

## Plant protection products - how is the health risk for users assessed?

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Plant protection products must not have any harmful effects on health. Therefore, not only the assessment of the possible health risks to consumers, but also to users is a central issue in the authorisation of plant protection products. In accordance with European harmonised assessment standards, the BfR evaluates whether the health protection of all people who may come into contact with the product during application is guaranteed if the product is used properly and in accordance with its intended use. This includes, amongst farmers, but also employees in horticulture or non-professional users in the home and allotment garden sector. The experts assess, among other things, the amount of plant protection products absorbed via the lungs or skin (intake via food is evaluated separately). If the exposure exceeds the toxicological reference value, authorisation is only possible with restrictions, i.e. users of plant protection products must wear work clothes, gloves or other protective equipment in order to reduce exposure to an acceptable level. This may also apply to workers who, for example, come into contact with treated plants during harvesting. The risk for residents and other uninvolved parties can be reduced by using technology that reduces drift when spraying plant protection products.

Since 2016, the assessment of user exposure in the EU has been based on the current ESFA model (Agricultural Operator Exposure Model; AOEM), which is integrated into the EFSA Guidance on Exposure Assessment (EFSA Guidance, 2014). The concept is based on measurements in which test persons with work clothes and applied plant protection products under practical conditions. Then, residues penetrating through clothing were measured. In order to determine hand exposure, the amount of chemical in the washing water were analysed after the test persons washed their hands.

The exposure of workers, who work, for example, in treated areas (e.g. during harvesting), is also calculated on the basis of the EFSA guideline. In general people may only enter treated surfaces when the applied plant protection product has completely dried. Measures should be taken if exposure during subsequent work exceeds the reference value. Employees may be required to wear work clothes and even gloves if necessary - depending on the need to reduce the health risk. Additionally, working hours may be limited to a maximum of two hours per day. This is usually only the case for a short period of time. The length of time that protective measures have to be adhered to, is stated.

In principle, there must be information on exposure for all areas of application for which a plant protection product is authorised. This is often done using the standard values from the EFSA guideline. The German Federal Institute for Risk Assessment (BfR) therefore recommends that manufacturers of plant protection products take further measurements for the authorisation procedure, for example, how quickly plant protection products degrade on plants.

New and more realistic exposure calculations can also be submitted to the Federal Office of Consumer Protection and Food Safety for an already authorised plant protection product. The BfR will then evaluate the data. As a result, the authorisation conditions for a plant protection product can be updated and safety requirements adjusted. Generally, the BfR checks the assessments submitted by manufacturers and, if necessary, specifies the safety requirements itself.

**Further information on the subject at the BfR website:**

Using plant protection products in gardens and allotments safely (Notification No. 026/2019) (in German):

<https://www.bfr.bund.de/cm/343/pflanzenschutzmittel-in-haus-und-kleingaerten-sicher-anwenden.pdf>

Questions and answers on the authorisation process for plant protection products (BfR FAQ from 30/12/2014)

[https://www.bfr.bund.de/en/questions\\_and\\_answers\\_on\\_the\\_authorisation\\_process\\_for\\_plant\\_protection\\_products-192764.html](https://www.bfr.bund.de/en/questions_and_answers_on_the_authorisation_process_for_plant_protection_products-192764.html)

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