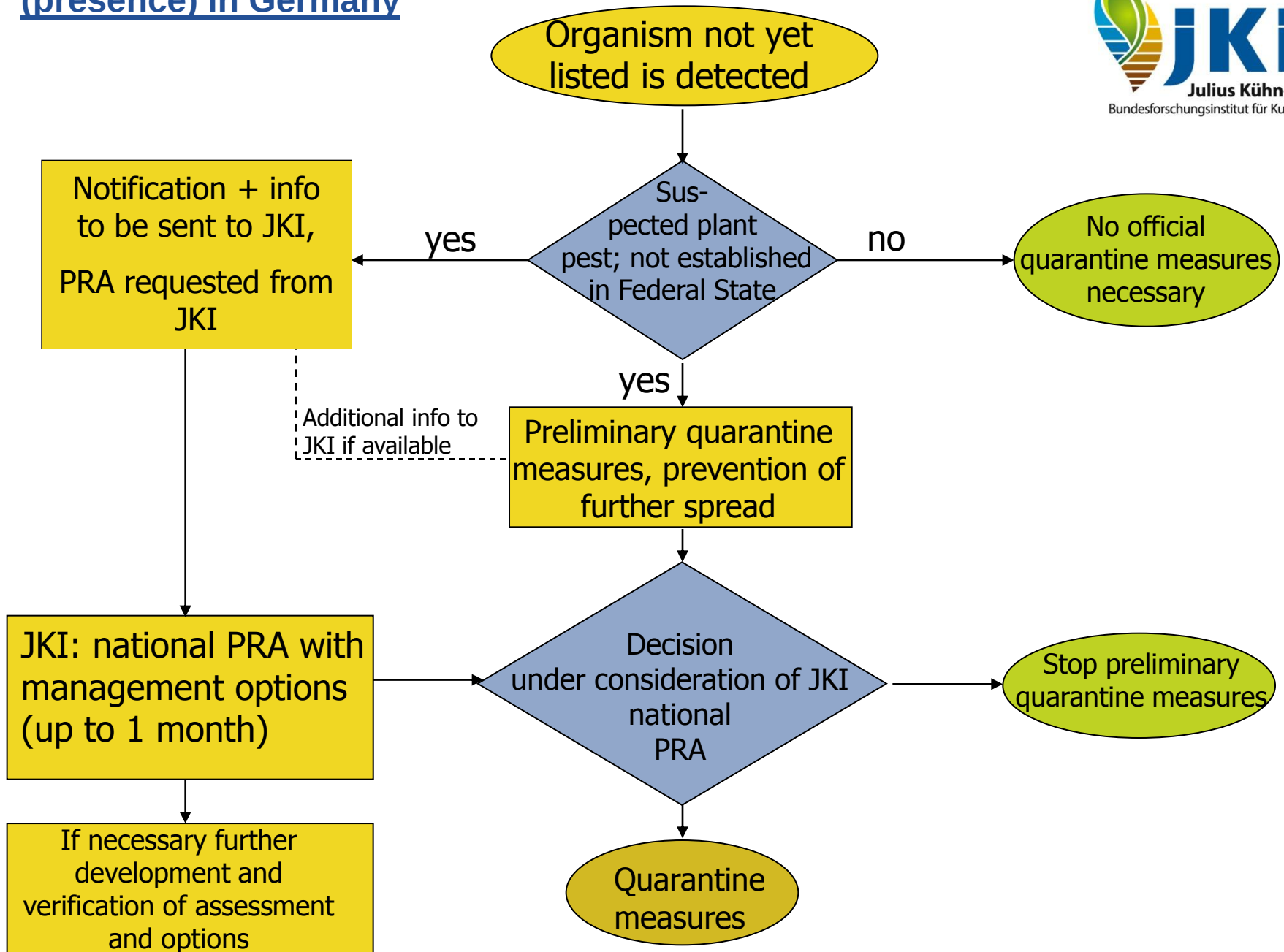
After PRA:

- control/eradication/containment (depending on outcome of PRA)

