

THC in feeds made from hemp and hemp products with regard to animal health and the carry-over to foods of animal origin

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Components of hemp (hemp seed, hemp straw, hemp leaves) and products made from them, such as hemp oils, hemp cake and hemp extraction pellets could also be used as components of feeds for food-producing animals. The hemp crop varieties authorised for cultivation in Europe can contain small quantities of the substance tetra hydro cannabiol (THC) which has a psychoactive effect. The Federal Institute for Risk Assessment (BfR) was requested by the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) to assess the risks for animal health which could emanate from feeds containing hemp. In addition, the BfR was to estimate if and in which quantities ingredients of the hemp plant, such as THC from feeds containing hemp, can be transferred to food produced from animals. During its health assessment, the BfR ascertained that only a few experimental studies are available on the effects of THC on livestock. The data situation regarding the transfer of THC from feeds to foods produced from animals is also incomplete. For this reason, the Institute calculated the intake of THC from feed by livestock by means of a model. THC is lipophilic. Under the assumption of worst case conditions, the BfR comes to the conclusion that due to this property, with repeated intake via feeds, the substance can accumulate in the fatty tissue of animals. For this reason, the THC concentration in meat and other foods of animal origin depends on the fat content of the tissue. Consequently, livestock with high fat levels accumulate more THC than animals with low fat deposits. The extent to which the individual livestock species accumulate THC in their tissue could not be estimated, however, due to a lack of data.

Only a few studies conducted with mice, rats, dogs and monkeys are available for the assessment of the effects of low doses of THC on animal health. They show that the individual animal species react differently to THC. For livestock, therefore, it is possible under worst case conditions that the feeding of hemp and hemp products with THC concentrations of 0.2% (the maximum permitted concentration in the hemp varieties authorised for cultivation in Europe) can impair health.

The proportion of hemp and hemp products in each ration and the THC concentration therein determine how much THC is transferred to the foodstuff milk and other dairy products. Due to the lack of available experimental examination results, it has to be assumed that the long-term exposure of dairy cows through even low concentrations of THC in their feed leads to a permanent excretion of THC via the milk. Consequently, milk and dairy products from animals fed with products containing hemp and hemp products could contain traces of THC.

The BfR would like to point out that these estimations have the character of a model. It is proposed that farmers who feed hemp or hemp products to their livestock be issued with feeding recommendations.

The full version of this BfR Opinion is available in German on <http://www.bfr.bund.de/cm/343/THC-in-Futtermitteln-aus-Hanf-und-Hanferzeugnissen.pdf>