

More feasible detection methods used for the Control of WPM in terms of Harmful Organisms

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More feasible detection methods



Import Inspection

- Special requirements for inspection places
- Use of special trained detection dogs

Commission Implementing **Decision 2013/92/EU**
came into force on 1st April 2013 amended per
Commission Implementing **Decision 2015/474/EU**

- This Decision lays down plant health checks and measures to be taken on wood packaging material in use in the transport of certain specified stone commodities originating in China **before customs release**.
- The aim is to prevent the introduction and spread of harmful organisms, in particular *Anoplophora glabripennis* (Motschulsky).
- only a very few EU Member-States reported interceptions and non compliances
- Austrian inspectors notified about 10% of the inspected consignments
- **Different ways and precision of inspection ???**

Import Checks at approved Places of Inspection

- Austria has no EU first entry point -> all inspections have to be carried out at approved places of inspection
- Strong requirements:
 - Walk in space for inspection
 - Adequate light for inspection
 - Availability of a fork-lift truck with an experienced driver
 - Adequate space for storage of unloaded pallets
 - Availability of authorized person for opening the container according custom regulations
 - Adequate Space for fumigation treatment in case of non compliance

WPM Inspections acc. Impl.Dec 2013/92/EU (Periode April - September 2014 CN 6802) all EU-MS

EU Member State	No. of incoming consignments	Inspected Consignments	Harmful Organism + correct ISPM Mark	Missing ISM Mark without harmful organism	Total No. of inspected consignments with non-compliant WPM	Total No. of inspected consignments with compliant WPM	% Inspected (Frequency = 15 % according to 2013/92/EU)
Austria	758	167	16	3	19	148	22
Belgium*	1865	420	0	2	2	418	23
Bulgaria	242	98	0	3	3	95	40
Cyprus	84	20	0	0	0	20	24
Czech Republic	249	61	1	0	1	60	24
Germany	3829	1596	6	7	13	1583	42
Denmark	13	3	0	1	1	2	23
Estonia	29	29	1	4	5	24	100
Spain***	1666	250	0	4	4	228	15
Finland	127	35	0	0	0	35	28
France	567	170	16	2	18	152	30
Greece	No REPORT						
Croatia	58	24	0	2	2	22	41
Hungary	0						
Ireland	451	71	1	0	1	70	16
Italy	731	571	0	4	4	567	78
Lithuania	136	136	0	3	3	133	100
Latvia	23	23	0	2	2	21	100
Luxembourg	6	0					0
Malta	7	5	0	0	0	5	71
The Netherlands	1773	403	5	4	9	394	23
Poland	1173	519	0	0	0	519	44
Portugal	17	4	0	0	0	4	24
Romania	13	13	0	0	0	13	100
Sweden	99	21	0	1	1	20	21
Slovenia**	532	78	0	0	0	78	15
Slovakia	0	17	0	0	0	17	100
United Kingdom	1333	313	0	7	7	306	23
TOTAL	15781	5047	46	49	95	4934	32

WPM Inspections acc. Impl.Dec 2013/92/EU (Periode April - September 2014 CN 6801) all EU-MS

EU Member State	No. of incoming consignments	Inspected Consignments	Harmful Organism + correct ISPM Mark	Missing ISM Mark without harmful organism	Total No. of inspected consignments with non-compliant WPM	Total No. of inspected consignments with compliant WPM	% Inspected (Frequency = 15 % according to 2013/92/EU)
Austria	135	31	1	0	1	30	23
Belgium	649	135	0	1	1	134	21
Bulgaria	0						
Cyprus	0						
Czech Republic	22	14	1	0	1	13	64
Germany	2313	928	9	5	14	914	40
Denmark	31	4	0	0	0	4	13
Estonia	39	39	0	1	1	38	100
Spain*	153	23	0	0	0	23	15
Finland	141	48	2	0	2	46	34
France	398	103	6	1	7	96	26
Greece	no REPORT						
Croatia	0						
Hungary	0						
Ireland	84	17	0	0	0	17	20
Italy	116	65	0	3	3	62	56
Lithuania	8	8	0	0	0	8	100
Latvia	0						
Luxembourg	0						
Malta	0						
The Netherlands	1233	304	10	8	18	286	25
Poland	43	12	0	0	0	12	28
Portugal	1	1	0	1	1	0	100
Romania	0						
Sweden	253	43	1	0	1	42	17
Slovenia	33	7	0	0	0	7	21
Slovakia	0						
United Kingdom	623	241	0	1	1	240	39
TOTAL	6275	2023	30	21	51	1972	32

List of living stages of wood boring insects detected in WPM from China, in the period 1. 4. 2013 till 31.03.2015 by inspectors of the Austrian Plant Protection Service

Pest	Number
<i>Anoplophora glabripennis</i> (ALB)	10
<i>Trichoferus</i> sp.	16
<i>Apriona germari</i>	2
<i>Callidiini</i>	2
<i>Clytini</i>	1
<i>Aromia</i> sp.	1
<i>Phoracantha</i> sp.	1
<i>Batocera lineolata</i>	1
Unknown species of Cerambycidae	8
Total Cerambycidae	42
<i>Scolytinae</i> / <i>Scolytus</i> sp. (bark beetles, ambrosia beetles)	12
<i>Lyctidae</i>	9
<i>Anobidae</i>	1
<i>Bostrichidae</i>	2
<i>Platipodidae</i>	2
Total wood boring small beetles	26
<i>Buprestidae</i>	1
<i>Cossidae</i>	3
<i>Siricidae</i> (wood wasp)	1