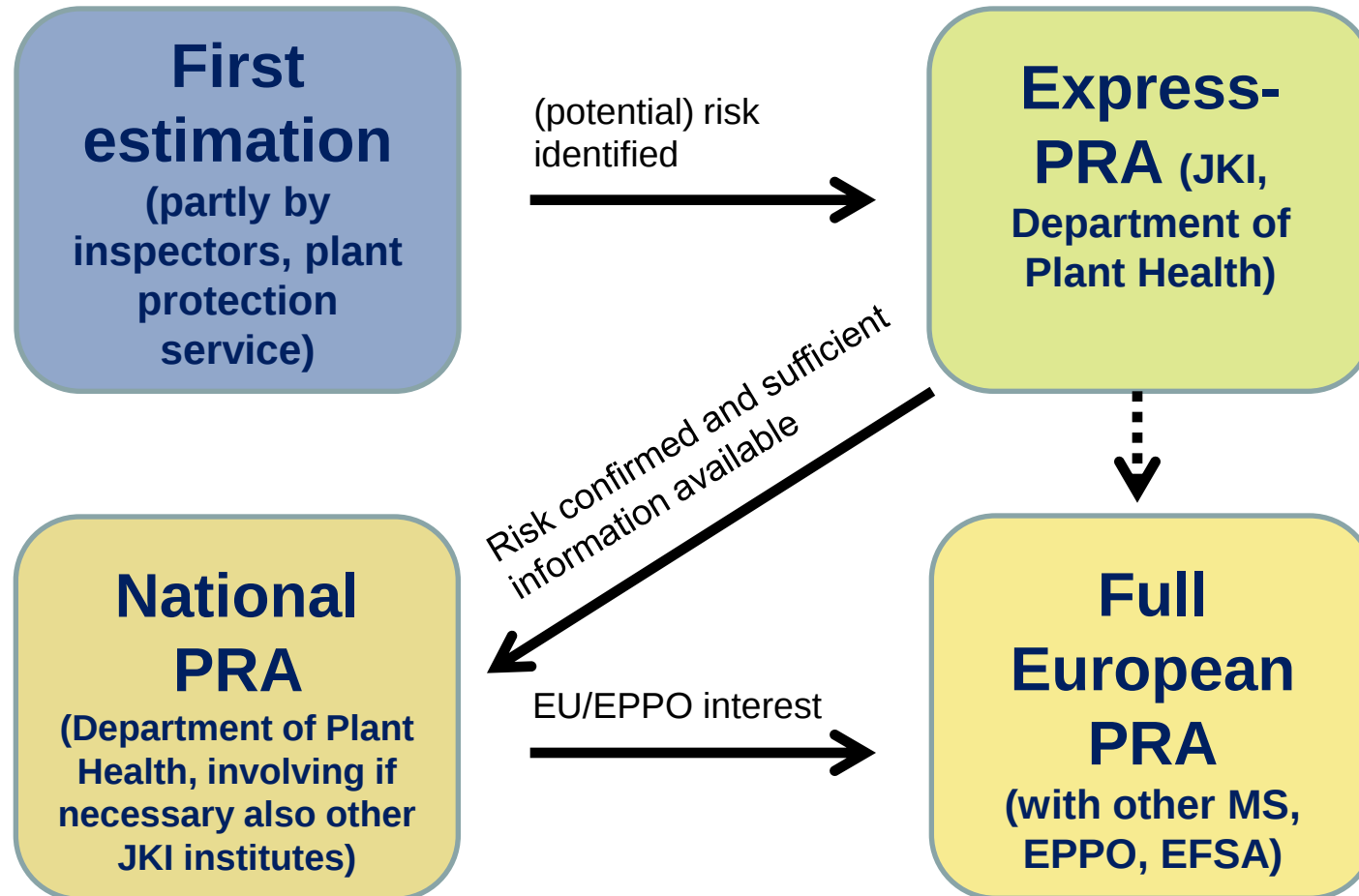
Phytosanitary procedures following detection of a new pest in a consignment in Germany



