

Occupational exposure to wood dust in the European Union: Preliminary results

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Objectives: The aim of this study was to estimate current exposure to wood dust in the member states of European Union (EU) for the hazard control, exposure surveillance and risk assessment purposes as a part of the EU supported project 'Risk assessment of wood dust: Assessment of exposure, health effects and biological mechanisms (WOOD-RISK)'.

Material and methods: The assessment procedure was designed to provide the numbers of exposed workers by country (15 'old' member states of EU, crude estimates for 10 'new' member states), industry (6 wood industries, 4 other sectors), major species of wood (pine, spruce, oak, beech, wooden boards etc), and level of exposure (5 classes). Company survey on the use of species of wood and on the distribution of workers into similar exposure groups was carried out in Finland, France, Germany, and Spain. The country questionnaires were filled in by 15 national experts providing data on labor force, use of different species of wood, and some other factors needed in exposure assessment. Detailed exposure data were collected from industrial hygiene measurement databases and some large surveys in Denmark, Finland, France, Germany and the United Kingdom. The calculation algorithms of the constructed WOODEX database were used to generate preliminary estimates of exposure. These estimates will be reviewed, modified, and finalized by national experts. The basic data and final estimates will be included in WOODEX database, whose data will be freely available through the Internet by the end of 2004.

Results: It was estimated that there were about 3 million workers occupationally exposed to inhalable wood dust (2% of the employed population) in 15 EU countries in 2000-2002. Construction employed about 1 million exposed workers, most of which were carpenters. The numbers of exposed workers were 600,000 in furniture industry, 300,000 in builders' carpentry industry, 200,000 in sawmilling, 100,000 in wooden board industry, and 800,000 in all other industries. The highest exposure levels occurred in furniture and builders' carpentry mills. Variable exposure levels were typical to construction woodworkers. Lower levels occurred in other wood-industries and forestry. According to preliminary estimates, about 200,000 workers (<10% of the exposed) may be exposed to a level exceeding 5 mg/m³, which is the occupational exposure limit set by EU. About 1.5 million workers (50% of the exposed) were exposed to low levels below 0.5 mg/m³ of inhalable wood dust. Mixed exposure to more than one species of wood was very common.

Conclusions: Exposure to wood dust is common, but the exposure levels are usually below the exposure limit of EU. High exposures requiring efficient dust control occur mainly in mills producing wooden furniture and builders' carpentry, as well as in some construction woodworks.