Forstschutz Aktuell Nr. 31 - Abstracts

Forest Health Protection 2003 in Austria

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In 2003 the forest protection situation in Austria was characterized by high summer temperatures and extremely low precipitation in the more eastern parts of the country. These factors favoured all kinds of insect pests, especially bark beetles and caterpillars, but also discriminated fungal diseases with only one exception (*Sphaeropsis sapinea*). In the context with frost damage *Phaeocryptopus gaeumannii* and *Rhabdocline pseudotsugae* increased also regionally.

Immigrated and Introduced Pests and Diseases

H. Krehan, U. Hoyer and T. L. Cech

Import Inspections, Surveys
Among the most dangerous imported products are stones and electronic equipment from PR China shipped in containers with solid wood packaging material. Due to strong phytosanitary import requirements the number of detected living stages of organism (e.g. wood boring insects, sapwood-nematodes) decreased compared to the years before. The exact diagnosis of imported quarantine longhorn beetles in each ontogenetic stage is of special interest to the Plant Protection Service. Morphological features give less evidence for reliable determination done by non-specialists. Also the morphological determination of early stages like egg and larvae is nearly impossible. Molecular investigations were initiated in Austria with the aim to develop a non-morphological diagnostic method for determination of *Anoplophora glabripennis* and its differentiation from other *Anoplophora* species, from imported and native *Monochamus* species, and other native longhorned beetles. DNA from adults, larvae, pupae and eggs was amplified with mitochondrial primers and PCR (polymerase chain reaction) products were digested with restriction enzymes (PCR-RFLP (restriction fragment length polymorphism)). Based on the mitochondrial PCR-RFLP method it is possible to clearly distinguish *A. glabripennis* from the other four *Anoplophora* species and also from the three *Saperda*- and ten *Monochamus*-species involved and to differentiate one from the other by digesting one or two PCR fragment(s) with five (or eight) different restriction enzymes providing species specific RFLP patterns.

Asian Longhorned Beetle (ALB) *Anoplophora glabripennis* - infestation in Braunau/Inn
The results of the intensive ALB-monitoring in the city of Braunau are shown in the table. Horse Chestnut tree (*Aesculus hippocastanum*), Birch (*Betula pendula*) and a special variety of Beech (*Fagus sylvatica* 'Asplenifolia') are new host trees in Austria.

Survey of *Phytophthora ramorum*
A survey of *Phytophthora ramorum* (Sudden Oak death) conducted in 2003 did not confirm the occurrence of this pathogen in Austria. The quick spread of the disease in Europe, the wide host spectrum comprising native as well as non native trees and shrubs in nurseries, gardens and public green as well as forest sites required an extension of the surveys including forests in all countries of the European Community.

Actual situation of Brownspot-disease (*Mycosphaerella dearnessii*) in Austria
The spread of the needle-cast fungus *Mycosphaerella dearnessi*i in the municipial area of the town of Hollenstein/Ybbs (Lower Austria) was assessed from 1996 to 2003. On 19 samples from *Pinus sylvestris* and *Pinus mugo* infestation by the brownspot-disease was confirmed. After the eradication of all infested trees, no diseased pines were detected any more in 2001, 2002 and 2003. A spread of the disease into the pine forests surrounding the town was not detected. The rather slow spread of the infection is probably a consequence of the unfavourable climatic conditions.
Furthermore, the common occurrence of the red-band-disease (*Mycosphaerella pini*) might have reduced the infection frequency of *Mycosphaerella dearnessii*, since the occurrence of both diseases on the same tree is rare which probably indicates a competition phenomenon. From 2001 to 2002 three spore traps were laid out in order to survey conidial spread by wind: a few conidia were found in only five samples.

Bark-Beetle Gradation 2003

H. Krehan and G. Steyrer

In 2003 more than 2 million m³ damaged wood was cut as a consequence of the enormous bark-beetle outbreak in many coniferous stands in Austria. The small spruce bark-beetle *Pityogenes chalcographus* was found in 440.000 m³ Norway spruce logs, in comparison to 2002 with about 60.000 m³ infested timber. Due to the extraordinary summer heat and draught many other species of bark-beetles heavily increased and attacked many coniferous and deciduous trees. The storm of November 2002 and of the bark-beetle gradation led to a total breakdown of the price of wood.

Austrian Bioindicator Grid - Results of Sulphur-Analysis 2003

A. Fürst

In Austria, the impact of sulphur has been assessed since 1983 with the help of the Austrian Bioindicator Grid. The annual

sampling allows a precise evaluation of the temporal and regional development of the impact of sulphur on the basis of legal standards. Despite the reduction of SO_2 emissions in Austria, the legal standard is still exceeded on 5-8% of the plots in the last years. Compared to the results of 2002 a lower sulphur content in needles could be found in the northern parts of Austria - in the southern parts a higher sulphur content was found in 2003.

Crown Condition Survey 2003

F. Kristöfel

Annual national crown condition surveys have been carried out in Austria since 1984. Between 1984 and 1988, this involved approx. 2000 plots on a 4 x 4 km grid. In 1989, the national grid was reduced to 8.7 x 8.7 km comprising approx. 260 plots. The European Trans-national Network of 16 x 16 km (according to Regulation No. 3528/86) was integrated within the Austrian National Network. In 2003, crown condition survey was restricted to the trans-national network only, with approx. 130 plots. Therefore, in 2003, it was not possible to produce a national report with defining results, due to incomparable differences within the previous and new sample quantities.
The data collected from the trans-national network are transferred to the Programme Coordinating Centre (PCC) of the International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP-Forests) of the UNECE and the European Commission.
Both, the Council Regulation (EEC) No 3528/86 on the protection of the Community's forests against atmospheric pollution and Council Regulation (EEC) on the protection of the Community's forests against fire expired on 31 December 2003. It was in the general interest of the Community to continue and further develop the monitoring activities established by those regulations. For this reason, they were integrated in a new scheme called 'Forest Focus' according to Regulation (EC) No 2152/2003 of the European Parliament and the Council.

Documentation of Forest Damage Factors 2003

G. Steyrer, W. Krenmayer and H. Schaffer

The Documentation of Forest Damage Factors 2003 (German abbr. DWF) provides data on important forest pests, diseases, vertebrates and abiotic damages, collected through a survey on forest district basis in all privately and publicly owned forests of Austria for the year 2003. The data ascertainment is based on the estimation of 68 damage factors. In addition to the DWF, in Austria forest damage data are collected by other surveys, such as forest statistics (German abbr. FOSTA) and the report of forest harvesting (German abbr. HEM). To avoid misunderstanding when comparing the results of the different surveys and to prevent duplication of ascertainment work, from 2003 onwards, DWF will replace that part of FOSTA which is dealing with forest damages. As a consequence of the structural changes of the year 2002, Vienna is taking part in the survey since 2003 and the Tyrol has refined the ascertainment by adjusting the level of the ascertainment units to those of the other Federal Provinces. Therefore, the number of ascertainment units has increased to 247. As in the year before, the results for the total federal territory are illustrated by maps of the forest districts allowing a good overview on forest health protection.

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