Phytosanitary procedures following detection of new pest (presence) in Germany



Pest Risk Analyses in the Institute for Plant Health of the JKI:



Express PRA Scheme

- Development of an Express-PRA scheme → inputs from the Food and Environment Research Agency (fera), UK and the Dutch Plant Protection Service (PPS)
 - development of the EPPO Express Scheme (EPO, JKI, fera and PPS) → now applied in Germany
 - covers all necessary information for assessment of pest risks
 - usually delivered within 2-3 days to the plant protection services, enabling quick action (e.g. rejection of a consignment)
 - includes certain degree of uncertainty, also depending on information being accessible
- Collecting information to assess the potential risks of these emerging pests can be difficult due to the lack of data

Express-PRA

Express - PRA	<i>Aromia bungii</i> (Faldermann)		
Phytosanitary Risk for Germany	high X	medium	low
Phytosanitary Risk for EU-MS	high X	medium	low
Certainty of Assessment	high	medium X	low
Conclusion	The Red Neck Longhorn Beetle <i>Aromia bungii</i> 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 <i>A. bungii</i> should be taken according to 4a of the German Plant Inspection Order (PBVO).		
Taxonomy ²⁾	Coleoptera, Cerambycidae (longhorn beetles) (The related species <i>Aromia moschata</i> is the only species of this genus that occurs in Central Europe.)		
Trivial names	Red Neck Longhorn Beetle, Asiatischer Moschusbockjkkäfer		
Synonyms	<i>Cerambyx bungii</i> (NPAG Report, 2009), <i>Aromia bungii</i> var. <i>brunnea</i> Podaný, 1971, <i>Aromia cyanicornis</i> var. <i>ruficollis</i> Redtenbacher, 1869 (BioLib, 1999)		
Biology	The larvae of the genus <i>Aromia</i> (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. <i>A. moschata</i> 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 trunk has to be expected in the long term.		

Express-PRA

Summary of the Express Pest Risk Analysis for “pest name”			
PRA area: <i>specify the PRA area being assessed</i>			
Describe the endangered area: <i>(see question 14)</i>			
Main conclusions <i>Overall assessment of risk: (Copy your answer from Q 15).</i> <i>Phytosanitary Measures: indicate whether the pest should be recommended for immediate action in the PRA area. Summarize your answer from Q 16.</i> <i>Note: If the assessment shows that phytosanitary measures are not required for your country but there are indications that other EPPO countries are at higher risk, mention it.</i>			
Phytosanitary risk for the <u>endangered area</u> <i>(Individual ratings for likelihood of entry and establishment, and for magnitude of spread and impact are provided in the document)</i>	High ☐	Moderate ☐	Low ☐
Level of uncertainty of assessment <i>(see Q 17 for the justification of the rating. Individual ratings of uncertainty of entry, establishment, spread and impact are provided in the document)</i>	High ☐	Moderate ☐	Low ☐
Other recommendations: Inform EPPO or IPPC or EU Inform industry, other stakeholders State whether a detailed PRA is needed to reduce level of uncertainty (if so, state which parts of the PRA should be focused on) Specify if surveys are recommended to confirm the pest status State what additional work/research could help making a decision.			

Zusammenfassung *Purpuricenus temminckii* ist ein aus Südostasien stammender Bockkäfer, der Bambus (*Bambusa* sp. und *Phyllostachys* sp.) befällt und in der EU nicht vorkommt. Als Wirtspflanzen sind bisher nur Bambusarten (lebende und gefällte Stämme) bekannt. Der Käfer wurde bereits mehrfach in den USA beanstandet. Die Einschleppungswahrscheinlichkeit wird als mittel, die Etablierungswahrscheinlichkeit im Freiland als niedrig, im geschützten Anbau als mittel eingeschätzt. Ausbreitungs- und Schadpotenzial werden beide als niedrig eingestuft. Der Käfer wird daher nicht als potenzieller Quarantäneschadorganismus eingestuft, § 4a der PBVO ist demnach nicht anzuwenden. Dennoch wird empfohlen, befallenes Pflanzenmaterial vorsorglich zu vernichten, da die Unsicherheit der Risikobewertung aufgrund geringer Informationen hoch ist.