Inspection procedure

- Before opening the container residual gas-measurement (Inspector or representatives of inspection place) e.g. with Dräger Accuro Pump has to be done
- If gas (Methyl bromide) is detected → container will not be inspected → warning sticker is placed on the container door



Danger because of gas inside the container



Inspection procedure

- Every pallet, every WPM unit has to be unloaded and inspected. When the number of cases of non compliance has reached the critical limit, unloading is stopped and a appropriate treatment has to be done.
- If inspection is done with detection dogs at least one third of the WPM units has to be unloaded, because dogs are sniffing inside the container



Import- Inspection of WPM



After residual gas-measurement without positive result the customs seal is broken and the container opened

Import- Inspection of WPM



- Unit by unit is unloaded with fork-lift trucks and presented to the inspector, often 2 fork-lift trucks are working alternating

Inspection of WPM



The inspector looks carefully at every side and also at the top and to the bottom. The driver of the fork-lift truck lifts the unit to the appropriate height.



Inspection of WPM



checking of WPM already in the container with detection dogs, if possible (if no residual Methyl Bromide fumigant is present!)



Anoplophora sniffing dogs monitoring Wood Packaging Material from Asia



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© Ute Hoyer-Tomiczek, BFW

AB
BFW
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Training of the dogs: two weeks in special training courses;
then regularly self training



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Findings in WPM from China



cf. *Apriona germari*

Findings in WPM from China

Apriona germari

Mulberry Longhorn Beetle

Further species:

A. japonica

A. cinerea

Origin: China, India, South-East-Asia

Introduction:

2008, 2009 Netherland with WPM

????

2012, 2013 Austria: several times in WPM

Host spectrum:

- very polyphagous (70 species), mostly trees, but also herbaceous plants
- Morus (Mulberry), Populus, Salix, Malus, Ficus, Ulmus, Betula

Larva: up to 5-6 cm long, without legs, radial black grain on prothorax, produces bigger saw dust and galleries than ALB

Beetle: 3-4 cm, ochre-greenish coloured with black spots (granulates) on the wing basis, striped antennae



Christof Schweiger, BFW



Findings in WPM from China



© Manuel Völkl, BFW

larva and pupa of ALB



© Manuel Völkl, BFW

BFW Bundesanstalt für Wald



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Findings in WPM from China

Cerambycidae: *Trichoferus campestris*



Typical symptoms:

- gallery close to the surface, the residual wood layer is thin like a skin
- gallery densely filled with fine saw dust

BFW Bundesanstalt für Wald

Findings in WPM from China



Mostly the middle pole is of less quality and often shows symptoms.



The middle pole can be removed easily for further investigation. The unit will not become unstable.



Findings in WPM from China

also *Bostrichidae* possible

- *Sinoxylon* sp.
Powder post beetles



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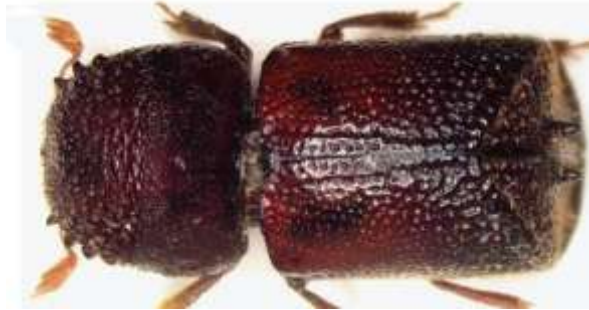
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Findings in WPM from China

also *Bostrichidae* possible

- *Sinoxylon* sp.



Findings in WPM from China

also *Bostrichidae* possible

- *Lyctus africanus*



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Findings in WPM from China

also *Bostrichidae* possible

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Findings in WPM from China

also *Bostrichidae* possible

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More feasible detection methods



Inspection of WPM

- Nematode extraction
- Resin flow

Nematode Extraction

- After heat treatment or fumigation no living harmful wood inhabiting organism should survive inside the wood
- Insects can easily be detected by fresh eject of sawdust or wood shavings
- Sapwood nematodes cannot be seen with the naked eye or with magnifying glass
- nematode extraction method necessary

Nematode Extraction

- For PWN (*Bursaphelenchus xylophilus*) the method is described in EPPO standard
 - Use a power drill or an axe and take at least 60g
 - Avoid to drill to fast (heat kills nematodes)
 - Put the samples in plastic bags and take records of the WPM unit and take it to laboratory
 - (Incubate at room temperature for 5 – 10 days)
 - Water the samples into Baerman funnels for 48 h



Nematode Extraction

- In EU and the in many other countries there can be found a lot of nematode species inside the wood (Xylem part) – they belong to Aphelenchoidea like *Bursaphelenchus* species.
- If there is any living stage of such nematode inside the wood – especially coniferous species, the treatment was not carried out properly.
- But be careful, when sampling you have to use for analysis only wood chips or shavings from the inner (sapwood) part, not from the surface of the piece of wood.
- On the outer-surface there might be external nematodes which can invade moist and moldy wood also after treatment

Resin Flow on Coniferous species

- If WPM material is produced out of Pines, Spruces or other coniferous species, you can sometimes find tracks of resin; especially in resin-galls and -channels
- During heating resin is normally floating out of the channel and then (after the treatment) becomes hard (crystallizes)
- If not heat treated resin keeps inside the resin channel and slowly dries out only on the surface. As a whole it keeps sticky.
- This indication can only be used if wood species have resin galls or large channels. Deciduous trees don't have.

Flow out of resin, crystallized after HT for 48 hours



Foto: Pfister STMK

Flow out of resin, crystallized after HT for 48 hours



Foto: Pfister STMK

No Flow out of resin, sticky no HT



Foto: Pfister STMK

**No Flow out of resin, sticky
no HT**

