PROBLEMS CONCERNING INTERNATIONAL OAK WOOD TRADE ARISING FROM THE BAN ON METHYL BROMIDE

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The wood processing industry in Europe is strongly dependent on the export of North American hardwood resources. Within the group of hardwood species in particular oak wood is demanded, as European forests are not able to supply the market with the qualities, quantities, and dimensions needed, i.e. for veneering. For decades the high value oak stands located mainly in the northern and eastern parts of the United States have been providing the overseas markets, chiefly the European Union, with oak wood in the rough.

In the 1970's, quarantine regulations strongly restricting the oak wood trade were imposed, because the authorities of the European Union feared the introduction of oak wilt disease caused by the fungus *Ceratocystis fagacearum* (Bretz) Hunt. In the United States the disease was first recorded in the 1940's and has since been found in 21 states. There is apprehension that the introduction of the fungus - taxonomically and ecologically closely related to *Ophiostoma novo-ulmi* Brasier, cause of Dutch elm disease - could pose a serious threat to the health of European oak forests. In the case of Dutch elm disease, the causal fungus increased in pathogenicity and was apparently re-introduced by wood or wood product exports from North America to Europe, subsequently nearly leading to the extinction of the native European elms. In a related case, American chestnut (*Castanea dentata* Marsh.) was almost pushed to extinction in the course of this century by the introduction of the chestnut blight fungus *Cryphonectria parasitica* (Murr.) Barr from overseas. These examples show that quarantine measures for international trade of wood and wood products are warranted.

North American oak wood imported to the European Union is subject to quarantine procedures under Council Directive 77/93/EC. In order to prevent the introduction of the oak wilt fungus to Europe, this directive demands decisive steps to be carried out before loading oak logs for export transportation purposes to member states of the European Union. Directive 77/93/EC requires debarking and removal of sapwood for oak wood in the rough and for oak sawlogs. Furthermore, the wood has to be kiln dried to a moisture content of less than 20% or it must be submitted to a heat treatment. The strict enforcement of this directive could pose a threat to the existence of the wood processing industry in Europe, since the requirements would reduce wood quality of oak wood to such an extent that the veneer industry would not be able to process that timber. Therefore, temporary exceptions from the directive were permitted providing that an exception treatment would kill the causal fungus. The only satisfactory and currently internationally accepted method for desinfecting oak wood is fumigation with methyl bromide.

The quantity of methyl bromide used for log fumigation in relation to the consumption of this chemical used i.e. for agriculture is negligible. Nevertheless, exceptions from the proposed worldwide ban on methyl bromide cannot be expected. The ban on methyl bromide will cause immense problems concerning the international oak wood trade between the United States of America and the European Union unless alternative treatments of those logs assigned for export are developed and standardized for practical use within the next few years. Several methodical considerations are being taken into account: trials with kiln drying and vapor heat treatment as well as investigations on irradiation, alternative fumigants and other different methods. The main problem is that any possible alternative has to be cost efficient on a commercial scale and - at the same time - environmentally acceptable for public opinion which is becoming more and more interested in the possible side effects of methyl bromide replacements.

In the light of international free trade it is in the common interest of industry and the scientific community both in North America and Europe to solve the problems surrounding the replacement of methyl bromide for oak wood trade.