PRA-Gebiet: Deutschland, EU-Mitgliedstaaten

Beschreibung des gefährdeten Gebietes: Es wird im gesamten PRA-Gebiet kein bedeutender Schaden erwartet.

Fazit: Das Risiko wird insgesamt als gering eingestuft.

Phytosanitäre Maßnahmen: Der Käfer wird aufgrund des geringen Schadpotenzials nicht als Quarantäneschadorganismus eingeschätzt. Da die Unsicherheit der Risikobewertung hoch ist, wird aber dennoch empfohlen, befallenes Pflanzenmaterial zu vernichten.

Phytosanitäres Risiko für das gefährdete Gebiet	Hoch ☐	Mittel ☐	Niedrig ☒
Unsicherheitsgrad der Bewertung	Hoch ☒	Mittel ☐	Niedrig ☐

Weitere Empfehlungen: Es wird empfohlen, bei Inspektionen auf Bambus als Verpackungsmaterial zu achten, da dieses offenbar zunehmend als nicht ISPM 15-relevanter Ersatz für Holz verwendet wird. Es sind eine Reihe weiterer Schadorganismen bekannt, die Bambus befallen, aber weniger wirtsspezifisch sind. So befällt z. B. der Bockkäfer *Chlorophorus annularis* nicht nur Bambus, sondern offenbar auch Mais.

Example: *Aromia bungii*



Data collection:
What causes
these symptoms?
Determination of
species



Infested tree, larvae and galleries

Photos: Raffaele Griffo – Plant Health Service of Campania Region, Naples (IT) and Bruno Espinosa - Dipartimento di Entomologia e Zoologia agraria "Filippo Silvestri", Portici, Naples (IT)

Example: *Aromia bungii*



<http://pest.ceris.purdue.edu/pest.php?code=INALFJA>

Adult beetles

Photos: Raffaele Griffo - Plant Health Service of
Campania Region, Naples (IT)

Data collection:
Determination of
species



Example: *Aromia bungii*

Data collection:
Host plants?
Damage?



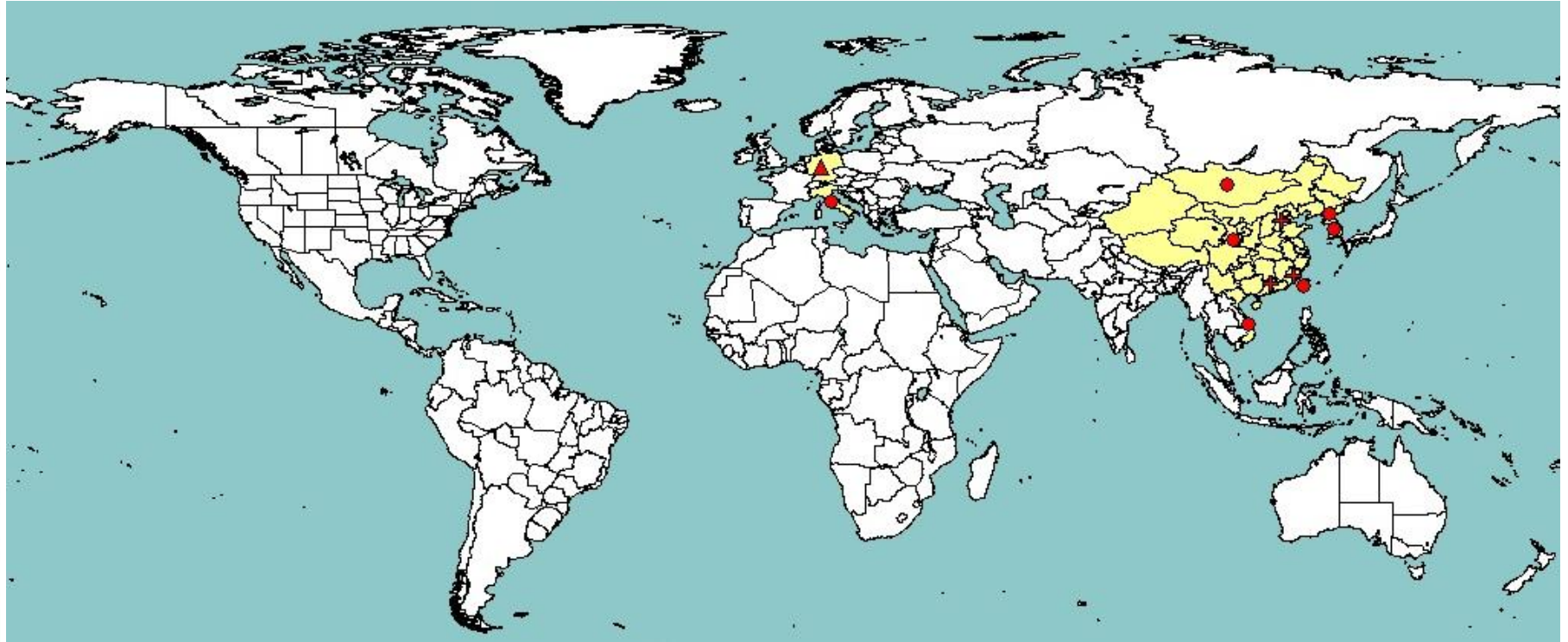
- oligophag
- probably only or mainly *Prunus* spp.
- further plant families/genera are mentioned but not confirmed
- in Italy and Japan already new *Prunus* species infested



Damage on trees

Photos: Daniela Benchi – Plant Health
Service of Campania Region, Naples (IT)

Example: *Aromia bungii*



Annex III of Directive 2000/29/EC

- Import of *Prunus* species from many areas, where *Aromia bungii* is present is prohibited
- But potential indirect import via Third Countries which are allowed to introduce *Prunus* species into the EU

Data collection:
Distribution?
Legal status?

Example: *Aromia bungii*

- Coleoptera, Cerambycidae (longhorn beetles)
- Related species: *Aromia moschata*; the only species of the genus present in Central Europe
- Larvae live in different deciduous trees, mostly *Prunus* spp.
- Adults emerge in June
- Oviposition over 2 weeks or longer, larvae hatch quickly
- Beetles oviposit on stressed or damaged trees, but also on vital and young trees
- Larvae feed for 2 – 3 years under the bark into the wood
- Trees can tolerate infestation for some years
- Next generation can establish in same tree → increased damage
- Last larval stage bores a hole (ca. 13 mm in diameter) then adult emerges

Data collection:
Biology of the pest

Example: *Aromia bungii*

China: nematodes from the genus *Steinernema*
(*Steinernema carpocapsae*) used for biological control

Felling and destruction of infested trees and those close to them

Heat treatment of infested wood

Data collection:
Management
options for the
pest



© Matteo MASPERO

Example *Aromia bungii*: PRA actions

**First
estimation**
plant protection
service Bavaria

(potential) risk
identified **YES**



**Express-
PRA** (JKI,
Department of
Plant Health)

EU/EPPO interest
**YES, infestation in
Naples**

Risk confirmed and sufficient
information available

**Full
European
PRA**
(EPPO)

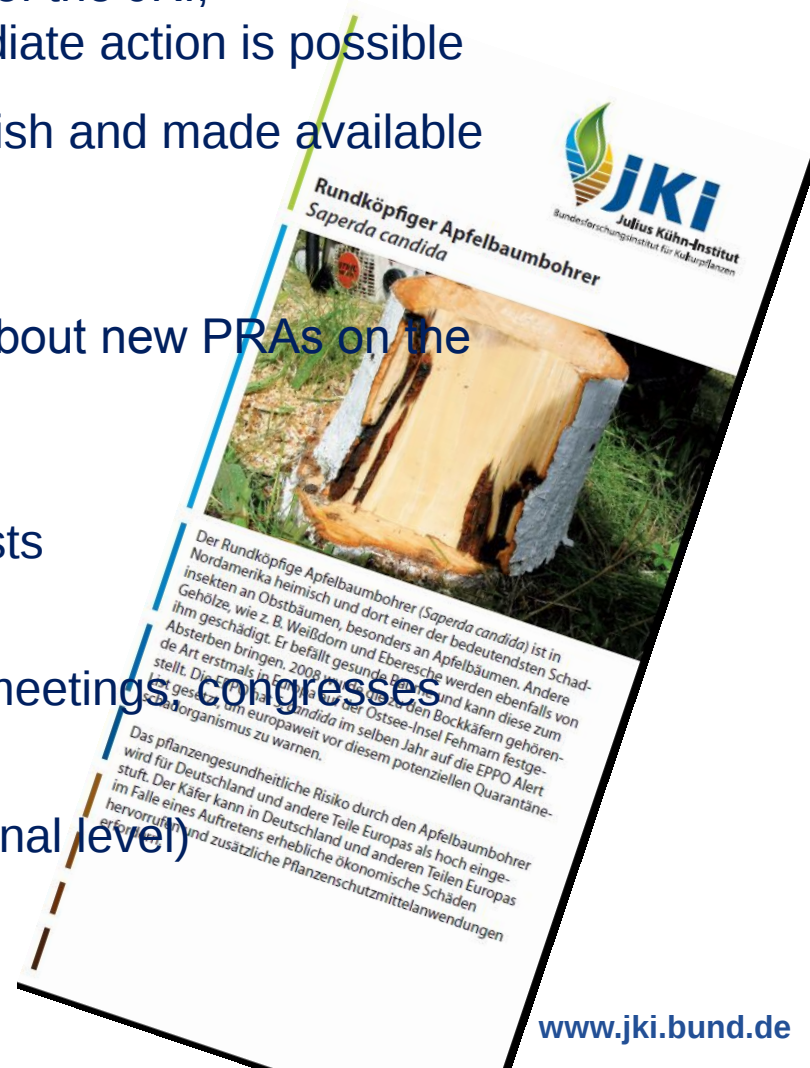


Specific challenges by new pests

- Frequently, new pests found in consignments from Asia, in particular China, descriptions often only in Chinese
 - pest not described anywhere / no or sparse information available
- Estimation of risks (incl. uncertainties) and provision of management options by:
- Using information from related species
 - relying on expert judgment, based on longstanding experience in JKI
 - exchange with other scientists on national and international level
 - initiation of research

Information sharing on PRA

- information sharing with plant protection services and the public by putting PRAs on the website of the JKI,
→ in case of a repeated finding, immediate action is possible
- Express-PRAs are translated into English and made available on the JKI website
→ also other NPPOs are informed
- EPPO uses “scoop it” to be informed about new PRAs on the JKI website and to inform about it
→ further dissemination of information
- JKI leaflets for especially important pests
→ focus on important risks
- presentations of PRAs at workshops, meetings, congresses
→ further dissemination of information
- publication in journals (usually on national level)
→ further dissemination of information



Express-PRAs

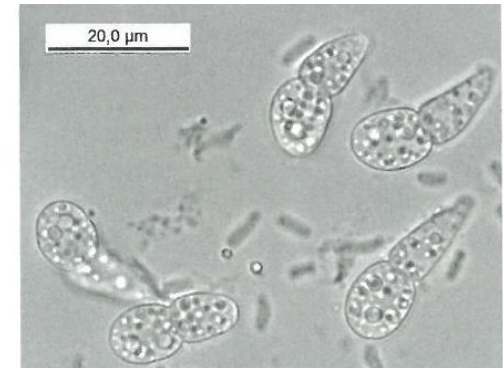
Ambrosia artemisiifolia
Meloidogyne enterolobii
Puccinia psidii
Saperda candida
Syndrom basses richesses



Aproceros leucopoda



Aromia bungii



Marssonia coronaria



Macchiademus diplopterus



Psacothaea hilaris



Candidatus Liberibacter solanacearum



Strauzia longipennis